STEDT Monograph Series, No. 3

PHONOLOGICAL INVENTORIES OF TIBETO-BURMAN LANGUAGES

Sino-Tibetan Etymological Dictionary and Thesaurus Monograph Series

General Editor
James A. Matisoff
University of California, Berkeley

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PHONOLOGICAL INVENTORIES OF TIBETO-BURMAN LANGUAGES

Ju Namkung, Editor

Sino-Tibetan Etymological Dictionary
and Thesaurus Project
Center for Southeast Asia Studies
University of California, Berkeley
1996

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J.A.M.
Berkeley

INTRODUCTION

DESCRIPTION OF THE STEDT PROJECT

The *Sino-Tibetan Etymological Dictionary and Thesaurus* (STEDT) project began at the University of California at Berkeley in 1987 with joint funding from the National Science Foundation and the National Endowment for the Humanities. The goal of the project is the publication of a multi-volume dictionary, organized by semantic field, of reconstructed Sino-Tibetan (ST) and Tibeto-Burman (TB) roots. To that end hundreds of thousands of lexical items from over 250 Sino-Tibetan languages and dialects have been amassed and analyzed, and the phonological shape and semantic range of thousands of reconstructed roots have been established, confirmed or refined. The first volume of *STEDT*, *Bodypart Nomenclature*, will be published in individual chapter-length fascicles beginning in 1997.

PHONOLOGICAL INVENTORIES

Purpose of the work

This collection of phonological inventories is intended to serve two purposes. First, it will be a companion to the forthcoming *STEDT* volumes. Our database contains data on over 250 languages and dialects culled from more than a hundred published and unpublished sources. While many of these sources employ standard transcriptional systems (such as the International Phonetic Alphabet), many others use idiosyncratic or unconventional transcriptions. The inventories contained herein function as a key to interpreting these sometimes cryptic orthographies, allowing the reader to accurately interpret and assess STEDT data. (It should be noted that not every data source represented in the STEDT database has been inventoried here. Sources for which we have only a few lexical items, which are of poor quality, or which defy phonological analysis have not been included.)

Secondly, this book is meant to stand alone as a useful reference tool for the Tibeto-Burman linguist. Collected in these pages are inventories of over 170 scholarly treatments of the sound systems of more than 150 languages and dialects. A few of these inventories are from sources that are not part of the STEDT database, but have been deemed important enough in their own right to warrant inclusion.

STEDT volumes, the STEDT database, and the STEDT font

In the early years of the STEDT project an attempt was made to retranscribe unwieldy source material according to American or International phonetic transcriptional norms. The data from a number of sources has been "normalized" in this way. Unfortunately, the hope that all STEDT data could be consolidated under a single transcription system, facilitating phonological comparison, turned out to be exceedingly naive. Some very early sources do not explain their transcription systems accurately enough to permit normalization without overinterpretation; some data is transcribed phonemically, some phonetically, and some in a mixture of the two; and sometimes the task of conversion simply proved too demanding on the project's limited resources. We then adopted a policy of strict preservation of original source orthography (as we call it, "following copy"), with occasional deviations necessitated by computer font limitations. (All data is represented in our STEDT font, a mixed-orthography phonetic Macintosh font we have developed for transcribing Tibeto-Burman languages.) Although this policy makes the data more difficult to use for comparative phonological purposes, it ensures that the integrity of the original source data is preserved. The phonological inventories, originally intended to be an appendix to the first volume of *STEDT*, were conceived of as an adjunct to the new policy.

For each source inventoried, the transcriptional symbols are listed *as they appear* in the STEDT database. (For inventories of data sources not included in the STEDT database, the symbols follow the original source usage.) Where these symbols represent a "normalization", that fact is carefully noted and differences with the original transcription are listed.

As an example of how the phonological inventories in this volume can be used, consider the following excerpt from *STEDT Volume 1: Bodypart Nomenclature*:[1]

1.1.1:1.00 *sya-n ⧓ ša-n
FLESH/MEAT/GAME ANIMAL

Sino-Tibetan

*Kiranti	**sa**	*meat*	BM-PK7 116
*Loloish	**sa²**	*meat /flesh*	AW-TBT 289
	xa²	*meat*	DB-PLolo 135
	xa²	*meat*	ILH-PL 81
	ʃə-ro²	*bone*	DB-PLolo 136
	ʃə-ro²	*bone*	ILH-PL 370

[1] The right-hand column shows the "source abbreviation", a shorthand bibliographic citation of the work from which the data was taken. All works in the STEDT database have been assigned a source abbreviation. Source abbreviations are used throughout this volume, usually within square brackets, as in [JAM-VSTB]. For a listing of all source abbreviations with full references to the work they represent, see the list of STEDT source abbreviations at the back of the book.

*Northern Naga	**swun**	*flesh*	WTF-PNN p. 489
*Tibeto-Burman	**sya**	*flesh, meat, animal*	STC 181
	sya	*meat*	BM-PK7 116
	sya	*meat /flesh*	AW-TBT 289
	sya	*meat, flesh*	RJL-DPTB 127
	śɑ	*flesh*	ACST 386a-c
	śɑ	*flesh/meat/animal*	ACST 1100a-f
*Tibeto-Kanauri	**sɑ**(B)	*flesh/meat/animal*	ACST 386a-c
Achang Lianghe	**ʂa^{31}**	*meat,flesh*	RJL-DPTB 127
	ʂɑ^{31}	*meat, flesh*	JZ-Achang
Achang Longchuan	**ʂua^{31}**	*meat,flesh*	RJL-DPTB 127
	ʐua^{31}	*meat, flesh*	JZ-Achang
Achang Luxi	**sa^{55}**	*meat, flesh*	JZ-Achang
	sa^{55}	*meat,flesh*	RJL-DPTB 127
Achang Xiandao	a^{31} **ʂɔ^{31}**	*lean meat*	DQ-Xiandao 559
	ʂɔ^{31}	*flesh*	DQ-Xiandao 154
	ʂɔ^{31}	*meat*	DQ-Xiandao 554
Ahi	pɑ^{33} **xo^{21}**	*flesh / meat*	LMZ-AhiQ 1.11
Akha	**shà-**pɔ̀ʔ	*lung*	JAM-VSTB 1c
	sha paw	*lung*	JAM-Ety
	sha yoeˇ	*bone*	JAM-Ety
	sha˪pya˪k'eh˄	*hip*	JAM-Ety
	sjhà	*meat*	ILH-PL 81
	sjhà-jö	*bone*	ILH-PL 370
	šà·jí	*meat /flesh*	AW-TBT 289
	šà·yø̀	*bone*	AW-TBT 173
Akha (Thai)	**sjhà-**djí	*meat*	ILH-PL 81
	sjhà-jö	*bone*	ILH-PL 370
Akha (Yunnan)	**sjhà** djí	*meat*	ILH-PL 81
	sjhà jö	*bone*	ILH-PL 370

Compare two forms for the Akha word for 'bone': **sha** yoeˇ from [JAM-Ety] and **sjhà-**jö from [ILH-PL] (underlined above). The phonological inventories can be used to explain some of the unusual symbols used. When we consult the [PL-AETD][2] Akha inventory (see following page), we see from its position in the phonemic charts that <sh> represents a voiceless palatal fricative. We also see that <y> is a palatal approximant, that <oe> is a mid front rounded vowel, and that both syllables are oral (non-laryngealized). The tones are a mid tone followed by a high tone. Similarly, the Akha inventory for

[2] The relevant phonological inventory for the Akha forms in [JAM-Ety] is the inventory for which Lewis [PL-AETD] is the "Data Source", as the index by source abbreviation reveals. See below for a discussion of the relationship between different sources and the relevant inventory.

[ILH-PL] shows that <sjh> represents a voiceless aspirated palatal fricative, that <j> represents a palatal approximant and that <ö> represents a mid front rounded vowel. Both syllables are non-laryngealized, with a low tone followed by a high tone.

The inventories thus allow easy comparison of different dialects. The most striking difference is that the dialect of Akha found in [ILH-PL] has an aspiration distinction which the dialect found in [PL-AETD] does not have.

Phonemic charts for Akha data from [PL-AETD]:

CONSONANTS

p	py	t	ts	c	k	
b	by	d	dz	j	g	
		s		sh	k'	h
(v)		z		y	g'	
m	my	n	ny		ng	
		l				

VOWELS

Monophthongs

i , oi	ui , u
e , oe	eu , o
eh	a , aw
m	ah

TONES

	Oral	*Laryngealized*
high	ma˅	
mid	ma	ma˄
low	ma˳	ma˳˄

Phonemic charts for Akha data from [ILH-PL]:

INITIALS

p	pj	t	ts	tj	k	
ph	pjh	th	tsh	tjh	kh	
b	bj	d	dz	dj	g	
		s		sj	x	h
		sh		sjh	xh	
		z			ɣ	
m	mj	n			ŋ	
		l		j		

RHYMES

Non-Laryngealized			*Laryngealized*		
i , ü		y , u	iq , üq		yq , uq
e , ö		ə , o	eq , öq		əq , oq
ɛ	a	ɔ	ɛq	aq	ɔq
m		aŋ	mq		

TONES

	Non-laryngealized	*Laryngealized*
high	má	
mid	ma	maq
low	mà	màq

Quality of the sources

The sources of both our lexical data and the phonological information used in compiling these inventories vary widely in quality, readability, and accuracy. Each type of source demanded different treatment in the compilation of this volume.

For modern sources written by trained linguists which include phonological charts and discussion, inventories could be compiled in a straightforward manner.

Inventory data from sources written in languages other than English (e.g. French, Chinese, Japanese, etc.) required translation by the editors.

Many of the questionnaires solicited from field linguists do not contain explicit inventories; in such cases the editors have "extracted" the inventories based on an analysis of the lexical data and knowledge of the characteristics of the languages concerned.

Older sources, particularly those from the turn of the century, presented particularly vexing problems of interpretation. Many of these employ transcriptions based on the standard British English (RP) of the time, which are explained in impressionistic rather than precise linguistic language. In these cases the editors have had to use careful judgment; often we have tried to avoid over-interpretation by simply quoting the original, while suggesting a likely interpretation.

In a number of cases we have discovered that the phonological or transcriptional system described by an author does not tally with the lexical data presented. We have generally not attempted to rectify such errors unless their solutions are patently obvious; instead we have merely pointed out the discrepancies and occasionally suggested alternative explanations.

The following sources have peculiarities worth pointing out:

- [GEM-CNL]. Marrison's lexical data are presented in an orthographic notation which is not necessarily phonemic. His phonological descriptions, however, are presented as lists of phonemes. For each language, Marrison provides correspondence charts correlating his orthographic symbols with these phonemes. Unfortunately, the meaning of this correlation is not always clear. Where there is a one-to-one correspondence, e.g. orthographic <sh> is phonemic /ʃ/, Marrison seems to mean simply that the phoneme realized [ʃ] is written as <sh>. But when two or more orthographic symbols correspond to a phoneme, e.g. <ts> and <ch> correspond to /c/, it is not clear whether Marrison means that /c/ has two distinct allophones, [ts] and [ch], or that the phoneme /c/ is arbitrarily written as both <ch> and <ts> but always has the same phonetic realization. A further difficulty with Marrison is that his data and phonological descriptions are riddled with typographical errors. In our inventories for Marrison's data, we have listed only the orthographic symbols in the charts, and placed Marrison's phoneme correspondences in the notes. It is left to the reader to interpret the meaning of these correspondences.

  Most of Marrison's lexical data comes from other works, but he seems to have normalized the transcription of most of the data to conform to his own system.

- [ZMYYC]. Many of the Chinese sources, principally [ZMYYC], treat alveolar affricates/fricatives as having a more forward articulation than alveolar stops when placing them in consonant charts. We believe this is not a reflection of phonetic reality, but merely the result of the Chinese analytic tradition. (Even the Chinese nomenclature encodes a distinction: alveolar affricates/fricatives are called literally "tongue-tip front sounds" while alveolar stops are called "tongue-tip middle sounds".) In our treatment of these sources, we have assumed there is no place-of-articulation distinction between alveolar stops on the one hand and alveolar affricates/fricatives on the other unless such a distinction is specifically mentioned.

• Chinese sources. Please note that in romanizing place names, dialect names, etc. taken from Chinese sources, we have generally used the standard *pinyin* transcription system, but have not included tone marks. In the case of place names located in non-Chinese speaking areas, we have sometimes included, in square brackets following the *pinyin*, alternate spellings from other languages or orthographic systems.

Organization of the volume

The inventories are listed in alphabetical order by "standard language name", from Achang to Zhaba. The standard language name is the official designation for the language in the STEDT database; this is usually the name which is now most widely accepted among scholars in the field. (If unable to find a given language, the reader should consult the language name index, which lists other common appellations. STEDT Monograph II, *Languages and Dialects of Tibeto-Burman*, is a more complete reference.) When an inventoried author's name for a language differs from the language name we have chosen as "standard", the author's appellation is given in a footnote.

For many languages more than one inventory is listed, either because different dialects require separate treatment, or because different sources have employed different transcriptions or phonological interpretations for the same language.

In some cases scholars disagree about what constitutes a dialect as opposed to a distinct language. For example, should the various Karen languages be listed as dialects under Karen, or as individually alphabetized languages in their own right? The organizational decisions made by the editors should not be considered a final endorsement of one view over the other.

The running headers across the top of the page indicate the subgroup within Tibeto-Burman to which the language belongs. (See the section on subgrouping below for more information.)

Structure of the inventories

Each inventory contains a heading, source information, and the inventory proper.

1. Heading

The heading of all inventories includes the language name in capital letters. The dialect name, if applicable, appears below the language name in italics. Although a single "standard" name has been chosen for each language, this is not always the case for each dialect. If more than one name is used to refer to the same dialect, both have been listed, separated by slashes. When a dialect is further divided into sub-dialects a colon separates

the subdialect name from the dialect name, as in the case of Amdo: Bla-brang of Tibetan or Lüchun: Dazhai of Hani.

2. Source information

Directly following the language and dialect name, we provide information about the sources relevant to the phonological inventory. The order in which the sources are listed is intended to roughly reflect the history of the path by which the data made its way into the STEDT database.

Data Source: *The original source of the lexical data to which the inventory applies*. Data from the Data Source may or may not be in the STEDT database. In some cases the data from the Data Source may also appear in a secondary source, and it is the secondary source which was entered in the STEDT database. More than one Data Source is listed when the inventory applies equally well to more than one source but neither one is secondary to the other.

The notes which follow the Data Source line generally include information, if available, on the time, place, and manner of the collection of the data and/or an explanation of the dialect described.

Inventory: *The source or sources consulted when compiling the phonological inventory*. The Inventory Source is either the same as the Data Source or the two sources have a close relationship to each other. It may be that the Inventory Source and the Data Source are works by the same author, and thus describe the same dialect and use the same transcription system, as in the example from an Akha inventory, shown below. Hansson's "Phonological comparison of Akha and Hani" [ILH-PCAH] was used to explain the transcription of the Akha data in her "A comparison of Akha, Hani, Khatu and Pijo" [ILH-PL]. Another possibility is that the Inventory Source is a secondary source whose data comes originally from the Data Source, as in the Apatani inventory below. Jackson Sun's dissertation, *A historical-comparative study of Tani (Mirish) branch in Tibeto-Burman* [JS-HCST], was consulted for the inventory for Apatani data from Simon's *An introduction to Apatani* [IMS-Apatani]. A portion of Sun's data on Apatani comes from Simon.

The analysis and transcription in the inventory generally follows that of the Inventory Source. Where the transcription in the STEDT database differs from that of the Inventory Source, the inventory follows the STEDT database, but differences between the STEDT transcription and the Inventory Source's transcription are noted. Where possible, differences between the analysis or the transcription of the Inventory Source and any of the data sources are also noted. Where the phonemic inventory was not explicitly given in the Inventory Source but was induced from the lexical data by the editors, that is noted as well.

Secondary Sources: *Sources in the STEDT database which are derived from the Data Source*. Often these Secondary Sources are etymological works comparing data from several languages. Only Secondary Sources with a significant number of forms in the STEDT database (about 40 or more) are listed. In the example from Apatani below, there are listed two Secondary Sources, Jackson Sun's dissertation [JS-HCST] and his comparative wordlist [JS-Tani], which both take forms from the Data Source, Simon 1972 [IMS-Apatani].

Sometimes the author of the Secondary Source modified the transcription system that were used in the original Data Source. STEDT policy is to follow copy, so that if forms were entered into the database via the Secondary Source, the transcription may differ from that of the original. While we have tried to note when this is the case, the reader should be aware that forms in the STEDT database from Secondary Sources may differ in transcription from the system given in the Phonological Inventory. The analysis, however, should be the same.

When there is more than one Data Source listed, any Secondary Source will specify which one(s) of the Data Sources its lexical material comes from, as in the example from Gurung below. Three examples follow.

AKHA

Data Source: Hansson 1989 [ILH-PL]
From the main dialect of Akha spoken in Thailand and Burma, based on Hansson's work in Thailand and on the data in [PL-AED] from Burma.

Inventory: Hansson 1982 [ILH-PCAH] (pages 63-94)

APATANI

Data Source: Simon 1972 [IMS-Apatani]
From work in Ziro (1962-3) with one male informant, in Doimukh with four male informants; final revisions in Shillong with three male informants.

Inventory: Sun 1993 [JS-HCST] (pages 38-39), normalized from [IMS-Apatani]
Sun refers to Simon's data as "Apatani S".

Secondary Sources: [JS-HCST], [JS-Tani]

GURUNG

Ghachok

Data Source: Glover 1972 [SIL-Gur]
Hale 1973 [AH-CSDPN]

Hale's word list is from Deu Bahadur Gurung, Warren Glover and Jessie Glover. The data is from Ghachok, six miles Northwest of Pokhara in Kaski District.

Inventory: Glover 1972 [SIL-Gur]
Hale 1973 [AH-CSDPN] (pages 13-14), from [GLO1969] as revised in [GLO1970b], [GLO1970c], [HG1970]

Secondary Sources: [JAM-Ety] (from [AH-CSDPN])

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3. The inventory proper

If the source provides information about the structure of the syllable canon, this is listed first. The phonological system of each language is then generally described either by first listing consonants and then vowels, or by first listing syllable-initial elements (consonants) and then syllable-rhyme elements (vowel plus final consonant). Which analysis is used depends primarily on how the original source presents the information, but compactness and readability of the inventory are also taken into consideration.

The reader may find it helpful when reading the following section to consult one or two of the inventories as an example.

Syllable canon descriptions are provided when available. The following symbols are employed in syllable canon descriptions:

T tone
C consonant
G glide
V vowel

Other symbols may be used where appropriate; their meaning will be explained in each specific case.

A typical syllable canon might look like this:

T
(C)(G)V(C)

Phonetic symbols, which may represent either phonemes or phones, are arranged in charts according to the following principles:

Consonants are laid out in the traditional way, with a separate row for each manner of articulation, and a separate column for each place of articulation. Labials are on the extreme left and glottals on the extreme right. From top to bottom, the order of manners is stop, fricative, nasal, sonorant. If both stops and affricates occur in a given place of articulation, stops are listed first with affricates placed in a separate column to their right. The simplified general schema looks like this (according to IPA representation):

p	t	ts	tɕ	c	k	q	ʔ
pʰ	tʰ	tsʰ	tɕʰ	cʰ	kʰ		
b	d	dz	dʑ	ɟ	g	ɢ	
f		s	ɕ	ç	x	χ	h
v		z	ʑ		ɣ	ʁ	ɦ
m	n			ɲ	ŋ	ɴ	
w	l	r		j			

Unless the source makes explicit comments about the quality of <r>, we have placed it in the charts under the assumption that it has a dental or alveolar articulation. (This often requires establishing a separate column just to accommodate the one symbol.)

Any symbols whose interpretation is not clear are explained in notes following the chart. Common orthographic conventions whose interpretation is made unambiguous by placement in the chart are not noted; for example, the appearance of <ng> in the velar nasal slot or <y> in the palatal glide slot will not warrant an explanation that these symbols represent IPA [ŋ] and [j] respectively.

Initial clusters, if few enough in number, may be placed in the same chart as the simple initials. Otherwise they are placed in a separate chart, where they are generally listed in rows according to the medial element.

In some cases consonants that occur only in syllable-final position are listed in a separate chart. When the source does not make explicit the distribution of the consonants, they are listed simply under the heading "Consonants". If there is a listing of "Initial Consonants" with no heading "Final Consonants" then it can be assumed that there are no syllable-final consonants in that language.

Symbols which occur only in foreign loanwords, or which appear in very few lexical items, are placed in parentheses.

Vowels are laid out in the traditional way, with high front vowels on the upper left and low back vowels on the lower right. If two vowels occupying the same place of articulation differ in roundedness, they are separated by a comma. If they differ in some other quality (e.g. length or nasality), they are separated by spaces. Vowels may be laid

out in more than one chart in order to improve readability. The general schema is shown below, but the placement of vowel symbols may vary depending on what they represent.

ɿ (=z̩)	ʅ (=z̩̆)	ɣ̩
i , y	ɨ , ʉ	ɯ , u
e , ø		ɤ , o
ɛ , œ	ə ɚ	ʊ
æ		ʌ , ɔ
	a	ɑ , ɒ

Special symbols and diacritics are explained in notes following the chart, except for the following common usages: <ṽ> for nasalized vowels, <v̲> or <v̄>[3] for constricted/ laryngealized vowels, and <v:> or <v:> for long vowels. As with consonants, common orthographic conventions (e.g. the use of <ü> for IPA [y]) whose interpretation is made unambiguous by placement in the chart are not noted.

Diphthongs are, whenever possible, placed in charts according to the place of articulation of the primary vowel. Thus <ai> and <au>, where <-i> and <-u> are off-glides, are placed in the slot for <a>. Diphthongs sharing a slot are separated according to the same conventions as monophthongs: with a comma if the primary vowel differs in roundedness, with spaces otherwise. In many cases there is no way to determine which vowel, if any, of a diphthong is primary. In these cases the editors have placed diphthongs in the charts where they fit most conveniently; the reader should take care not to assume that if, for example, <ui> appears in the upper right of the chart, that <u-> is necessarily the main vowel and that <-i> is necessarily an off-glide.

Rhymes are usually listed in tables, with a separate chart for each final consonant. The general schema looks like this:

i u e o a	ei ou ai au

[3]When underscores are used to represent constriction/laryngealization, macrons (◌̄) are considered to be allographs for use with characters with long descenders. We do not note the substitution of a macron for an underscore in the inventories. Of course there are other possible uses of macrons, such as to indicate vowel length.

ip up ep op ap	im um em om am
it ut et ot at	it ut et ot at
ik uk ek ok ak	ik uk ek ok ak

For tonal languages, the notation of *tones* is indicated on dummy syllables <ma> or <mɑ>. This usage is purely schematic; no claim is made as to whether these syllables actually occur under these tones. Tones that only occur with stopped syllables are generally shown with the dummy syllables <mak> or <ma?>; those that occur only with constricted tones are shown with the dummy syllable <ma̱>. If the original source provides prose descriptions of the tones, these are included as well. The general schema looks like this:

ma^{55} high level
ma^{33} mid level
ma^{21} low falling
mak^{54} high stopped

Notes are preceded by a bullet (•), and are usually placed after the relevant chart. Notes pertaining to the inventory as a whole are placed at the end under a separate heading. Information in notes is usually taken directly from the source, but it is distilled by the editors for simplicity and readability. (Some sources provide a tremendous amount of detail in their phonological descriptions.) In general, the following guidelines have been followed in determining what information to include in notes:

Information on phonotactics
Information on allophonic variation
Information on the phonemic/phonetic value of unfamiliar symbols

We generally do not include notes on:

Historical phonology
Morphophonology (except where directly relevant to an understanding of the transcription)
Tone sandhi (except where directly relevant to understanding the transcription)
Finely detailed phonetics

The following orthographic conventions are employed within notes:

1) Symbols enclosed in slashes (/x/) represent phonemes. The enclosed symbol will generally be one of the elements in the inventory's charts. In some cases the author of the source has given no indication as to whether the symbols listed are phonemic; in such cases we still treat them as phonemes when referring to them in the notes.

2) Symbols enclosed in square brackets ([x]) are phones. In our notes, we always use IPA notation within square brackets. For example, the note

   "/kh/ is [x]."

   means that the phoneme written **kh** has the value of IPA **x**, a voiceless velar fricative. However, if the author uses a transcription different from standard IPA notation, we do not "translate" it into IPA. For example, in his *Ao Naga phonetic reader* ([GOW1972]), Gowda employs a *phonetic* transcription. He uses the symbol **c** for a voiceless alveolar affricate, which is an allophonic variant of a voiceless palatal affricate. Thus in the notes we write:

   "/č/ is realized as a voiceless alveolar affricate [c] before [ɯ]."

   We leave it as **c** and not the IPA equivalent **ts**.

3) Symbols enclosed in angle brackets (<x>) represent typographs. In other words, **<x>** is equivalent to **the typographic symbol x**. Some examples of angle brackets:

   "Nasalization is marked by <◌̨> below the vowel."

   "Aspirated stops are marked by <ʰ> in some cases and by <h> in others."

   Here we are referring to the *symbols* **ʰ** and **h**, not to any particular phonetic values.

These three conventions apply as well to tonemes and allotones:

"/^{33}/ is realized [^{31}] in syllables with voiced initials."

It is not always a simple matter to determine which type of bracketing is best suited to a given symbol; the editors have attempted to make clarity a higher priority than strict adherence to principle.

Subgrouping

Determining a precise subgrouping for the many ramified languages of Tibeto-Burman remains a thorny problem. A number of proposals have been made over the years, most

notably by Shafer[4], Benedict[5] and Matisoff[6]. As languages have been more carefully scrutinized, and previously unknown languages have come to light, these proposals have all seen criticism and revision. Some so-called "subgroups", such as *Kamarupan*, remain almost purely geographic catch-all terms. The subgrouping presented here represents our latest thinking, but should nevertheless be considered provisional. An appendix lists the inventoried languages by subgroup, so that the interested reader can compare and contrast the inventories of closely related languages.

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[4] Shafer, Robert. 1957/63. *Bibliography of Sino-Tibetan languages*. Wiesbaden: Otto Harrassowitz. Vol. 1, 1975; Vol. 2, 1963.
Shafer, Robert. 1966-73. *Introduction to Sino-Tibetan*. 5 parts. Wiesbaden: Otto Harrassowitz.

[5] Benedict, Paul K. 1972. *Sino-Tibetan: a conspectus*. (Princeton-Cambridge Series in Chinese Linguistics, #2.) New York: Cambridge University Press.

[6] Matisoff, James A. 1991. "Sino-Tibetan linguistics: present state and future prospects". Annual Review of Anthropology 20:468-504.

ORDER OF INVENTORIES[1]

[1]For alternate names of some of these languages, please see Index.

ACHANG

Lianghe

Data Source: Dai and Cui 1985 [JZ-Achang]
Collected in Guanzhang, Xiangsong Commune, Lianghe County, Yunnan.

Inventory: Dai and Cui 1985 [JZ-Achang] (pages 81-87)

INITIALS

p	pj	t	ts	tʂ	tɕ	k
ph	phj	th	tsh	tʂh	tɕh	kh
f			s	ʂ	ɕ	x
				ʐ	ʑ	
m	mj	n			ȵ	ŋ
m̥	m̥j	n̥			ȵ̥	ŋ̊
w		l				
		l̥				

- The voiceless velar nasal is transcribed <ŋ̥> in [JZ-Achang]. It always appears as <ŋ̊> in the STEDT database.

RHYMES

ɿ i ɛ ɛ̃ a	ɯ , u o ɑ ɑ̃	ui ɛi ɑi uɑi
iu	ou iɑu ɑu	iɛ iɛ̃ uɛ iɑ uɑ uɑ̃
iʔ ɛʔ aʔ	ɯʔ , uʔ oʔ ɑʔ	iɑʔ uɑʔ ɑuʔ
it ɛt	ut uɑt	in uɪn , un iɛn ɛn uɛn ɑn uɑn
ik ɛk	ɯk , uk ok ɑk	iŋ uɪŋ , uŋ ɛŋ iɑŋ ɑŋ uɑŋ

TONES

ma^{55} high level
ma^{31} low falling
ma^{35} high rising

- Stopped syllables appear only in the high level and low falling tones.
- Open syllables in the low falling tone have an accompanying glottal stop coda, which is not transcribed.
- The high rising tone usually occurs in the second syllable of bisyallabic forms, and only rarely in monosyllabic forms.
- Tones are represented by Chao tone letters, not numbers, in [JZ-Achang].

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ACHANG

Longchuan

Data Source: Dai and Cui 1985 [JZ-Achang]
Sun et al. 1991 [ZMYYC] #41

[JZ-Achang]: Collected in Husa-Langguang-Dadui-Lajie-Dahan, Longchuan County, Yunnan.

[ZMYYC]: Collected in Husa-Lajie, Longchuan County, Yunnan.

Inventory: Dai and Cui 1985 [JZ-Achang] (pages 8-23)
Sun et al 1991 [ZMYYC] #41 (pages 308-312)

INITIALS

p	pz̩	t	ts	tɕ	tʂ	k	kz̩
ph	phz̩	th	tsh	tɕh	tʂh	kh	khz̩
(f)			s	ɕ	ʂ	x	xz̩
v				ʑ	z̩		
m	mz̩	n		ȵ		ŋ	
m̥	m̥z̩	n̥		ȵ̥		ŋ̊	
		l					
		l̥					

- /f/ occurs only in Chinese loanwords.
- The voiceless velar nasal is transcribed <ŋ̥> in [JZ-Achang] but <ŋ̊> in [ZMYYC]. It always appears as <ŋ̊> in the STEDT database.

- Some words with voiceless nasal or lateral initials can be freely pronounced with voiced initials.

RHYMES

ɿ					
i		u			ui
e	ə	o	ei		oi
	a	ɔ		ai uai	
iu			i?		u?
	əu		e?	ə?	o?
	iau au ua			a? ua?	ɔ?
		ui?			
					ou?
	ai?			au?	
ip		up	im		um
ep	əp	op	em	əm	om
	iap ap	ɔp		iam am	ɔm
it		ut	in		un
et	ət	ot	en	ən	on
	at uat	ɔt		an uan	ɔn
ik		uk	iŋ		uŋ
ek	ək	ok	eŋ	əŋ	oŋ
	iak ak uak	ɔk		iaŋ aŋ uaŋ	ɔŋ

- The vowel /ɿ/ is transcribed <l> in [JZ-Achang].
- /e/ is pronounced [iE].
- /o/ is pronounced [uo] when followed by a consonant coda.
- When /i/ appears as a coda it is pronounced [ɪ].
- Vowels in syllables with high level tones are slightly tense; in syllables with high rising tones they are slightly lax.
- /uaŋ/ can be pronounced as [ɔŋ] when in close juncture with a following syllable.
- Other rhymes (/ei əu iu iau uai iaŋ uan iak/) appear only in loanwords.

TONES

ma^{55}	high level
ma^{31}	low falling
ma^{35}	high rising
ma^{51}	full falling

- In syllables without a stop coda, the high level tone is pronounced somewhat lower, as [^{44}].
- The full falling tone is the basic tone for only a few words; otherwise it appears in sandhi forms and loanwords.
- Tones are represented by Chao tone letters, not numbers, in [JZ-Achang].

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ACHANG

Luxi

Data Source: Dai and Cui 1985 [JZ-Achang]
Collected in Gaogengtian, Jiangdong Commune, Luxi County, Yunnan.

Inventory: Dai and Cui 1985 [JZ-Achang] (pages 81-87)

INITIALS

p	pj	t	ts	tɕ	k	kj
ph	phj	th	tsh	tɕh	kh	khj
f			s	ɕ	x	xj
			z	ʑ		
m	mj	n		ɳ	ŋ	
w		l				

RHYMES

ɿ i ɯ , u ɛ ə ɔ a	ui əi ɔi ai uai
iu əu iau au	iɛ uɛ ia ua
iʔ uʔ ɛʔ əʔ ɔʔ iaʔ aʔ uaʔ	əuʔ aiʔ auʔ
ɔp iap ap	ɔm iam am
it ut ət at uat	in ɯn un iɛn ɛn ən ɔn an uan
ɯk ək ɔk iak ak	iuŋ ɯŋ uŋ əŋ ɔŋ iaŋ aŋ uaŋ

TONES

ma[55] high level
ma[31] low falling
ma[35] high rising
ma[51] full falling

- Stopped syllables appear only in the high level and low falling tones.
- Tones are represented by Chao tone letters, not numbers, in [JZ-Achang].

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AHI[1]

Data Source: Yüan 1953 [YC-FAPL]
Collected in Lunan County, Yunnan.

Inventory: Yüan 1953 [YC-FAPL] (pages 7-17)

Secondary Sources: [JAM-TSR]

CONSONANTS

Initials

p	t	ts	tʂ	tɕ	k
pʻ	tʻ	tsʻ	tʂʻ	tɕʻ	kʻ
b	d	dz	dʐ	dʑ	g
f		s	ʂ	ɕ	x
v		z	ʐ		ɣ
m	n				ŋ
w	l			j	
	ɬ				

- /s/ is noticeably aspirated before /a/, but not before other vowels.
- Before the vowel /i/, /j/ is pronounced with strong frication as [ʑ].
- Before the vowel or medial /i/, /n/ is backed to [ɳ] or even [ŋ].
- There is some alternation between [l] and [ɬ] in common words.
- Before /o/ and /u/, the velar consonants are pronounced as labiovelars [k^w $kʻ^w$ g^w x^w $ŋ^w$].

VOWELS

Monophthongs

ɿ		
i		u
e ~ ɛ		ɤ , o
	a	
	m̩	

[1]Called *Axi* in [YC-FAPL], [CK-YiQ].

Diphthongs

ie ~ iɛ	ue ~ uɛ	oe ~ oɛ	ɤɛ
ia	ua	oa	

- /ɿ/ is pronounced [ɿ] after the dental affricates and fricatives, and [ʅ] after the retroflex affricates and fricatives. They could be considered vocalized forms of /z/ and /ʐ/, respectively.
- /e/ has allophones [e] and [ɛ]. [e] occurs after /tɕ dʑ j/; [ɛ] after /p p‘ t t‘ d k k‘ g dz tʂ tʂ‘ f ʂ x ɣ m ŋ l/. Both allophones occur after /ts ts‘ tɕ‘ w v s z ɕ n ɬ/, but this seems mainly to be due to Chinese loanwords. Furthermore, [ie] and [iɛ] are in free variation, as are [oe] and [oɛ]. Yüan’s transcription is, in this regard, phonetic rather than phonemic.
- /u/ is actually pronounced more like [ʮ].
- The diphthongs all have stress on the second phone; thus the first phone is more of a glide than a full vowel.
- There is only one phonemic diphthong: /ie/. The other diphthongs probably result historically from combination of more than one syllable (p. 10).
- There is some confusion in the source as to whether the seventh diphthong is [ɤa] (p. 10) or [ɤɛ] (p. 14).

TONES

ma^{55}	high level
ma^{44}	mid level
ma^{22}	low level
ma$^{\underline{44}}$	mid short
ma^{21}	low falling
(ma$^{\underline{21}}$)	(low short)

- The high level tone is actually slightly rising, and could be written <^{45}>.
- The mid level tone is actually [^{33}], but has been written as <^{44}> to more clearly differentiate it from the low level tone.
- The mid short tone is realized with a final glottal stop.
- The low falling tone has two readings; in connected speech it is not clearly falling, realized as [^{11}]; at other times it is pronounced falling and short, but without a final glottal stop. In isolated words both readings are possible.

- Note that in [JAM-VSTB] and [JAM-TSR], tone numbers are not superscripted and follow after a space. Short (i.e. checked) tones are indicated by the letter <s>. For example, [JAM-TSR] <ma 44s> is equivalent to [YC-FAPL] <ma^{44}>.
- Tones are represented by Chao tone letters, not numbers, in [YC-FAPL].

NOTES

- Yüan has also developed a system for Ahi using only Roman characters, including Roman letter symbols to indicate tone. This system is described on pages 17-19.

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AHI

Data Source: Luo 1990 [LMZ-AhiQ]
STEDT Questionnaire.

Inventory: Luo 1990 [LMZ-AhiQ]

CONSONANTS

p	t	ts	ʈ	tʂ	tɕ	k	
p‘	t‘	ts‘	ʈ‘	tʂ‘	tɕ‘	k‘	
b	d	dz		dʑ	dʑ	g	
		s		ʂ	ɕ	x	h
v		z		ʐ	ʑ	ɣ	
m	n					ŋ	
	l						
	ɬ						

VOWELS

Monophthongs

Unconstricted		*Constricted*	
i	ɯ , u	i̱	ɯ̱ , u̱
e	o	e̱	o̱
ɛ	ɑ	ɛ̱	ɑ̱

Diphthongs

iu

TONES

ma^{55}	high level
ma^{33}	mid level
ma^{22}	mid low
ma^{21}	low falling

NOTES

- A ligature between syllables, transcribed as a breve mark <◌̆> in the STEDT database, indicates close juncture between two syllables, e.g. <no^{33} ko^{33} ◌̆ɛ^{33}> ‘back’.

AHI

Data Source: Chen 1986 [CK-YiQ]
STEDT Questionnaire. Spoken in Mile, Luxi, Yiliang, and Lunan Counties, Yunnan.

Inventory: Chen 1986 [CK-YiQ]

CONSONANTS

p	t	ts	ʈ	tʂ	tɕ	k
ph	th	tsh	ʈh	tʂh	tɕh	kh
b	d	dz	ɖ	dʐ	dʑ	g
f		s		ʂ	ɕ	x
v		z		ʐ	ʑ	ɣ
m	n					ŋ
	l					
	ɬ					

VOWELS

Unconstricted		*Constricted*	
ɿ		ɪ̄	
i	ɯ , u	i̱	ɯ̱ , u̱
e	o	e̱	o̱
ɛ		ɛ̱	
a		a̱	

- /ɿ ɪ̄/ have allophones [ɻ ɻ̄].

TONES

ma^{55} ma^{33} ma^{22} ma^{21}

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AKHA

Data Source: Hansson 1989 [ILH-PL]

From the main dialect of Akha spoken in Thailand and Burma, based on Hansson's work in Thailand and on the data in [PL-AED] from Burma.

Inventory: Hansson 1982 [ILH-PCAH] (pages 63-94)

INITIALS

p	pj	t	ts	tj	k	
ph	pjh	th	tsh	tjh	kh	
b	bj	d	dz	dj	g	
		s		sj	x	h
		sh		sjh	xh	
		z			ɣ	
m	mj	n			ŋ	
		l		j		

- Initial voiceless consonants are always aspirated in non-laryngealized syllables and unaspirated in laryngealized ones (p. 76).

RHYMES

Non-Laryngealized			*Laryngealized*		
i , ü		y , u	iq , üq		yq , uq
e , ö		ə , o	eq , öq		əq , oq
ɛ	a	ɔ	ɛq	aq	ɔq
m		aŋ	mq		

- /y ə/ are back unrounded vowels. Laryngealization is marked by <q> following the vowel.

TONES

	Non-laryngealized	*Laryngealized*
high	má	
mid	ma	maq
low	mà	màq

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AKHA

Data Source: Lewis 1989 [PL-AETD]
The 'standard' dialect, Jeu˘ g'oe˘, spoken in Burma and Thailand.

Inventory: Lewis 1989 [PL-AETD] (pages 8-12)

Secondary Sources: [JAM-Ety], [JAM-TSR], [JAM-GSTC]

CONSONANTS

p	py	t	ts	c	k	
b	by	d	dz	j	g	
		s		sh	k'	h
(v)		z		y	g'	
m	my	n	ny		ng	
		l				

- Zero-initial is realized as [ʔ]. "When a vowel clitic is in close juncture with the preceding syllable, however, a hyphen is used [orthographically] to show that there is no glottal stop preceding that vowel" (p. 8).
- /c/ is a voiceless alveopalatal affricate.
- /j/ is a voiced alveopalatal affricate. Its quality is determined by the quality of the following vowel: "It has no palatization when followed by an oral vowel .... It is palatalized when followed by a laryngealized vowel" (p. 9).
- /sh/ is a voiceless alveopalatal fricative.
- /k' g'/ are fricatives [x ɣ].
- /y/ is a voiced alveopalatal fricative "with the apex of the tongue pointing slightly downward" (p. 8).
- The quality of seven of the voiceless consonants /p py t ts c k k'/ "is determined by the quality of the following vowel. As a general rule, the consonant is aspirated when followed by an oral vowel, and unaspirated when followed by a laryngealized (or glottalized) vowel" (p. 9).
- /h/ "occurs only with oral vowels" (p. 9).
- [v] occurs in a small number of Shan borrowings; most Akha use [b] in these words (p. 9).

VOWELS

Monophthongs

i , oi	ui , u
e , oe	eu , o
eh	a , aw
m	ah

Diphthongs

(ao) (ai) (am)

- /ah/ is nasalized.
- Most vowels can occur as either laryngealized or oral (non-laryngealized), but /oi/ and /ah/ occur only as non-laryngealized.
- "There are three diphthongs that occur in some words borrowed from Shan. Although these are usually given an oral quality when Akha borrow the words, sometimes when the Shan word ends with an unreleased stop, some Akha give the vowel a laryngealized quality. Akha treat these diphthongs in the same way they treat vowel enclitics (CVV), with the exception that in the diphthongs, the tone is the same on both segments" (p. 11).

TONES

	Oral	*Laryngealized*
high	ma˅	
mid	ma	ma˄
low	ma˅	ma˄

- "In utterance final position ... high tones may drop slightly, and low tones may rise slightly. Whenever an oral vowel on any tone is in utterance final position there may be a glottal stop which is insignificant to the meaning." In addition, "[c]ertain series of tones in close juncture tend to change the tonal pattern. Three contiguous syllables on the low tone, for example, are spoken as if the middle syllable is on the mid tone .... When there are three contiguous syllables which are all normally high tones, the middle syllable tends to drop to a point somewhere between the high and mid tones" (p. 12).
- "When there is reduplication with four syllables in a row, a different type of tonal change sometimes takes place." As these are lexical ("not always predictable," p. 12), they are always indicated.

ANGAMI

Khonoma

Data Source: Marrison 1967 [GEM-CNL]

Angami is spoken in the Kohima District in the southern part of Nagaland. The data represents the Khonoma form of standard Angami as spoken by the Tongime. Marrison takes his lexical data from [MCC1887].

Inventory: Marrison 1967 [GEM-CNL] (pages 345-347)

SYLLABLE CANON

(C)(C)V(V/C)

CONSONANTS

Initials

p	pr	t		ts/ch	k	kw	kr
ph		th			kh		
b		d		dz/j	g	gw	
f		s		sh		h	
v		z		zh			
m		n			ng		
mh		nh					
w		l	r	y			
		lh	rh				

Finals

-r

- Marrison indicates that <ch> and <ts> correspond to /c/, and <dz> and <j> correspond to /j/. It is not clear whether this represents allophonic or merely orthographic variation.
- <sh zh> correspond to /ʃ ʒ/ respectively.
- /-r/ is rare.

VOWELS

Monophthongs

i		u
e	ü ~ (ë)	o
	a	

Diphthongs

(ie)

- Marrison indicates that <ü> and <ë> correpond to /ə/.
- The diphthong /ie/ appears rarely in Angami Khonoma.

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ANGAMI

Khonoma

Data Source: Blankenship et al. 1994 [BLBC-Khonom]

From the speech of two female and four male adult native speakers, collected in February 1992 at the Linguistics Department of Deccan College, Pune, India. All of the speakers were students at institutions in the neighborhood of Pune.

Inventory: Blankenship et al 1994 [BLBC-Khonom]

CONSONANTS

Initials

p	t	ts		tʃ	k	k^w	
p^h	t^h				k^h	$k^w_\circ$	
b	d				g	g^w	
		s		ʃ			h
v		z		ʒ			
m	n			ɲ	ŋ		
$m̥^h$	$n̥^h$			$ɲ̥^h$			
w	l		ɾ	j			
$w̥$	$l̥^h$		ɾ̥	$j̥$			

Medials

-ɽ-

- Retroflex /ɽ/ is laminal before high vowels but sublaminal before other vowels.
- Khonoma voiceless nasals "remain voiceless throughout the nasal articulation and even beyond the release; voicing of the following vowel begins well after the articulatory stricture has been released"

VOWELS

i		u
e	ə	o
	a	

- Although diphthongs do occur in Khonoma, Blankenship et al. write that they are very infrequent, and they are not discussed.

TONES

ma^{1} ma^{2} ma^{3} ma^{4}

- Khonoma Angami has four tones, the highest indicated by <^{1}> and the lowest by <^{4}>.

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ANGAMI

Kohima

Data Source: Ravindran 1974 [RAV1974]
Fieldwork done in the Kohima district of Nagaland.

Inventory: Ravindran 1974 [RAV1974] (vowel chart: page 13; consonant chart: pages 21-22; phonemic charts: pages 55-57)
The transcription of the lexical data is phonetic.

CONSONANTS

p	pf	t	ts	c	k	
ph		th		ch	kh	
b	bv	d	dz	j	g	
	f		s	š		h
	v		z	ž		
m	ɱ	n		ñ	ŋ	
mh		nh		ñh		
w		l	R		y	
wh		lh	Rh		yh	

- [c ch] are palatal affricates.
- [h] is a postvelar fricative.
- [R Rh] are post alveolar trills.
- [mh nh ñh] are voiced aspirated nasals.
- [lh Rh] are voiced aspirates.

VOWELS

Monophthongs			*Diphthongs*	
i		u	e̯i	o̯u
e	ə	o	i̯e	u̯o
	a			

- [ə] is not listed in the vowel chart on page 13, but is described on page 15.

TONES

mā	mid
má	high
mà	low
mă	mid rising
mâ	low falling

NOTES

- Ravindran claims that the consonants, vowels, and tones listed above are all distinctive.

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ANGAMI

Kohima

Data Source: Marrison 1967 [GEM-CNL]

Angami is spoken in the Kohima District in the southern part of Nagaland. The data represents the Kohima form of standard Angami as spoken by the Tongime.

Inventory: Marrison 1967 [GEM-CNL] (pages 345-347)

SYLLABLE CANON

(C)(C)V(V)

CONSONANTS

p	pf	pr	t		ts/ch	k	kr	
ph		phr	th		chh	kh	khr	
b	bv		d		dz	g		
	f		sh					h
	v		zh					
m	mv		ny		ñ	ng		
mh			nyh		ñh			
w			l	r	y			
wh			lh	rh				

- Marrison indicates that <ch> and <c> correspond to /c/. It is not clear whether this represents allophonic or merely orthographic variation.
- <chh dz sh zh> correspond to /ch j s z/ respectively.
- Marrison indicates that <ny nyh> correspond to /n nh/ respectively. This is almost certainly a typographical error for /ñ ñh/, which appear in his phoneme chart.
- Though not discussed, <mp mb nd nn> appear as initials in the data.

VOWELS

Monophthongs			*Diphthongs*	
i		u	ei	ou
e	ü	o	ie	uo
	a			

- No phonemic equivalent is provided for <ü>, but it probably corresponds to /ə/, which Marrison lists in his phoneme chart.

AO

Chungli

Data Source: Gowda 1972 [GOW1972]

Spoken in Nagaland. The Chungli dialect, which is accepted as standard, is spoken in the villages of Melongimsen and Longpa.

Inventory: Gowda 1972 [GOW1972] (vowel chart: page 13; consonant chart: page 20; phonemic charts: page 50)

The transcription of the lexical data is phonetic, not phonemic.

CONSONANTS

Initials

Phonetic chart

p	t	c	č	k	ʔ
ph	th			kh	
b	d		ǰ	g	
	s		š		
	z				
m	n			ŋ	
	l	lʰ			
w			y		

Phonemic chart

p	t		č	k	ʔ
	s				
	z				
m	n			ŋ	
	l	lʰ			
w			y		

Finals

-p	-t		-k	-ʔ
-m	-n		-ŋ	
-w		-lʰ -y		

- /p t k/ have aspirated allophones [ph th kh], which occur in free variation with [p t k].
- /p t k č/ have voiced allophones [b d g ǰ]. They are in free variation with [p t k č] only intervocalically or after voiced sonorants.
- /č/ is realized as a voiceless alveolar affricate [c] before [ɯ].
- /s/ is realized as [š] before [i].
- [lʰ] is a "voiced retroflex lateral fricative" (page 33).

VOWELS

Phonetic chart

i		ɯ , u
e	ẹ	o
		ʌ , ɔ
		a

Phonemic chart

i		ɯ , u
e	a	o

- /e/ is realized as a higher-mid central unrounded retroflex vowel [ẹ] in closed syllables. In initial position, /e/ is preceded by [y].
- /a/ is realized as [ʌ] in syllables with the falling tone.
- /o/ is realized as [ɔ] when preceded or followed by velars.
- /ɯ/ does not occur initially.

TONES

ma	level
má	rising
mà	falling

❖ ❖ ❖ ❖ ❖

AO

Chungli

Data Source: Marrison 1967 [GEM-CNL]

Ao is spoken in the Mokokchung District in the cental western part of Nagaland. The data represents the dominant dialect of Ao and is spoken in the northern and eastern parts of the Ao country. Marrison takes his lexical data from [GEM-Ao].

Inventory: Marrison 1967 [GEM-CNL] (page 348)

Note: Transcription normalized in the STEDT database.

CONSONANTS

Initials

p	t		ts/ch	k
b	d		tz/j	g
	s		sh	
	z			
m	n			ng
w	l	r	y	

Finals

-p	-t	-k
-m	-n	-ng
	-r	

- Marrison indicates that <ch> and <ts> correspond to /c/. It is not clear whether this represents allophonic or merely orthographic variation.
- <tz sh> correspond to /j ʃ/ respectively.
- In the STEDT database, <tz> has been normalized to <j> only occasionally; not all instances have been normalized.

VOWELS

i		u
e	ü	o
	a	

- Marrison indicates that <ü> corresponds to /ə/.

❖ ❖ ❖ ❖ ❖

AO

Mongsen

Data Source: Marrison 1967 [GEM-CNL]

Ao is spoken in the Mokokchung District in the central western part of Nagaland. The data represents one of the main dialects of Ao. Marrison takes his lexical data from [JP-Mong].

Inventory: Marrison 1967 [GEM-CNL] (page 348)

CONSONANTS

Initials

p	t		ts/ch	k
ph	th			kh
b	d		j	g
	s		sh	
	z			
m	n			ng
w	l	r	y	

Finals

-p	-t	-k
-m	-n	-ng
	-r	

- Marrison indicates that <ch> and <ts> correspond to /c/. It is not clear whether this represents allophonic or merely orthographic variation.
- <sh> corresponds to /ʃ/.
- [ph th kh] are allophones of /p t k/.

VOWELS

i		u
e	ü	o
	a	

- No phonemic equivalent is provided for <ü>, but it probably corresponds to /ə/, which Marrison lists in his phoneme chart.

❖

APATANI

Data Source: Simon 1972 [IMS-Apatani]
From work in Ziro (1962-3) with one male informant, in Doimukh with four male informants; final revisions in Shillong with three male informants.

Inventory: Sun 1993 [JS-HCST] (pages 38-39), normalized from [IMS-Apatani]
Sun refers to Simon's data as "Apatani S".

Secondary Sources: [JS-HCST], [JS-Tani]

CONSONANTS

Simple Initials

p	t		č	k	
b	d		ǰ	g	
	s				h
m	n		ñ	ŋ	
	l	r	j		

Initial Clusters

pr	kr				
prj	brj	mrj	lj	krj	grj

Finals

-r	-ʔ

- /č ǰ ñ j/ are transcribed <č j ñ y> in [IMS-Apatani].
- The clusters /prj krj/ are realized as [pʰrj kʰrj].
- [x] occurs rarely and is probably not phonemic.
- [ɣ] occurs in only one word: <ja-ɣə> 'axe'; it is probably not phonemic.
- [w] occurs only between /-o-/ or /-u-/ and a following /-a/; it is not phonemic.

VOWELS

Monophthongs			*Diphthongs*
i ĩ	ɯ ɯ̃	u ũ	
e ẽ	ə	o õ	
	a ã		ai au

- "Lengthening usually takes place before nasals." Vowel length, which is probably phonemic, is not marked.
- /ə ɯ/ are transcribed <é í> in [IMS-Apatani]. [IMS-Apatani] also has <ú>, which seems to be a rounded allophone of <í> = /ɯ/ appearing only after labials. Its phonetic value is thus probably [ʉ].
- When a nasalized vowel is in close juncture with a following consonant, a homorganic nasal stop may be inserted. For example, when /ajĩ/ 'friend' is followed by the adverbial particle /-pa/, the result is [ajim-pa] 'friendly'.

TONES

- Simon notes that "tone is not entirely absent" from Apatani; however, it is only contrastive in a few cases. Although Simon makes passing reference to a "level" and "level fall" tone, he does not elaborate, and tones are not marked.

❖ ❖ ❖ ❖ ❖

APATANI

Data Source: Abraham 1985 [ABR1985]

Inventory: Sun 1993 [JS-HCST] (pages 491-492), normalized from [ABR1985]
Sun refers to Abraham's data as "Apatani A".

Secondary Sources: [JS-Tani]

CONSONANTS

Simple Initials

p	t		č	k	
b	d		ǰ	g	
	s			x	h
m	n			ŋ	
	l	r	j		

Initial Clusters

pj bj mj dj lj gj

Finals

(-s)

(-m) -ŋ

(-l) -r

- /č ǰ j ŋ/ are transcribed <c j y ṅ> in the original source [ABR1985].
- /b/ is realized as [β] intervocalically.
- Word-finally, /-ŋ/ is realized as nasalization on the preceding vowel.
- Three additional codas /-m -s -l/ are said to occur, but they seem to be found only in loanwords.

VOWELS

i	ɯ	u
e		o
	a	

- /ɯ/ is transcribed <ɨ> in [ABR1985].
- Vowel length is not recorded.
- Several 'vowel clusters' are listed in [ABR1985], pp. 16-17, most of which are probably not true diphthongs.

TONES

má	rising
mà	falling
ma	level

❖ ❖ ❖ ❖ ❖

APATANI

Data Source: Weidert 1987 [AW-TBT]

From the North Assam division of Tibeto-Burman languages, also called the Abor-Miri-Dafla group, or Mirish. The informant was Mr. Tama Tage from Modantage village near Ziro, headquarters of Subansiri distict of Arunachal Pradesh in northeastern India (p. 493, n. 10).

Inventory: Weidert 1987 [AW-TBT] (pages 216-219)

Note: Transcription normalized in STEDT database.

CONSONANTS

Simple Initials

p	t	ts	tš	k	
b	d	dz	dž	g	
m	n		ñ	ŋ	
		s		x	h
(w)	l	r	y		

Initial Clusters

py	gy	ly		
pry	bry	mry	gry	xry

Finals

-r	-ŋ	-ʔ

- The bilabial continuant [w] occurrs in only one word, so may not be phonemic.
- [x] sometimes can vary freely with [xry].
- "/ŋ/ can be realized as [m] or [n] if followed by a homorganic stop or nasal in the following syllable" (p. 217).
- The glottal stop occurs only in non-final syllables, and drops word-finally (p. 218).
- [ŋ] can form a tone-bearing syllable.

VOWELS

i	iː	ɯ	ɯː	u	uː
e	eː			o	oː
		a	aː		

- "Length is contrastive only in nonfinal position of open syllables" (p. 216).
- /e o/ are realized as [ɛ ɔ].
- <ː> indicating vowel length is transcribed <·> in [AW-TBT].

TONES

ma[1]	low
ma[2]	high

❖

ATONG

Data Source: Burling 1959 [RB-PB]

Collected from a number of speakers in the Garo Hills (Baghmara area, Assam) in the mid 1950s.

Inventory: Burling 1959 [RB-PB]

Secondary Sources: [JAM-Ety]

CONSONANTS

Initials

p	t		k	
b	d		g	
	s	c		h
m	n			
w	r			

Finals

-p	-t	-k	-ʔ
-m	-n	-ŋ	
-ʔm	-ʔn	-ʔŋ	
	-r		
	-ʔr		

- Voicing and aspiration: "/p t k/ are unvoiced and aspirated initially. /b d g/ are only weakly voiced; they are more consistently distinguished from /p t k/ by their lack of aspiration" (p. 437).
- "/s c/ are pronounced between the positions of /s/ and /š/ of English" (p. 437).
- "/r/ is a flap" (p. 437).

VOWELS

Monophthongs			*Diphthongs*
i		u	
e	ə	o	əi əu
	a		ai au

❖

BAI

Bijiang

Data Source: Sun et al. 1991 [ZMYYC] #37

Northern Dialect. Collected in District Four, Bijiang County, Nujiang Prefecture, Yunnan.

Inventory: Sun et al. 1991 [ZMYYC] #37 (pages 291-293)

CONSONANTS

Initials

p	t	ts	ʈ	tʂ	tɕ	k	q
ph	th	tsh	ʈh	tʂh	tɕh	kh	qh
b	d	dz	ɖ	dʐ	dʑ	g	ɢ
f		s		ʂ	ɕ	x	
v		z		ʐ		ɣ	
m	n				ɳ	ŋ	
	l				j		

- Rhymes following the consonants /ʈ ʈh ɖ/ all have an epenthetic medial /-i-/.
- The initials /tʂ tʂh dʐ ʂ ʐ/ take only the retroflex vowel /eˠ/.

VOWELS

Monophthongs			*Diphthongs*		
		u ũ			
i ĩ		ɯ ɯ̃	ui uĩ		
e ẽ	eˠ ẽˠ	o õ		ueˠ uẽˠ	
		ɑ ɑ̃			uɑ uɑ̃

- /u ũ/ are realized as [v ṽ].

TONES

Unconstricted		*Constricted*	
mɑ^{55}	high level	mɑ^{44}	mid-high level
mɑ^{33}	mid level	mɑ^{42}	mid falling
mɑ^{35}	high rising	mɑ^{21}	low falling

- Constriction of syllables is not explicitly marked in the transcription.

❖ ❖ ❖ ❖ ❖

BAI

Bijiang

Data Source: Xu and Zhao 1984 [JZ-Bai]
Northern Dialect. Collected in Bijiang County, Yunnan.

Inventory: Xu and Zhao 1984 [JZ-Bai] (pages 4-12 and pages 117-123)

CONSONANTS

Initials

p	t	ts	ʈ	tʂ	tɕ	k	q
ph	th	tsh	ʈh	tʂh	tɕh	kh	qh
b	d	dz	ɖ	dʐ	dʑ	g	ɢ
f		s		ʂ	ɕ	x	
v				ʐ	j	ɣ	
m	n				ɳ	ŋ	
	l						

VOWELS

Monophthongs

Oral				*Nasal*		
		ɣ̩				ɣ̩̃
i		ɯ , u		ĩ		ɯ̃
e	eɹ	o		ẽ	ẽɹ	õ
	ɑ				ɑ̃	

Diphthongs

Oral			*Nasal*	
ui			uĩ	
ie	ieɹ ueɹ	io	iẽ	
	uɑ			uɑ̃

TONES

ma^{33} ma^{42} ma^{55} ma^{35} ma^{44} ma^{21}

- In [JZ-Bai], tones are represented by Chao tone letters, not numbers. The laryngealized tones are indicated by writing the horizontal stroke to the right of the vertical reference line.

❖ ❖ ❖ ❖ ❖

BAI

Dali

Data Source: Dell 1981 [FD-Bai]
Collected from one consultant from a locality near Dali.

Inventory: Dell 1981 [FD-Bai] (pages 21-35)

SYLLABLE CANON

(C)V(V)

CONSONANTS

Initials

p	t	ts	k
p'	t'	ts'	k'
f		s	x
(v)		z	
m	n		ng
	l		

- <v> is attested only once in the vocabulary, in <va 1>, 'ten thousand', a borrowing from Chinese (p. 24).
- The zero-initial is realized as [ɣ] before the vowel /w/.

VOWELS

Monophthongs

		v
i , y	w	u
e	ö	o
ɛ	œ	ɔ
	a	

Diphthongs

	iw	
ue	uö	io uo
iɛ uɛ	iœ uœ	iɔ
	ia ua	

- /w/ is realized as [ɯ] after velars and the zero-initial (which is in turn realized as [ɣ]); and as [ɿ] after sibilants.

TONES

ma 1 [ma^{44}]
ma 2 [ma^{33}]
ma 3 [ma^{22}]
ma 4 [ma^{21}]
ma 5 [ma^{41}]
ma 6 [ma^{23}]
ma 7 [ma^{212}]
ma 8 [ma^{ʔ55}]

- Dell distinguishes between pre-pausal (PP) and non-pre-pausal (NPP) syllables (p. 29).
- In all syllables with T1, T2, and T3, the end of the vowel is "sharp, without, however, giving the impression of a glottal stop" (p. 31).
- In non-pre-pausal syllables, the third and fourth tones (T3 and T4) are merged into T3; in pre-pausal syllables, the distinction is maintained except in some words in which the two are in free variation (p. 30).
- "In NPP syllables, T5 loses much of its slope and of its amplitude and becomes a slightly descending tone" (p. 32).
- "[U]nder T6 [the vowel] gives the impression of fading gradually" (p. 32).
- In isolation, T7 is "long, low, and curved ([212] or [211]). In all other contexts ..., T7 is realized as a short, low tone which gives the auditory impression similar to that of the Pekingese 'neutral tone' when it follows a syllable in fourth tone" (p. 32).
- "In pre-pausal syllables, T8 is very high (in the same context, perceptibly higher than T1), very short, and interrupted by a rather sharp glottal stop" and is either [^{55}] or [^{54}]. "In non-pre-pausal syllables, T8 loses its glottal stop and its shortness, and is realized as a steep descending tone starting very high (value 53)" (p. 32).

❖ ❖ ❖ ❖ ❖

BAI

Dali

Data Source: Xu and Zhao 1984 [JZ-Bai]
Sun et al. 1991 [ZMYYC] #35

[JZ-Bai]: Southern Dialect. Collected in Dali County, Yunnan
[ZMYYC]: Southern Dialect. Collected in Xizhou Hamlet, Dali County, Dali Prefecture, Yunnan.

Inventory: Xu and Zhao 1984 [JZ-Bai] (pages 4-12 and pages 117-123)
Sun et al. 1991 [ZMYYC] #35 (pages 288-290)

CONSONANTS

Initials

p	t	ts	tɕ	k
ph	th	tsh	tɕh	kh
f		s	ɕ	x
v		z	j	ɣ
m	n		ɳ	ŋ
	l			

- Initials /p t k ts tɕ/ are pronounced voiced in syllables with tones /^{33}/ and /^{31}/, according to [ZMYYC].

VOWELS

Monophthongs			*Diphthongs*			
		ɣ				
i		ɯ , u	ui			iɯ
e	eɪ	o	ie ue	ieɪ ueɪ	io uo	ou
	ɑ			iɑ uɑ		

- An additional diphthong /uɯ/ is listed in [ZMYYC].
- /i/ is realized as [ɿ] after the initials /ts tsh s/.

TONES

mɑ^{33} mɑ^{42} mɑ^{31} mɑ^{55} mɑ^{35} mɑ^{44} mɑ^{21} mɑ^{32}

- In [JZ-Bai], tones are represented by Chao tone letters, not numbers. The laryngealized tones are indicated by placing the tone contour line to the right of the vertical reference line.
- The tone /^{32}/ is written as <^{53}> in [ZMYYC].

BAI

Jianchuan

Data Source: Dai 1989 [DQ-Bai]
Data collected by Li Shaoni in Jianchuan County, Ma Deng Village.

Inventory: Dai 1989 [DQ-Bai]

CONSONANTS

Initials

p	t	ts	tɕ	k
p'	t'	ts'	tɕ'	k'
f		s	ɕ	x
v		z	ʑ	ɣ
m	n		ɲ	ŋ
	l			

- <' > indicates aspiration.

VOWELS

Monophthongs

Oral, Unconstricted			*Oral, Constricted*		
ɿ			ɿ̄		
i , y		u	i̱ , y̱		u̱
e	ə	o	e̱	ə̱	o̱
a	ʌ		a̱	ʌ̱	

Nasal, Unconstricted			*Nasal, Constricted*		
ĩ			ɪ̃		
ẽ	ə̃	õ	ɛ̃	ɜ̃	ɔ̃
ã	ɐ̃		ɑ̃	ɐ̃	

Diphthongs

Unconstricted					*Constricted*				
yẽ	iə	iə̃	io	iõ	ɔu	yɛ̃	iɜ	iɜ̃	iɔ	iɔ̃
ia	iã	ya	ai	iɐ	iɐ̃	iɑ	iɑ̃	yɑ	iɐ	iɐ̃
ue	uẽ					uɛ	uɛ̃			
ua	uã			uɐ	uɐ̃	uɑ	uɑ̃		uɐ	uɐ̃

Triphthongs

uai

TONES

ma^{55} ma^{42} ma^{35} ma^{33} ma^{21}

❖ ❖ ❖ ❖ ❖

BAI

Jianchuan

Data Source: Xu and Zhao 1984 [JZ-Bai]
Sun et al. 1991 [ZMYYC] #36

[JZ-Bai]: Central Dialect. Collected in Jianchuan County, Yunnan.
[ZMYYC]: Central Dialect. Collected in Chengjinhua Hamlet, Jianchuan County, Dali Prefecture, Yunnan.

Inventory: Xu and Zhao 1984 [JZ-Bai] (pages 4-12 and pages 117-123)
Sun et al. 1991 [ZMYYC] #36 (pages 286-288)

CONSONANTS

Initials

p	t	ts	tɕ	k
ph	th	tsh	tɕh	kh
f		s	ɕ	x
v			j	ɣ
m	n			ŋ
	l			

VOWELS

Monophthongs

Oral			*Nasal*		
	ɣ				ɣ̃
i	ɯ , u		ĩ		ɯ̃
e	o		ẽ		õ
ɛ			ɛ̃		
	ɑ			ɑ̃	

Diphthongs

Oral			*Nasal*		
ui	iɯ		uĩ		iɯ̃
	io				iõ
iɛ uɛ	(ɑo)		iɛ̃ uɛ̃		
	iɑ uɑ			iɑ̃ uɑ̃	

TONES

ma^{33} ma^{42} ma^{31} ma^{55} ma^{35} ma^{44} ma^{21} ma^{55}

NOTES

- The /ɑo/ rhyme is found only in Chinese loanwords.
- /i/ is realized as [ɿ] after the initials /ts tsh s/.
- /ɛ/ is realized as [ɑ] in the following laryngealized tones: /^{44} ^{42} ^{21}/.
- The sequence /ŋɣ/ is pronounced [m̩] (syllabic labiodental nasal).

- The velar fricative /x/ is retracted to [h] before nasalized vowels.
- /o/ is lowered to [ɔ] in tone /$^{21}\underline{\ }$/ syllables.
- In [JZ-Bai], tones are represented by Chao tone letters, not numbers. The laryngealized tones by writing the horizontal stroke to the right of the vertical reference line.

❖ ❖ ❖ ❖ ❖

BAI

Jianchuan

Data Source: Zhao 1990 [ZYS-Bai]

Inventory: Zhao 1990 [ZYS-Bai]

Note: Transcription normalized in STEDT database.

CONSONANTS

Initials

p	t	ts	tɕ	k
ph	th	tsh	tɕh	kh
f		s	ɕ	x
v		(z)	j	ɣ
m	n			ŋ
	l			

VOWELS

Monophthongs

Oral			*Nasal*	
ɿ		ʯ		ɰ̃
i		ɯ , u	ĩ	ɯ̃
e		o	ẽ	õ
		ɔ		
æ	a		æ̃	ã

Diphthongs

Oral		*Nasal*	
ui	iɯ	uĩ	iũɯ
	io		iõ
	ao iao		
iæ uæ	ia ua	iæ̃ uæ̃	iã uã

- Constriction of vowels is contrastive. It is marked by <_> under the vowel.

TONES

ma^{55} ma^{33} ma^{42} ma^{31} ma^{21}

BAIMA

Luotongba

Data Source: Sun Hongkai 1991 [SHK-BaimaQ]

STEDT Questionnaire. Collected in Luotongba village, Baima Township, Pingwu County, Gansu Province. Baima is spoken by approximately 11,000 people in northern Sichuan and some parts of Gansu Province.

Inventory: Extracted from Sun Hongkai 1991 [SHK-BaimaQ]

CONSONANTS

Simple Initials

p	t	ts	tʂ	tʃ	tɕ	k	
ph	th	tsh	tʂh	tʃh	tɕh	kh	
b	d	dz	dʐ	dʒ	dʑ	g	
		s		ʃ	ɕ		
		sh		ʃh	ɕh		
		z		ʒ	ʑ		ɦ
m	n				ɳ	ŋ	
	l	r					

Initial Clusters

nb nd ndz ndʑ ndʐ ndʒ ng

VOWELS

Monophthongs			*Diphthongs*	
ɿ				
i , y		u		
e , ø	ə	o õ	iø , ue	io
ɛ ɛ̃	ɐ	ɔ	iɛ yɛ uɛ	iɔ uɔ
	a	ɑ ɑ̃		iɑ uɑ uɑ̃

TONES

ma^{53} ma^{35} ma^{13} ma^{341}

❖

BANTAWA

Rabi

Data Source: Rai 1985 [NKR-Bant]

The author is a native speaker of Bantawa (p. 2). The dissertation is based on the Rabi dialect of the Panchthar district in the Mechi zone (p. 15). Collected in 1982 and rechecked in 1983.

Inventory: Rai 1985 [NKR-Bant] (pages 19-55)

SYLLABLE CANON

(C)V(C)

CONSONANTS

Initials

p	t	T	c	k	ʔ
ph	th	Th	ch	kh	
b	d	D	j	g	
bh	dh	Dh	Th	gh	
	s				
					h
m	n			N	
w	l	r	y		

Finals

-p			-T	-k
-m	-n			-N

- /N/ represents a velar nasal.
- /t th d dh/ are dental stops.
- /T Th D Dh n s l r/ are alveolar; /D/ has two allophones: a voiced unaspirated retroflex stop (intervocalically) and a voiced unaspirated apicoalveolar stop (elsewhere).
- /c ch j jh/ are palatal affricates.
- /h/ is a voiced glottal fricative.
- /r/ is an alveolar trill.

VOWELS

i		U , u
e	(A)	o
	a	

- /U/ is a high back unrounded vowel.
- /A/ is a mid central unrounded vowel which never appears in final position. It occurs mostly in loanwords, and has probably only recently acquired phonemic status.
- /i e o U u/ have two allophones each: they are long finally and "relatively short" elsewhere (pp. 42-44).
- The author claims that there are no diphthongs and that vowel sequences always occur across a syllable or morpheme boundary and are made up of two pure vowels with distinct syllabic peaks (p. 52).

NOTES

- Miminal pairs with medial and final obstruents "are very rare" (p. 29).
- Initial consonant clusters appear only in onomatopoetic words; final clusters do not occur. "Lateral and frictionless continuant phonemes are the only possible second members in this type of cluster": /pl pw Tw cw phw Thw chw khw bl my Ty ly Dw gw bhw Dhw sw hw rw cy ky/ (p. 45).
- "All consonants except the glottal stop /ʔ/ can occur word-initially. All consonants occur word medially. All nasals and voiceless unapirated stops except /t/ and /ʔ/ can occur finally in native words" (p. 35), but /ʔ/ can appear syllable-finally when followed by another consonant.
- "In borrowed words, only the velar nasal /N/ can occur word-finally but numerals which are borrowed from Nepali are exceptions to this rule" (p. 35).
- "Voiceless unaspirated stop consonants are unreleased in the final position" (p. 35).
- "The frequency of the dental stops is relatively less in native words but they are found in non-native words" (p. 35).
- "The occurrence of two or more consonants together within a syllable are considered as consonant clusters but across the syllable boundary they are treated as sequences of consonants. Consonant clusters are very few in Bantawa. There is no initial consonant cluster except in onomatopoeic words. No consonant sequence or cluster is available finally." Most sequences or clusters contain only two consonants. Medial consonant sequences always occur across syllable boundaries (including apparent geminates) (pp. 44-46).

BAWM

Data Source: Schwerli 1979 [VS-GBL]

Drawn from various texts and from work with two informants, Mr. S. L. Pardo from Munnuam village, Southern Chittagong Hill Tracts, and Miss Piang from Lunginkhar village, Northern Chittagong Hill Tracts.

Inventory: Schwerli 1979 [VS-GBL] (chapter 1)

Although Schwerli notes some differences between the southern and the northern dialects, she provides only a single phoneme inventory.

CONSONANTS

Initials

p	t	tl	ṭ	ch	k	ʔ
ph	th	thl	ṭh		kh	
b	d				(g)	
f				s		h
v	z					
m	n				ng	
	l		r			

Finals

-p	-t		-k	-ʔ
-m	-n		-ng	
-mʔ	-nʔ		-ngʔ	
	-l	-r		
	-lʔ	-rʔ		

- /r/ is a trill.
- /s/ is an alveo-palatal fricative.
- /g/ only occurs in loan words.
- In the orthography introduced by the missionaries, final <-h> represents a glottal stop [-ʔ].

VOWELS

Monophthongs

i î u û

e ê aw âw

a â

Diphthongs

îu ui ûi

ei eu êu awi âwi o

ia ai âi au âu ua

Triphthongs

iau uai

- Vowel length is phonemic. It is marked by <ˆ> above the vowel. Short vowels are centralized. Length is often neutralized in open syllables.
- Long vowels do not occur before a glottal stop or glottalized endings.
- /aw/ is realized as [ɔ]; /awi/ is realized as [ɔy]; /âwi/ is realized as [ɔːy].
- /e/ is realized as [ɛ]; /o/ is realized as [ou].
- [ei] and [ai] tend to occur in free variation.
- Of the diphthongs and triphthongs, only /ia/ and /ua/ can be followed by final consonants other than /-ʔ/.

TONES

Northern Dialect

ma (1)	low
ma (2)	medium or rising
ma (3)	high

Southern Dialect

ma (1)	flat
ma (2)	raised

- Tones are not consistently indicated.
- In the northern dialect, pitch is grammatically determined and is not generally indicated.
- In the southern dialect, the two tones are phonemic in nouns and verbs. There is also a third falling tone which is an intonation contour, and pitch levels associated with grammatical particles.

❖

BENGNI[1]

Data Source: J. Sun 1993a [JS-HCST]
J. Sun 1993b [JS-Tani]

Collected in Rtsedthang County in Tibet from a speaker of the Na tribe of Taksing area in the Upper Subansiri District of Arunachal Pradesh.

Inventory: J. Sun 1993a [JS-HCST] (pages 36-38)

CONSONANTS

Initials

p	pj	t	(tʂ)	č	k	kj	
b	bj	d		ǰ	g	gj	
f	fj			š			h
v							
m	mj	n		ñ	ŋ		
		l		j			
		r		rj			

Finals

-p	-t	-k
-m	-n	-ŋ
	-r	

- There is no phonemic distinction between dental and palatal affricates and spirants. Represented uniformly as palatals, /č/, /ǰ/, and /š/ are pronounced [ts], [dz], and [s] before /ɯ/ and /ɯː/ (e.g. <ta-čɯr> 'spittle' -> [ta-tsər]); elsewhere, they are realized as palatals.
- /tʂ/ occurs only in loanwords, e.g. <kuŋ-tʂin ñiː> 'Chinese' (lit. 'communist man', cf. Chinese <gòngchǎndǎng> 'communist party').
- The velar stops /k/ and /g/ are significantly palatalized before the high vowel /i/ (e.g. <ki-poː> -> [kʲi-poː] 'belly').

[1]Called *Na (Bengni)*, or "*Bengni S*"in [JS-HCST].

VOWELS

Monophthongs	*Diphthongs*
i iː ɯ ɯː u uː oː a aː	ui

- Vowel length is contrastive in open syllables. Short vowels carry a final consonant at the phonetic level, which varies between [-k], [-ʔ], and a fricative. Thus, the word for 'tooth' /fi/ is realized as [fik], [fiʔ], or [fiç]. The high vowels /i/, /u/ and /ɯ/ are devoiced when they are preceded by voiceless onsets in the second syllable of a disyllabic word; the vowel in the first syllable may be optionally lengthened (e.g. /ə-ši/ -> [ə(ː)ɕi̥] 'water').
- Before labial codas, only /a/ and /u/ can occur; before the dental codas /-n/ and /-t/, only the nuclear vowel /i/ can occur; before the /-r/ coda, the only permitted nuclear vowels are /i/ and /ɯ/.
- The diphthong /ui/ may have originally been bimorphemic (e.g. /ŋui/ < /ŋu-i/ 'fish', cf. /ŋu-čak/ 'species of silvery, slender fish').

TONES

- Bengni seems to have developed a marginal tone system which has not yet become fully functional in the entire lexicon. This area of Bengni phonology requires further research.

BISU[1]

Data Source: Beaudouin 1988 [PB-Bisu]

Beaudouin bases most of his information on the Bisu spoken in the village of Ban Doy (also known as Ban Lua and Huai Chomphu), the only one of four Bisu villages in northern Thailand that is entirely Bisu-speaking. Collected in three phases in 1985, 1986, and 1987.

Inventory: Beaudouin 1991 [PB-MB] (pages 39-94 and Volume 2, pages i-v)

The data in [PB-MB] and [PB-Bisu] are identical, but there are some slight differences in transcription.

Note: Transcription of [PB-Bisu] normalized in STEDT database.

SYLLABLE CANON

T
C(C)V(C)

CONSONANTS

Simple Initials

p	pj	t	ts	tj		k	kj	ʔ	
ph	(phj)	th	tsh		tʃh	kh	(khj)		
b	bj	d				g			
(f)			s	sj	ʃ ~ ɕ			h	hj
v									
m		n			ɲ	ŋ			
hm		hn			hɲ	hŋ			
w		l			j				
		hl							

Initial Clusters

(bw)	(fw)	(mw)	(tw)	kw	khw	
pl	phl	bl	thl	kl	khl	hml

[1]Called *mBisu* in [DB-PLolo].

Finals

-p	-t	-k
-m	-n	-ŋ
	-j	

- In [PB-Bisu], the consonants <tʃ tɕ ʃh> also appear. In [PB-MB] they have been transcribed <tʃh tj ɕ> respectively.
- Glottal stop is not distinctive in Bisu, but indicates morpho-syntactic boundaries. Beaudouin analyzes it as a phoneme which is realized as [ʔ] before vowels at morphological or syntactic boundaries, and as [Ø] elsewhere (pp. 41-43). It is transcribed only when it has phonetic realization.
- /phj khj/ are very rare (p. 44).
- An initial consonant /hmj/ occurs in three words, but is not listed by Beaudouin.
- [f] is found only in borrowings from Thai (p. 46).
- The clusters [bw fw mw tw] appear only in borrowings (p. 53).
- The clusters /kw khw/ are realized as labialized velars.
- /b/ can be realized as [m] word-initially in open syllables containing /i a u/. This alternation is not allowed word-internally, although the constraint against word-internal variation appears to be relaxing (pp. 44-45).
- /ʃ/ is realized as [ʃ] before the front vowels [i ɛ] and [ɕ] before the central and back vowels [ɨ ə a ɔ u] (pp. 46-47). Beaudouin's transcription is phonetic in this regard.
- [v] is a variant of /w/, which occurs only in a very limited environment (pp. 47-48). The transcription here is phonetic.
- Before [ɔ], /ts/ varies freely between [ts] and [s] (p. 48). This phoneme is always transcribed <ts>.

VOWELS

Monophthongs			*Diphthongs*	
i	ɨ	u		
ɛ	ə	ɔ	ɔɛ	
	a			aɔ

- Diphthongs occur only in open syllables. Except for /əp ɔp ɨm/, which occur only in Thai loans, all monophthongs combine with all the final stops and nasals. Only /u ə ɔ a/ combine with final /-j/.
- /ɛ/ and /ɔ/ are realized somewhat higher, approaching [e] and [o]. In borrowed Thai vocabulary, the Thai distinctions /e/ vs. /ɛ/ and /o/ vs. /ɔ/ are retained (p. 54).

- The diphthongs /aɔ ɔɛ/ are transcribed <a꜀ ɔ꜀ɛ> in [PB-MB] and [PB-Bisu].
- In addition to the two native Bisu diphthongs /aɔ ɔɛ/, there are also three diphthongs in borrowings from Thai: /ɛɔ eɔ iu/.

TONES

má	high
ma	mid
mà	low

❖ ❖ ❖ ❖ ❖

BISU

Data Source: Nishida 1966 [NT-Bisu]
Nishida 1966-67 [NT-CS]

Fieldwork in one village of 200 people in Myang District, Chiengrai Province, northern Thailand.

Inventory: Bradley 1979 [DB-PLolo] (pages 44-45), from [NT-CS] and [NT-Bisu]

Bradley's data is from [NT-CS] and [NT-Bisu]. Bradley has retained Nishida's phonemic transcription; but where Nishida provided only a phonetic transcription, Bradley has rendered it phonemically.

Secondary Sources: [DB-PLolo], [DB-Bisu], [JAM-TSR]

Note: Transcription normalized in STEDT database.

CONSONANTS

Initials

p	pl	pj	t	ts	tš	kj	kl	k	ʔ
ph	phl	phj	th	tsh	tšh	khj	khl	kh	
b	bl	bj	d						
f				s	š				
m			n		ň			ŋ	
hm		hmj	hn		hň			hŋ	
w	l				j				
	hl				hj				

Finals

-p	-t	-k
-m	-n	-ŋ
-w	-j	

VOWELS

i	ɯ	u
e	ɤ	o
ɛ		ɔ
	a	

TONES

má	high level
ma	mid level
mà	low level or low falling

- In data from [JAM-TSR], the mid tone is sometimes indicated by a macron: <mā>.

❖

BODO[1]

Data Source: Bhat 1968 [Bhat-Boro]

Spoken mainly in the three districts of Assam, Darrang, Nowgong, and Kamrup; also some speakers in the Goalpara, Sibsagar, Lakhimpur, and Garo Hills districts. "Boro" (or Bodo, Bara, Baro, etc.) is the name of both the people and the language; the people are also known as "Kachari".

The material was collected with the help of Madhu Ram Baro, a native speaker of Boro from Hajo, Kamrup district (as informant and early collaborator) (pages vii-viii).

Inventory: Bhat 1968 [Bhat-Boro] (pages 1-7)

Secondary Sources: [JAM-Ety], [JAM-GSTC]

CONSONANTS

Initials

p	t		k	
b	d		g	
	s			h
	z			
m	n			
	l	r		

Finals

-b	(-d)		(-g)	
	(-s)			(-h)
-m	-n		-ŋ	
-w	-l	-r	-y	

- /r/ is an alveolar flap, but intervocalically it is in free variation with a trill.
- /s/ has a freely varying palatalized allophone which is more prominent before /y/.
- /d g h s/ are rare in final position.

VOWELS

Monophthongs			*Diphthongs*
i	ə	u	
e	a	o	əa

[1]Called *Boro* in [Bhat-Boro], [JAM-GSTC]; *Kachari* in [RB-PB]; *Plains Kachari* elsewhere.

- Nasalization occurs only in two words: <kewũ> 'clarified butter' and <gehũ> 'kind of red fruit' (p. 4).

TONES

má	high-falling
ma	mid-falling

- A glottal stop ("catch") is usually found after a final vowel with high tone (p. 5).
- "When a monosyllabic word in high tone becomes the initial syllable of a polysyllabic word, it loses its high tone. And the following syllable, if in itself is not already in high tone, gets a high tone"(p. 9):
  zá 'to eat' zadáŋ 'eats'
- When a polysyllabic word with high tone in the second syllable takes a (monosyllabic) prefix the tone gets transferred to the first syllable (i.e. to the second syllable of the derived form) (p. 10):
  bazə́y 'elder brother's wife'
  bibázəy 'his elder brother's wife'

NOTES

- "Most of the medial two-consonant clusters have a morphemic boundary in-between. Exceptions are mainly the following:
  (i) clusters with two identical consonants,
  (ii) some of the stop + *r* or stop + *l* clusters (mostly having a voiceless stop as the first member), and
  (iii) clusters with *y, w* or *ŋ* as the second member" (p. 6).
- Clusters with two identical obstruents are in free variation with reduction to a single consonant, especially in words "functioning as adjectives" (p. 6).
- The voiced obstruents never form a cluster with the voiceless obstruents (p. 6).
- Initial clusters alternate with clusters broken up by a vowel identical to the final vowel in the word (p. 7):

kró	~	koró	'head'
prú	~	purú	'to loosen'
klum	~	kulum	'to worship'
kma	~	kama	'to lose'
knó	~	konó	'to put in'

  Bhat's analysis is that the vowel is deleted from the longer form, but we analyze it as a harmonic epenthetic vowel to break up the cluster.

❖ ❖ ❖ ❖ ❖

BODO

Data Source: Burling 1959 [RB-PB]
From one informant in Goalpara District, north of the Garo Hills, Assam.

Inventory: Burling 1959 [RB-PB] (pages 435-437)

Secondary Sources: [JAM-Ety], [JAM-GSTC]

CONSONANTS

Initials

p	t		k	
b	d		g	
	s			h
	z			
m	n			
	l	r		

Simple finals

-p	-t		-ʔ
-m	-n	-ŋ	
	-r		

Final clusters

-ʔm	-ʔn		-ʔŋ
		-ʔr	

- "/l/ is a lateral, and /r/ is a moderate trill" (p. 436).
- /s/ is very similar to English /s/. /z/ is a very weak affricate and is articulated further back than /s/, closer to the position of English /š/.
- Aspiration of /p t k/ varies allophonically, depending upon the following vowel: all are strongly aspirated before /o/ and /u/, and unaspirated before /a e ə/. Before /i/, all are unaspirated, but /k/ has a slightly spirantal release, /t/ has a more emphatically spirantal release, and /p/ has very strong spirantization.
- Glottal stop is only realized as glottal stop when word-final or in a final cluster. When it is followed by another syllable in the same word, glottal stop is not pronounced, but the following syllable is pronounced with a high pitch. In words which have no glottal stop in the first syllable, the second syllable is pronounced with a low pitch. Burling regards pitch to be an allophone of /ʔ/.

VOWELS

Monophthongs			*Diphthongs*
i		u	
e	ə	o	əi əu
	a		ai au

- The diphthongs do not combine with any finals except /-ʔ/.

TONES

- Burling only finds evidence of two tones, high and low. High tone follows syllables ending in glottal stop, and low tone follows syllables without glottal stop. However, he speculates that further investigation might find two contrasting tones in syllables ending without a glottal stop.
- In other words : "In Kachari the glottal stop is apparently just one phonetic aspect of a phonemic feature that includes pitch. Morphemes which when used alone end in a glottal stop are followed by a rise in pitch on a following syllable if there is one. The symbol /ʔ/ in Kachari bisyllabic words, then, does not actually denote a phonetic glottal stop, but instead means that the second syllable is spoken with a raised pitch" (p. 450).

BOKAR[1]

Data Source: Megu 1990 [MEG1990]
Monigong, West Siang District, Arunachal Pradesh.

Inventory: J. Sun 1993a [JS-HCST] (page 495), normalized from [MEG1990]
Sun refers to Megu's data as "Bokar M".

CONSONANTS

Initials

p	t		č	k	
b	d		ǰ	g	
	s				h
m	n		ñ	ŋ	
(w)	l	r	j		

Finals

-p	-t	-k
-m	-n	-ŋ
	-r	

- /č ǰ ñ j ŋ/ are transcribed <c j ny y ng> in [MEG1990].
- [w] does not seem to be a phoneme in this language.
- /ŋ/ is transcribed <ng> in [MEG1990].

VOWELS

Monophthongs

i iː	ɯ ɯː	u uː
e eː	ə əː	o oː
	a aː	

- Vowel length marking does not seem to be consistent in [MEG1990].

❖ ❖ ❖ ❖ ❖

[1] Also called *Bokar Adi* in [JS-HCST]; called *Luoba (Boga'er)* in [ZMYYC]; *Luoba* in [SLZO-MLD], [JZ-Luoba].

BOKAR

Data Source: Sun et al. 1991 [ZMYYC] #51
Sun et al. 1980 [SLZO-MLD]
Ouyang 1985 [JZ-Luoba]

Collected in Qionglin Village, Nayu Town, Milin [Mainling] County, Tibet.

Inventory: Sun et al. 1991 [ZMYYC] #51 (pages 347-350)
Sun et al. 1980 [SLZO-MLD] (pages 115-121)
Ouyang 1985 [JZ-Luoba] (pages 3-12)

Secondary Sources: [JS-HCST] (from [ZMYYC], [JZ-Luoba])

CONSONANTS

Initials

p	pj	t	(tʂ)	tɕ	k	
b	bj	d		dʑ	g	
				ɕ		h
						ɦ
m	mj	n		ɳ	ŋ	
(w)		l	r	j		

Finals

	-p	-t	-k
	-m	-n	-ŋ
		-r	

- The initial /r/ is pronounced as a trill by most speakers, and as [ʐ̢] by some speakers.
- /w/ and /j/ are approximants. /w/ is rare. /j/ is very lightly fricated, and is confusable with /ɦ/.
- In native words [ɦ] and [h] are in free variation, with the majority of speakers pronouncing [ɦ]. However, all Tibetan loanwords are pronounced with [h], so [ɦ] and [h] are kept distinct in the transcription.
- Zero-initial is realized as [ʔ].
- Aspirated stops sometimes occur in Tibetan loanwords, but most speakers pronounce them as unaspirated.
- Before vowels other than /i/, some speakers pronounce /tɕ ɕ/ as [ts s]; however, /dʑ/ is always [dʑ].
- /tʂ/ occurs only in Tibetan loanwords.

- The palatal series /tɕ dʑ ɕ ɳ̊ j/ is retranscribed <č ǰ š ñ j> in [JS-Tani] and [JS-HCST].
- /ɦ/ is retranscribed <h> in [JS-Tani] and [JS-HCST].

VOWELS

i iː	ɯ ɯː	u uː
e eː	ə əː	o oː
	a aː	

- Vowel length is distinctive only in open syllables.
- The vowel /ə/ is pronounced somewhat closed and back; after velars it is confusable with /ɯ/.
- /oŋ/ is realized as [õŋ].
- /ɯ/ is fronted to varying degrees in the rhymes /ɯk/ and /ɯŋ/ when preceded by dental initials.
- There are systematic gaps in the Bokar rhyme system. Before dental codas /-n/ and /-t/, only front vowels /i/ and /e/ can occur; before labial codas /-m/ and /-p/, the vowels /i/, /ə/, and /ɯ/ do not occur.
- [ZMYYC] also lists forms with diphthongs /ei iu əu/.

TONES

- Editor's note: Contrastive tones do not exist in Bokar. [JZ-Luoba] reports that certain syllables are associated with conventionalized pitch contours which seem unpredictable. E.g. <ǰaː> 'tea' carries low rising pitch whereas <ŋoː> 'I' carries high level pitch. This may be due to influence from tonal dialects of Tibetan ("Bokar OY" <ǰaː> 'tea' is a Tibetan loan, cf. Lhasa <cha̲>).

❖

BOLA

Data Source: Dai 1989 [DQ-Bola]
Dai et al. 1991 [DHFRL]

[DHFRL]: Collected in Kongjiazhai of Santaishan District, Luxi County, Yunnan.

Inventory: Dai et al. 1991 [DHFRL] (pages 316-351)

CONSONANTS

Initials

p	pj	t	ts	tʃ	k	kj
ph	phj	th	tsh	tʃh	kh	khj
f		s		ʃ	x	
v				(ʒ)	ɣ	
m	mj	n			ŋ	ŋj
			l		j	

- /ʒ/ occurs mainly in loanwords.
- When /t th n l ts tsh s tʃ tʃh/ combine with /e/, they are palatalized by insertion of an epenthetic glide [j].

RHYMES

ɿ i u ɛ , ø ə ɔ a	ɪ̄ i̲ u̲ ɛ̲ , ø̲ ɔ̲ a̲
ɛ̃ ɛ̲̃ , ø̃ ɔ̃ ɔ̲̃	ui u̲i əi ɔi ai a̲i au a̲u
ɛʔ , øʔ əʔ ɔʔ aʔ auʔ	ɛ̲ʔ , ø̲ʔ ɔ̲ʔ a̲ʔ a̲uʔ
ap a̲p	am a̲m

ɛt ɔt ɔ̱t	un ɛn ən ɔn ɔ̱n an a̱n
ak a̱k	uŋ u̱ŋ ɔŋ ɔ̱ŋ aŋ auŋ a̱ŋ a̱uŋ

- Only unconstricted vowels occur after aspirated stops and affricates. After voiceless fricatives there is no contrast between constricted and unconstricted vowels; most are pronounced as unconstricted.
- In a small number of words there is variation between [ɿ] and [i], or between [i] and [ai].
- /ə/ is generally pronounced [e] in open syllables, whether as a monophthong or in the diphthong /əi/.
- There are a number of rhymes, not listed above, which occur only in a handful of words, most of which are loanwords.
- Syllables with constricted vowels are realized with an initial [ʔ].

TONES

ma^{55} high level
ma^{35} high rising
ma^{31} low falling
ma^{51} full falling

- When the high level tone occurs in stopped syllables, it is [^{54}]; in non-stopped syllables it is [^{44}].
- The full falling tone mostly occurs as sandhi variants of other tones, but does occur as the basic tone in a small number of words.
- In stopped syllables, only the high level and low falling tones occur.

❖

BORI

Data Source: Megu 1988 [MEG1988]
Collected in Payum village, West Siang District, Arunachal Pradesh.

Inventory: Megu 1988 [MEG1988]

CONSONANTS

Initials

p	t		c	k	
b	d		j	g	
	s				h
m	n		ny	ng	
	l	r	y		

Finals

-p	-t		-k
-m	-n		-ng
	(-l)	-r	

- <c j> represent [tʃ dʒ].
- /-l/ seems to occur only in loanwords.
- A distinctive trait of Bori is the tendency to merge labial and dental codas. This sound change apparently has not yet run its full course, since there are instances of labial codas in native vocabulary (provided, of course, that the data is correct).

VOWELS

i	í	u
e	é	o
	a	

- <í é> represent [ɨ ə].
- Vowel length marking seems inconsistent (vowel length is said to be distinctive at least for the vowel /a/).

❖

BUNAN

Gahri

Data Source: S. R. Sharma 1991a [SBN-BunQ]
STEDT Questionnaire. The informants were Bodh Norbu and Nawang Norbu.

Inventory: S. R. Sharma 1991a [SBN-BunQ]

CONSONANTS

p	t	ṭ	ts	c	k	ʔ
ph	th	ṭh	tsh	ch	kh	
b	d	ḍ	dz	j	g	
	s	ṣ		š		h
	z					
m	n			ñ	ŋ	
w	l	r		y		

- /t th d s/ are dentals and /ṭ ṭh ḍ ṣ/ are alveolars.

VOWELS

Monophthongs			*Diphthongs*
i		u	
e		o	oi
ɛ	ə		oa
(a)		ɑ	

- <a> appears in the handwritten data but is not included in the vowel chart.

TONES

mà	high falling
ma	level

❖

BURMESE (WRITTEN)

Data Source: Benedict 1976 [PKB-WBRD]

Inventory: Benedict 1976 [PKB-WBRD] (pages iv-ix)
Additional phonological information provided by James A. Matisoff.

CONSONANTS

Simple Initials

p	t		c	k	ʔ
ph	th		ch	kh	
b	d		j	g	
(bh)	(dh)		(jh)	(gh)	
	s				h
m	n		ñ	ŋ	
hm	hn		hñ	hŋ	
w	l	r	y		
hw	hl	hr	hy		

- The voiced aspirates appear only in borrowings from Sanskrit and Pali.
- Zero-initial is realized as [ʔ].
- There is no contrast between dental and palatal affricates in WB. The value of this series of affricates is not certain, but a palatal articulation is most likely for several reasons. First, /c/ and /ñ/ show the same combinatory pattern in rhymes; furthermore final dental affricates are far less common than final palatal affricates (p. viii).

Initial Clusters

(pl)	(kl)				
pr	phr	br	kr	khr	gr
py	phy	by	ky	khy	gy

- "[W]e regard medial /-w-/ as belonging to the syllable's rhyme, while medial /-y-/ and /-r-/ are treated as part of the initial consonant cluster" (p. v).
- /l/ appears in clusters with /p/ and /k/ only in inscriptional Burmese (Old Burmese).
- Clusters with voiced stops are less common than those with voiceless stops.

Finals

-p	-t	-c	-k
-m	-n	-ñ	-ŋ

RHYMES

i u e we o a wa	ui ai wai
ip up ap wap	im um am wam
it ut at wat	in un an wan
  ac	 añ
uik ok ak wak	uiŋ oŋ aŋ waŋ

- "The WB rhyme here transcribed 'ui' has been interpreted as [iu] or [ɨ] by other scholars" (p. viii).
- "The rhymes here transcribed as 'o' and 'ok' are sometimes deemed to have represented [au] and [auk], respectively" (pp. viii-ix).

TONES

ma	level tone
mâ	heavy tone
ma'	creaky tone

- Unstressed schwa has no tone and is unmarked (p. viii).
- There is no tonal contrast in syllables with final stops /-p -t -c -k/.

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BURMESE

Rangoon

Data Source: Burling 1967 [RB-PLB]
"I collected all the data myself or at least checked it personally with speakers of the various languages, largely with students at the University of Rangoon in 1959-60" (p. 4).

Inventory: Burling 1967 [RB-PLB] (pages 13-15)

CONSONANTS

Initials

p	py		t	c	k	(ʔ)
ph	phy		th	ch	kh	
b	by		d	j	g	
		θ	s	š	h	
			sh			
			z			
m	my		n	ny	ŋ	
hm	hmy		hn	hny	hŋ	
w			l	y		
			hl	hy		

- /c ch/ are affricates.
- /hm hn hŋ hl hy/ are pre-aspirated.
- Editor's note: /š/ is more like IPA [ç], and is derived from /*hr/.
- Zero-initial is realized as [ʔ]. Burling does not indicate initial glottal stop in order to keep it distinct from the final glottal stop (p. 14).
- /w/ can precede only the unrounded vowels /i ei e a/.

Medials

-y- -w-

- /-y-/ occurs only after the initial consonants /p ph b m hm n hn h/ (p. 14).
- /-w-/ occurs after any simple initial except /w/. It does not occur with any clusters with medial /-y-/ except for in /hyw/. It only occurs with vowels /i ei e a/ (p. 14).

Finals

-ʔ

- /-ʔ/ cannot follow nasalized vowels.
- Editor's note: Although /-ʔ/ derives historically from final stops. it is now best regarded as a tonal feature.

VOWELS

Monophthongs		*Diphthongs*
i in	u un	
e	o	ei ein ou oun
a an		ai ain aun

- <-n> represents nasalization.
- "Nasalized vowels moreover do assimilate to an initial consonant which follows in close conjuncture to produce a homorganic nasal. Nasalization is incompatible with the glottal stop, but both nasalized and stopped high vowels (in, iʔ, un, uʔ) are articulated somewhat lower than the most similar open vowel" (p. 15).

TONES

má	"Low, long and gently rising"
mâ	"Higher than /á/, falling"
mà	"High, short, sharply falling, [with] marked glottal constriction"
maʔ	"Very short and terminated by a glottal stop"
mă	"'Toneless', short, weakly stressed"

- /mà/: This tone is characterized by glottal constriction which produces creaky voice.
- /maʔ/: The glottal tone does not occur with nasal vowels.
- "Burmese has a 'weak' syllable type in which the vowel is very short, always low or mid central and weakly stressed. Such syllables can never occur alone and they never occur in word-final position. No tone contrast is found on such syllables and they might therefore be called 'toneless' syllables. Alternatively, they might be said to constitute a fifth tone, but since these syllables occur only with a single 'schwa' like vowel, their status is clearly quite different from that of the other tones." These syllables are never nasalized or stopped (p. 15).

NOTES

- "Burmese is characterized by wholesale assimilation both of syllable final stops and vowel nasalization to the initial of the following syllable, and also of syllable initials

to the voicing characteristics of the preceding syllable. Thus what appears in absolute final position as a glottal stop assimilates to the articulatory position of the initial stop of the following syllable, while a final nasal is always homorganic with the following syllable initial" (pp. 13-14).

- Initial stops are always voiced when they occur in close juncture after open syllables. Many phonetically voiced obstruents occur as a result of assimilation, and are rare in absolute initial position (p. 14).
- Rather than including the assimilation of the consonants in his transcription, Burling transcribes each morpheme in only form, that of the syllable said in isolation (p. 14).

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BURMESE

Rangoon

Data Source: Roop 1972 [DHR-IBWS]

Inventory: Roop 1972 [DHR-IBWS] (pages ix-xiii)

SYLLABLE CANON

(T)
$C_1(C_2)V(n)$

CONSONANTS

Initials

p		t		c	k	q
hp		ht		hc	hk	
b		d		j	g	
	th	s		hy		h
		hs				
	dh	z				
m		n			ng	
hm		hn			hng	
w		l	(r)	y		
		hl				

- <h> before obstruents indicates aspiration (p. xii).
- <h> before sonorants indicates voicelessness (p. xii).

- <h> after <t> and <d> indicates frication. /th dh/ are spirants (p. xii).
- /c hc j/ are affricates (p. xii).
- /r/ is a "voiced flap or spirant" and appears only in borrowings (p. xii).

Medials

-y- -w-

- /-y-/ occurs with /p hp b m hm n hn/ and, rarely, with /l hl/ (p. xi).
- /-w-/ occurs with all initial consonants except /w/ and /q/ (p. xi).

Finals

-n

- /-n/ never occurs in a syllable with tone IV.

VOWELS

Monophthongs		*Diphthongs*
i	u	
ei	ou	
e	o	
a		ai au

- /ei/ and /ou/ are upper mid vowels; /e/ and /o/ are lower mid vowels.
- /ai/ and /au/ do not occur in open syllables with tone I, II, and III (p. xiii).
- /e/ does not occur with final /-n/; /o/ does not occur with tone IV or with final /-n/ (p. xiii).

TONES

ma-, ma	Tone I	low level
maː	Tone II	long high falling
ma.	Tone III	short high falling, with slow glottal closure
ma'	Tone IV	short high level, with sharp glottal closure

- Tone marks follow the syllable to which they refer, even if closed.
- Tone I is unmarked only before a space.
- Toneless syllables are short with neutral pitch and occur only with /a/ and before another syllable. They are unmarked.

❖

CANGLUO[1]

Eastern Bhutan

Data Source: Andvik 1993 [EA-Tsh]

Collected from Bhutanese Tshangla speakers in the Darjeeling district in West Bengal, India.

Inventory: Andvik 1993 [EA-Tsh] (page 133)

CONSONANTS

Initials

p	t	ts	tr	ch	k	
ph	th	tsh	thr	chh	kh	
b	d	(dz)	dr	j	g	
		s		sh		h
		z		(zh)		
m	n			ny	ng	
w	l		r	y		
	(lh)					

- Symbols in parentheses are found in loanwords.

Finals

-p	-t			-k
	-s			
-m	-n			-ng
-w	-l	-r	-y	

VOWELS

	i		u	
	e		o	
		a		

❖ ❖ ❖ ❖ ❖

[1]Called *Tshangla* in [EA-Tsh]; *Menba (Motuo)* in [ZMYYC], [SLZO-MLD]; *Central Monpa* in [KDG-ICM]. Also called *Sharchop-kha*.

CANGLUO

Motuo

Data Source: Zhang Jichuan 1986 [JZ-CLMenba]
Collected in Beibeng Village, Motuo [Mêdog] County, Tibet.

Inventory: Zhang Jichuan 1986 [JZ-CLMenba] (pages 3-14)

CONSONANTS

Initials

p	pr	t	ts	(tʂ)	tɕ	k	
pʰ	pʰr	tʰ	tsʰ	(tʂʰ)	tɕʰ	kʰ	
			s	(ʂ)	ɕ		h
m	mr	n			ɳ	ŋ	
w		l		r	j		
		(ɬ)					

- Aspiration is indicated by < ‘ > in [JZ-CLMenba] but is indicated by <ʰ> in the STEDT database.
- All zero-initial syllables in the high tone have an optional initial glottal stop, which is not transcribed. Zero-initial syllables in the low tone are rare.
- /p t k ts tʂ tɕ s/ have voiced realizations in low tone syllables, which are not transcribed. (The voiced allophone [ʑ] of /ɕ/ has devoiced for most speakers even in low tone syllables. [z] has devoiced for some speakers as well.)
- The retroflex affricates appear mostly in Tibetan loandwords. [ʂ] appears in a very few Chinese loanwords. /ɬ/ only appears in Tibetan loanwords.
- Velar initials /k kʰ ŋ/ are palatalized before high front vowels /i e/.
- /h/ is realized as [x] before vowels /a e/.
- /r/ is realized as a retroflex glide [ɹ].

Finals

-p	-t		-k	-ʔ
	-s			
-m	-n		-ŋ	
		-r		

- Finals /p t k/ are unreleased and are realized with an accompanying glottal stop.

- Final /r/ may be realized as a retroflex glide, flap, or trill.

VOWELS

Monophthongs		*Diphthongs*	
i , (y)	u	iu	(ui)
e , ø	o		oi
a		ai au	

- /ai/ is realized as [ae]; /oi/ is realized as [øe].
- /y/ and /ui/ appear mostly in Tibetan loanwords.
- The five basic vowels /i e a o u/ can combine with all finals. /y/ only occurs in open syllables, and /ø/ only occurs in open syllables or with /-ʔ/.
- /i/ is realized as [ɿ] after /ts tsʰ s/ and as [ʅ] after /tʂ tʂʰ r/ except in the rhymes /in/ and /ui/.

TONES

ma^{55} high

ma^{13} low

- In [JZ-CLMenba], tones are represented by Chao tone letters, not numbers.
- Grammatical words, suffixes, and some other syllables may occur in a neutral tone, in which case they are transcribed without tone letters.
- Only nasal and glide initials occur in both tones. Voiceless affricates and fricatives have voiced allophones in low tone (except /ɕ/, whose low tone allophone has devoiced).

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CANGLUO

Motuo

Data Source: Sun et al. 1991 [ZMYYC] #7
Sun et al. 1980 [SLZO-MLD]

[ZMYYC]: Collected in Didong Village, Didong Town, Motuo [Mêdog] County, Tibet.

Inventory: Sun et al. 1991 [ZMYYC] #7 (pages 174-177)
Sun et al. 1980 [SLZO-MLD] (pages 65-74)

CONSONANTS

Initials

p	pr	t	ts	tʂ	tɕ	k	ʔ
ph	phr	th	tsh	tʂh	tɕh	kh	
b	br	d	dz	dʐ	dʑ	g	
			s		ɕ		h
			z		ʑ		
m	mr	n			ɳ	ŋ	
w		l		r	j		
		(ɬ)					

- /ɬ/ appears only in Tibetan loanwords.
- /wu/ is realized as [ɦu] or [u].
- /r/ is realized as a retroflex glide [ɹ].
- /z ʑ/ have devoiced to [s ɕ] for some young speakers.
- Aspiration is indicated by < ‘ > in [SLZO-MLD] but is indicated by <ʰ> in the STEDT database.

Finals

-p	-t		-k	-ʔ
	-s			
-m	-n		-ŋ	
	-l	-r		

- /-l/ does not occur in the speech of some speakers.
- /-p -t -k/ are unreleased and are realized with an accompanying glottal stop.
- /-r/ may be realized as a retroflex glide, flap, or trill.

VOWELS

Monophthongs		*Diphthongs*
i , y	u	
e , ø	o	
a		ai au

- The five basic vowels /i e a o u/ can combine with all finals (except for the combination /il/). /y/ and /ø/ appear only in open syllables or with /-ʔ/.

- /i/ is realized as [ɿ] after /ts tsh s/ and as [ʅ] after /tʂ tʂh dʐ r/ except in the rhymes /in/ and /ui/.
- /y/ can be realized as [ui] or [yi]; /ø/ can be realized as [oi] or [øi].
- /ut un ot on os/ are realized as [yt yn øt øn øs] by some speakers.

CANGLUO

Tilang

Data Source: Das Gupta 1968 [KDG-ICM]
Collected in Tilang Area, Mendawang [Moindawang] District, Tibet.

Inventory: Zhang Jichuan 1986 [JZ-CLMenba] (pages 167-169), from [KDG-ICM]

Secondary Sources: [JZ-CLMenba]

Note: Transcription of [JZ-CLMenba] normalized in STEDT database.

CONSONANTS

Initials

p	pr	t	ts	tr	tɕ	k	kr		
pʰ	pʰr	tʰ	tsʰ		tɕʰ	kʰ	kʰr		
b	br	d		dr	dʑ	g	gr		
			s	sr	ɕ			h	hr
			z		ʑ				
m	mr	n			ɳ	ŋ			
w		l		r	j				
		ɬ							

- /tɕ tɕʰ dʑ ɕ ʑ ɳ j ŋ ɬ/ are transcribed <c ch j sh zh ny y ng lh> in [JZ-CLMenba].

Finals

-p	-t		-k
	-s		
-m	-n		-ŋ
-mp	-nt		-ŋk
		-r	
		-rr	

- The value of <rr> is unclear.

VOWELS

i	u
e	o
a	

TONES

- Das Gupta's transcription does not include tones.

❖

CHAMLING

Data Source: Winter 1985 [WW-Cham]
The principal consultant was Mr. Dhan Prasad Rai.

Inventory: Winter 1985 [WW-Cham] (page 1)

CONSONANTS

p	t		c	k	
ph	th		ch	kh	
b	d			g	
bh	dh			gh	
	s				h
m	n			ng	
w	l	r	y		

- <h-> indicates that the following syllable is breathy.
- The data include isolated instances of<t̥>; it does not appear to have phonemic value.

VOWELS

Monophthongs

Oral			*Nasal*		
i		u			uN
e (E)	A	(O) o	eN		(ON) oN
	a			aN	

Diphthongs

Oral			*Nasal*	
iu iw		uy		uyN
ae aE ea	Ay	oy ow Ow	AyN	
	ay ua			

- /A/ is [ə].
- Although it is unclear, <O> is probably an allophone of /o/.
- The status of /ua Ay uy ow iu Ow oy ae ea uyN AyN/ is uncertain; they have been treated as diphthongs here.
- The data include isolated instances of <E>; it does not appear to represent a phonemic distribution.

❖

CHANG

Data Source: Marrison 1967 [GEM-CNL]

Spoken in the central part of the Tuensang district of Nagaland. Marrison takes his lexical data from [HUT1929].

Inventory: Marrison 1967 [GEM-CNL] (page 350)

Secondary Sources: [WTF-PNN]

CONSONANTS

Initials

p	t	ch	k	
ph	th		kh	
b	d	j	g	
	s	sh		h
			gh	
m	n	ny	ng	
w	l	y		

Finals

-p	-t	-k	
			-h
-m	-n		

- Marrison indicates that <ch gh sh> correspond to /c ɣ ʃ/ respectively.
- Marrison does not list /h/ as a final, but it appears finally in several forms.

VOWELS

Monophthongs			*Diphthongs*		
i		u			
e	ü	o	ei		ou
	a			ai au	ao

- Marrison indicates that <ü> corresponds to /ə/.
- The symbols <ũ ū û> also appear in the data; their value is uncertain.

❖

CHANTYAL

Data Source: Noonan et al. 1992 [NPB-ChanQ]
STEDT Questionnaire. The informant was Ram Bhulanja.

Inventory: Noonan et al. 1992 [NPB-ChanQ]

CONSONANTS

p	t		c	k
ph	th		ch	kh
pɦ	tɦ		cɦ	kɦ
b	d		j	g
bɦ	dɦ		jɦ	gɦ
	s			
m	n			ŋ
mɦ	nɦ			
w	l	r	y	
	lɦ	rɦ	yɦ	

- <ɦ> indicates that the following vowel is murmured.
- /t th tɦ d dɦ s n nɦ l lɦ/ are dentals.
- Medial consonants may be long, in which case they are doubled in transcription.
- "Voiceless murmured stops involve a voiceless stop (aspirated or unaspirated depending on point of articulation) followed by a murmured vowel. Our consultant, Ram Bhulanja, considers this series phonemic."
- The affricates /jɦ j c ch cɦ y yɦ/ are alveolar except before front vowels and /y/, when they are alveopalatal.

VOWELS

Monophthongs

Oral			*Nasal*		
i ii		u uu	ĩ ĩĩ		ũ ũũ
e ee	ə əə	o oo	ẽ ẽẽ	ə̃ ə̃ə̃	õ õõ
	ɑ ɑɑ			ɑ̃ ɑ̃ɑ̃	

- There is no discussion of diphthongs. The data supplied includes examples of vowel + glide (/-y/ and /-w/) but no examples of vowel + vowel.

❖

CHEPANG

Eastern/Maiserang

Data Source: Caughley 1990 [RC-ChepQ]
Caughley 1972 [SIL-Chep]

Collected in Maiserang, a village in the Makwanpur District of Nepal. This dialect serves as the standard for the Eastern Dialect of Chepang.

Inventory: Caughley 1990 [RC-ChepQ]
Caughley 1972 [SIL-Chep]

Note: Transcription of [SIL-Chep] normalized in STEDT database.

CONSONANTS

Initials

p	t		c	k	ʔ
ph	th		ch	kh	
b	d		j	g	
bh	dh		jh	gh	
	s				h
m	n			ŋ	
hm	hn			hŋ	
w	l	r	y		
hw	hl	hr	hy		

- /ʔ/ is transcribed <?> in [SIL-Chep].
- <h> representing aspiration in [SIL-Chep] appears as <^{h}> in the STEDT database.

Medials

-l-	-r-	-y-	-w-
-ly-	-lw-	-ry-	

Finals

-p	-t		-k
	-s		
-m	-n		-ŋ
-mh	-nh		-ŋh
-w	-l	-r	
-wh	-lh	-rh	-yh

Final Clusters

-mʔ	-nʔ		-ŋʔ
-wʔ	-lʔ	-rʔ	-yʔ
-yk	-yŋ	-yŋh	-yŋʔ

- /-ʔ/ may be realized as a falling tone.

VOWELS

i		u
e	ə	o
	a	

- /e/ is pronounced [ɛ]; /o/ is pronounced [ɔ].
- /a ə/ are transcribed <aa a> in [SIL-Chep].

NOTES

- < . > represents probable morpheme boundaries; however, < . > in [SIL-Chep] appears as < - > in the STEDT database.

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CHEPANG

Eastern/Maiserang

Data Source: Hale 1973 [AH-CSDPN]

Hale's wordlist is from Bhobikan Chepang, Ross Caughley and Kathleen Caughley . The data is from Maiserang in Makwanpur District, Nepal.

Inventory: Hale 1973 [AH-CSDPN] (pages 30-31), from [CAU1969]

Note: Transcription of [AH-CSDPN] normalized in STEDT database.

CONSONANTS

p	t		c	k	ʔ
ph	th		ch	kh	
b	d		j	g	
bh	dh		jh	gh	
m	n			ng	
hm	hn			hng	
mh	nh			ngh	
	s				h
w	l	r	y		
hw	hl	hr	hy		
wh			yh		

- /ʔ/ is transcribed <?> in [AH-CSDPN].
- <hm hn hng hw hl hr hy mh nh ngh wh yh> represent voiceless sonorants. When <h> precedes the sonorant (as in <hm>), the sound is syllable initial, and when <h> follows it (as in <mh>), the sound is syllable final.

VOWELS

i		u
e	a	o
	ā	

❖

CHOKRI

Data Source: Nienu 1990 [VN-ChkQ]
STEDT Questionnaire.

Inventory: Nienu 1990 [VN-ChkQ]

CONSONANTS

Initials

p		t	ts	k	kr	
ph		th	tsh ch	kh	khr	
b	bv	d	dz			
			s sh			h
v			z zh			
m		n	ny			
mh		nh	nyh			
		l	r y			
		lh	rh			

- /bv/ occurs only before /ü/.
- There is an instance of syllabic [m] freely alternating with [mü] (‘kiss’).

Medials

-r- -y-

VOWELS

Monophthongs			*Diphthongs*	
i	ü	u		
e		o	ie	ou
	a			

TONES

ma^{55}	high
ma^{33}	mid
ma^{11}	low
ma^{31}	falling
ma^{35}	rising

❖ ❖ ❖ ❖ ❖

CHOKRI

Data Source: Marrison 1967 [GEM-CNL]
Spoken in the area east of the Doyang River by the Chokri, an Eastern Angami Group. Marrison takes his lexical data from [GEM-Chok].

Inventory: Marrison 1967 [GEM-CNL] (pages 350-351)

SYLLABLE CANON

(C)V(V)

CONSONANTS

p	pr	t		ts/ch		k	kr	kw	
ph	phr	th				kh	khr	khw	
b		d				g			
		s		sh	shw				h
v		z		zh					
m		n				ng			
mh		nh							
		l	r	y					
		lh	rh						

- The sequence <nd> appears in the data but not in Marrison's inventory.
- Marrison indicates that <ch> and <ts> correspond to /c/. It is not clear whether this represents allophonic or merely orthographic variation.
- <sh zh> correspond to /ʃ ʒ/ respectively.

VOWELS

Monophthongs			*Diphthongs*
i		u	
e	ü	o	ie
	a		

- The list of phonemes includes <θ>, which is probably a typographical error for <ə>.
- Marrison indicates that <ü> corresponds to /ə/.

TONES

- Marrison indicates that there is a tonal system but does not mark tones.

❖

CUONA[1]

Southern/Mama

Data Source: Sun et al. 1991 [ZMYYC] #6
Sun et al. 1980 [SLZO-MLD]
Lu 1986 [JZ-CNMenba]

Collected in Mama Town, Lebu District, Cuona County, Tibet.

Inventory: Sun et al. 1991 [ZMYYC] #6 (pages 168-173)
Sun et al. 1980 [SLZO-MLD] (pages 4-11)
Lu 1986 [JZ-CNMenba] (pages 3-16)

CONSONANTS

Simple Initials

p	t	ts	tʂ	tɕ	c	k	ʔ
ph	th	tsh	tʂh	tɕh	ch	kh	
b	d	dz	dʐ	dʑ	ɟ	g	
		s	ʂ	ɕ			h
		z		ʑ			
m	n			ɳ		ŋ	
w	l	r			j		
	ɬ						

Initial Clusters

pl	phl	bl	kl	khl
pr	phr	br	kr	khr

Finals

-p	-t	-k	-ʔ
	-s		
-m	-n	-ŋ	
	-r		

- /b d ɟ g dz dʐ dʑ/ are only slightly voiced.
- /r/ is heavily fricated as a simple initial (close to [ʐ]), but is realized as [r] elsewhere.

---

[1]Called *Menba (Cuona)* in [ZMYYC], [SLZO-MLD].

- All syllables with zero-initial in the low tones (high rising tone in [JZ-CNMenba]) are realized with a non-phonemic initial [ɦ], which is not transcribed.

VOWELS

Monophthongs

Short		*Long*	
i , y	u	iː , yː	uː
e , ø	o	eː , øː	oː
ɛ	ɔ	ɛː	ɔː
A		Aː	

Diphthongs

iu

eu

Ai Au

- /i(ː)/ is realized as [ɻ(ː)] after alveolar affricates, [ʅ(ː)] after retroflex affricates.
- /i/ is the only vowel that combines with /-s/.
- Only short vowels occur with finals.

TONES

mA^{55}	high level
mA^{53}	high falling
mA^{13}	low rising
mA^{31}	low falling

- [JZ-CNMenba] describes the low rising tone as /^{35}/.
- In [JZ-CNMenba], tones are represented by Chao tone letters, not numbers.
- The high falling tone has allotone [^{54}] with short vowels, diphthongs, and nasal finals and allotone [^{52}] with finals /-p -t -k -ʔ/.
- The low rising tone has allotone [^{14}] with long vowels or consonant cluster initials and allotone [^{131}] with diphthongs or finals /-p -t -k -ʔ/.
- The low falling tone occurs only with grammatical particles.

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CUONA

Northern/Wenlang

Data Source: Lu 1986 [JZ-CNMenba]
Collected in Wenlang Commune, Dexing District, Motuo [Mêdog] County, Tibet.

Inventory: Lu 1986 [JZ-CNMenba] (pages 125-133)

CONSONANTS

Simple Initials

p	t	ts	tʂ	tɕ	k
pʰ	tʰ	tsʰ	tʂʰ	tɕʰ	kʰ
b	d	dz	dʐ	dʑ	g
		s	ʂ	ɕ	x
		z		ʑ	ɣ
m	n			ɳ	ŋ
w	l	r		j	
	ɬ				

- /ɣ/ is transcribed <l> in [JZ-CNMenba], but it is positioned in the chart as the voiced counterpart of /x/. Its exact phonetic nature is not explained.
- Aspiration is indicated by <h> in [JZ-CNMenba] and by <ʰ> in the STEDT database.

Cluster Initials

pl	bl	ml	kl	gl	ŋl			
pr	pʰr	br	mr	kr	kʰr	gr	xr	ŋr

Finals

-p	-t	-k
-m	-n	-ŋ
	-r	

VOWELS

Monophthongs			*Diphthongs*		
i , y		u	iu , yu		ui
e , ø	(ə)	o	eu , øu	əu	io
		ɑ			ɑi iɑ uɑ ɑu

- Only monophthongs occur with finals.

TONES

mɑ^{55}	high level
mɑ^{35}	high rising

- In [JZ-CNMenba], tones are represented by Chao tone letters, not numbers.
- The high level tone has a high falling variant.
- The high level tone usually occurs with voiceless initials, and the high rising tone usually occurs with voiced initials.

DAMU

Data Source: Ouyang

Inventory: J. Sun 1993a [JS-HCST] (pages 497-498)
Sun's data is from Ouyang 1985 [JZ-Luoba], and his own personal communication with Ouyang. He refers to Ouyang's data as "Damu OY".

Secondary Sources: J. Sun 1993a. [JS-HCST]
J. Sun 1993b. [JS-Tani]

INITIALS

p	pr	t	ts	tʂ	tɕ	c	k	ʔ
pʰ		tʰ	tsʰ	tʂʰ	tɕʰ		kʰ	
b	br	d	dz	dʐ	dʑ	ɟ	g	
			s			ɕ	x	
			z				ɦ	
m		n			ɳ		ŋ	
m̥							ŋ̊	
w			l	r		j		
			l̥					

RHYMES

(ɿ)	(ʅ)				
i , y		ɯ , u	iː , yː		ɯː , uː
e , ø	ə	o	eː , øː	əː	oː
	a			aː	
iu		ui	yʔ		ɯʔ , uʔ
ei	əɯ	yo	eʔ , øʔ		oʔ
	iaː			iaʔ aʔ	
ip		up	im , ym		um
ep , øp	iəp yəp əp		em	iəm əm	om
	iap ap			iam am	
it , yt		ut	in , yn		ɯn , un
et , øt	ət uet		en , øn	ən	on
	at			an	

ik ɯk , iuk yuk uk ek iək ək ok ak	iŋ ɯŋ , yuŋ uŋ eŋ iəŋ əŋ oŋ iaŋ aŋ
ir , yr ɯr , ur er , ør iər ər or iar ar	

- Vowel length is contrastive only in open syllables.
- /ɳ/ and /ɭ/ are found only in Tibetan loanwords.

DARANG[1]

Data Source: Sun et al. 1991 [ZMYYC] #49
Sun et al. 1980 [SLZO-MLD]

Collected in Xiani Village, Ba'antong Town, Xiacha'ou District, Cha'ou County, Tibet.

Inventory: Sun et al. 1991 [ZMYYC] #49 (pages 337-341)
Sun et al. 1980 [SLZO-MLD] (pages 174-175)

INITIALS

Simple

p	t	ts	(tʂ)	tɕ	k
ph	th	tsh	(tʂh)	tɕh	kh
b	d	dz		dʑ	g
(f)		s	(ʂ)	ɕ	x
m	n			ȵ	ŋ
m̥	n̥				ŋ̊
w	l		ɹ	j	
	ɬ				

Cluster

pl	phl	bl	ml	kl	khl	gl	
pɹ	phɹ	bɹ	mɹ	kɹ	khɹ	gɹ	xɹ

- /f tʂ tʂh ʂ/ occur mainly in loans.
- Velar initials /k kh g ŋ x/ before /i/ are realized as corresponding palatals /c ch ɟ ɲ ç/.
- Zero-initial is realized as [ʔ].

RHYMES

i	ɯ	u			iɯ	iu	
e	ɑ	o		ie	iɑ	io	
ui	ɯi	uɯ	ɯu	ɑi	ɑɯ	ɑu	
ue	uɑ			iɑi	uɑi	iɑɯ	uɑɯ	iɑu

[1]Called *Deng (Darang)* in [ZMYYC], [SLZO-MLD].

im iɯm ɯm em ɑm	in ɯn un
iŋ ɯŋ eŋ ɑŋ oŋ	iɯŋ ieŋ ueŋ iɑŋ uɑŋ ioŋ

- /i/ is realized as [ɪ] after sibilant initials /ts tsh dz s /.
- /e/ and /o/ are realized as [E] and lower [o] respectively.
- /ɑ/ is realized as [a] when occurring alone as the rhyme.
- Syllabic nasals /m̩ n̩ ŋ̩/ may also occur as a rhyme. They may only occur by themselves or be preceded by homorganic voiceless nasals /m̥̩ n̥̩ ŋ̩̊/.

TONES

mɑ^{55} high level
mɑ^{53} high falling
mɑ^{35} high rising
mɑ^{31} low falling

- The low falling tone is weakened (neutral) when occurring in the first syllable of disyllabic words.

DEURI[1]

Data Source: W. B. Brown 1895 [WBB-Deuri]

The author gathered the data "[w]ith the help of an intelligent Deori muharrir, who has some knowledge of Bengali grammar" and on "occasional visits to the Deori settlement" (p. viii).

Inventory: Extracted from W. B. Brown 1895 [WBB-Deuri] (pages 4-5)

CONSONANTS

p	t		k	
	th	ch	kh	
b	d	j	g	
	dh			
f	s	sh		h
	(z)			
m	n	ny	ng	
	l r	y		

- Brown writes that /ch/ "is sounded as in *ch*ur*ch*."
- Brown writes that [z] does not seem to occur, but there is one instance in his vocabulary.

VOWELS

Monophthongs			*Diphthongs*	
i í		u ú		
e é	ă	o ó	ei	oi
a	á	å	ai	au

- According to Brown's description, the vowels have the following approximate values:

Brown:	ă	å	a	á	e	é	i	í	o	ó	u	ú
IPA:	ə	ɒ	æ	ɑ	ɛ	e	ɪ	i	ɔ	o	ʊ	u

- Brown writes <-ñ> to indicate "a faint nasalization of the preceding vowel. This sound is rather difficult to distinguish, and seems to be often dropped; thus 'añ' I, 'á-chapí' 'from me'."
- <ui> represents a sequence of two vowels, not a diphthong.

---

[1]Called *Chutiya* in [WBB-Deuri].

- "When 'aï', 'oï', 'eï' are written with a diæresis, the vowels are to be separately sounded."
- "'iy' used in the termination of the present tense in some verbs denotes the combination of the root ending in 'i' with the tense termination 'i'."

DHIMAL

Data Source: King 1994 [JK-Dh]

Inventory: King 1994 [JK-Dhimal]

CONSONANTS

Initials

p	t		c	k
ph	th			kh
b	d		j	g
bh	dh		jh	gh
	s		sy	h
v				
m	n			
mh	nh			
w	l	r	y	
wh	lh	rh	yh	

- /c j jh/ are affricates.
- "Some retroflex phonemes also exist in words borrowed from Indo-Aryan languages, but are used irregularly."
- "Traces of a former aspirated voiceless affricate /ch/ can be found in the pronunciation of some Dhimal speakers."
- "The aspirated voiceless velar plosive /kh/ has a velar fricative allophone of [x]."

Medials

-w- -y-

Finals

-q

-m -n -ŋ

-l -r

VOWELS

Monophthongs		*Diphthongs*	
i	u	ui	
e	o	eu	oi
a		ai	au

- "There are five vowel phonemes in Dhimal (the schwa being rare) and five diphthongs. With the exception of the glottal stop, vowels become lower or more lax in closed syllables, especially those ending with a nasal. Diphthongs occur only in open syllables."
- "Nasalization of vowels, although common enough, is not a distinctive feature of Dhimal." It is marked by <˜> over the vowel.

DUMI

Data Source: Driem 1993 [SVD-Dum]
Data collected by the author from several native speakers of the language.

Inventory: Driem 1993 [SVD-Dum] (pages 49-59)

CONSONANTS

p	t		(t̪)	k	ʔ
ph	th		(t̪h)	kh	
b	d	dz	(d̪)	g	
bh	dh	(dzh)	(d̪h)	gh	
		s			h
m	n			ŋ	
w	l	r	y		

- /t th d dh/ are dentals, but some dialects have alveolar articulation.
- /t̪ d̪ dzh d̪h/ are restricted to Nepali loans and proper names; /t̪h/ occurs primarily in these contexts as well.
- /p t k/ are realized as [p t̚ k] initially; finally they are unreleased and accompanied by a simultaneous glottal stop, except in the sequence /t/ + /s/.
- /ŋ/ is palatalized before /s/.
- /r/ is a lamino-alveolar fricative trill "phonetically identical to Czech ř" in careful speech, but with less friction in faster speech (p. 54).
- Simple /s/ is realized as [ʃ] or [ɕ] before high vowels and glides; before /e/ and /eː/ there is variation between [s] and [ʃ]/[ɕ].
- /ts/ is considered a cluster. It is the only initial cluster in the language. The behavior of /s/ in this cluster is similar to that of simple /s/.
- /dz/ is a voiced lamino-alveopalatal affricate usually realized as [dʒ] or [dʑ]; it is realized as [dz] before /ə œ/.
- /h/ is an energetically articulated voiced glottal fricative [ɦ].

VOWELS

Monophthongs

i	iː		ɨ	u	uː
e	eː			o	oː
		œ	ə		
			a	aː	

Diphthongs

eːy		oy
	əy	oːə
	ai	

- The articulation of /ɨ/ varies from [ɨ] to [ɯ]; this phoneme also has a front rounded allophone [y] after the palatal glide /y/ [j].
- /e/ and /eː/ are usually realized as [ɛ] and [ɛː], respectively; they have higher allophones [e] and [eː] before /-l -r -w -s/ and in stressed open syllables.
- /o/ is realized as [ɔ].
- /oː/ is realized as [oː] or [ɔː] depending on the environment.

STRESS

NOTES

- In general, verbs and deverbatives are stressed on the root; nouns and other parts of speech are stressed on the first syllable. When stress is not predicatable, it is marked by <' > before the stressed syllable.

DZONGKHA

Data Source: Mazaudon 1985 [MM-Dzong]

Data collected from Bhutanese speakers by the author and Boyd Michailovsky in January-February 1977.

Inventory: Mazaudon 1985 [MM-Dzong] (pages 151-152)

CONSONANTS

Initials

p	pɟ	t	ts	ʈ		c	k
ph	pɟh	th	tsh	ʈh		ch	kh
b	bɟ	d	dz	ɖ		ɟ	g
bh	bɟh	dh	dzh	ɖh		ɟh	gh
			s		ɕ		
			z		ʑ		
			zh		ʑh		
m		n				ɲ	ŋ
w		l	r			j	
		lh					

VOWELS

Monophthongs			*Diphthongs*		
i	y	u	iu		
ẹ					
e	ø	o	eu		ou
	a		ai	au	aːu

- Vowel length and nasalization are contrastive. Nasalization is marked by <~> over the vowel; length is marked by <ː> following the vowel.
- The phonemic status of [ẹ] is unclear.

TONES

ma	low
'ma	high

- As tone is predictable for obstruent-initial syllables (see below), it is indicated only on syllables where a contrast exists: vowel-initial or sonant-initial syllables.
- Mazaudon notes that more work must be done on tone in this language.
- Mazaudon only marks the high/low tone contrast in this work. However, she notes that a melodic contrast on long open syllables exists.

NOTES

- Mazaudon divides initial consonants into classes, each class with a particular tone. Thus, tone is predictable for all syllables except those beginning with sonants or with vowels.

CLASS	CONSONANT	TONE
I	Voiceless consonants	High
II	Voiceless asp. consonants	High
III	Voiced consonants	Low
IV	Voiced asp. consonants	Low
Sonant	Nasals and Glides	H/L
Sonant	/lh/	High

- The voiced aspirated series is pronounced either as plain voiced with a low tone or as voiceless aspirates with a low tone depending on the dialect.
- Dialectal variation between low-toned /c̣ z̧/ is represented by /z̧h/ and variation between low-toned /s z/ is represented by /zh/.

❖

ERGONG

Daofu

Data Source: Dai 1989 [DQ-Daofu]
Data collected by Ma Erji.

Inventory: Dai 1989 [DQ-Daofu]

INITIALS

p		t	ts	tʂ	tɕ	k	q	(ʔ)
ph		th	tsh	tʂh	tɕh	kh	qh	
b		d	dz	dʐ	dʑ	g		
f	ɸ		s	ʂ	ɕ	x		h
			sh		ɕh	xh		
v	β		ɮ	ʐ	ʑ	ɣ		ɦ
m		n			ɳ	ŋ		
w		l	r		j			
		ɬ						

- The glottal stop [ʔ] only occurs as a preglottalized element of some initials.

RHYMES

Open

Monophthongs

i		u
e , ø	ə	o
ɛ		ɔ
	a	ɑ

Diphthongs

ui		
ei		uo ou
		uɑ ɑu

Closed

in	uŋ
en eŋ	oŋ
	ɑm ɑn ɑŋ

❖ ❖ ❖ ❖ ❖

ERGONG

Daofu

Data Source: Sun et al. 1991 [ZMYYC] #14
Collected in Dasang District, Danba County, Ganzi Prefecture, Sichuan.

Inventory: Sun et al. 1991 [ZMYYC] #14 (pages 210-218)

INITIALS

Simple

p	t	ts	tʂ	tɕ	k	q	
ph	th	tsh	tʂh	tɕh	kh	qh	
b	d	dz	dʐ	dʑ	g		
(f)		s	ʂ	ɕ	x	χ	
		sh		ɕh			
v	z	ʒ	ʐ	ʑ	ɣ	ʁ	ɦ
m	n			ɳ	ŋ		
w	l			j			
	ɬ						

- In addition to the simple initials, there are over 200 initial clusters of two or three simple consonants.
- /ʐ/ is realized as such when occurring as an initial by itself; elsewhere it may alternate with [r].
- /f/ occurs mainly in Chinese loans.
- Glides /w j/ involve some friction; /j/ is actually close to [ɣi].
- Zero-inital is realized as [ʔ].

RHYMES

ɿ					
i , (y)	ɯ , ʉ	u	yi	iɯ yɯ	
e , ø	ə	o	ie ye		io
ɛ	a	ɔ	iɛ	ia	iɔ

ui uɯ ue uə uɛ ua	ɯu ɛi ɛu ai au
uɛi iau iɔu	ɯɹ əɹ ɛɹ iaɹ aɹ uaɹ
il ɯl əl ɛl al	 əm ɛm iam am
in , (yn) un en uen ən uən iɛn yɛn ɛn uɛn an	iŋ uŋ əŋ ioŋ oŋ iaŋ uaŋ ɔŋ uɔŋ

- /y/ occurs mainly in Chinese loans.
- /ɳ/ is realized as [ɻ] after retroflexed fricatives and affricates.
- /ʉ/ after bilabials is close to [y].
- The retroflexed vowels, in addition to being rhotacized, carry an [-ɹ] offglide as well.

TONES

- Tone does not appear to be contrastive in Ergong. However, all monosyllabic words are consistently pronounced in one of two high tones, [^{55}] or [^{53}]. Other tones occur in polysyllabic compounds. Since they are not phonemic, tones are not transcribed.

❖

ERSU

Ganluo

Data Source: Sun et al. 1991 [ZMYYC] #18

Collected in Zeluo Town, Yutian District, Ganluo County, Liangshan Prefecture, Sichuan.

Inventory: Sun et al. 1991 [ZMYYC] #18 (pages 231-235)

INITIALS

Simple

p	t	ts	tʂ	tʃ	tɕ	k	
ph	th	tsh	tʂh	tʃh	tɕh	kh	
b	d	dz	dʐ	dʒ	dʑ	g	
f		s	ʂ	ʃ	ɕ	x	h
v		z	ʐ	ʒ	ʑ		
m	n				ȵ	ŋ	
w	l	r			j		
	ɬ						

- /tʂ tʂh dʐ/ approximate the corresponding stops [ʈ ʈh ɖ].
- In certain words [r] and [ʐ] may occur in free variation.
- /w/ sometimes involves velar friction, pronounced close to [ɣu].
- Velar sounds /k kh g x ŋ/ before /i/ become corresponding palatals [c ch ɟ ç ɲ]. In certain words, these velars are actually pronounced close to uvulars, especially in the speech of the older generation.
- Voiced stops and affricates are close to voiceless stops with breathy release.
- The syllabic /ŋ/ has labialized coloring, pronounced close to [ŋ^{w}].
- Zero-initial is realized as [ʔ].

Cluster

nph	nth	ntsh	ntʂh	ntʃh	ntɕh	nkh
nb	nd	ndz	ndʐ	ndʒ	ndʑ	ng
hp	ht	hts	htʂ	htʃ	htɕ	hk
ps	pʂ	phs	phʂ	bz	bʐ	
nphs	nphʂ	nbz	nbʐ			
hps						

RHYMES

ɿ i , (y) u ɛ ə o a ɑ	ui iɛ yɛ uɛ io iɑ uɑ
ɛi əi əu ou ɑi ɑu	iəu iɑu uɑi
əɹ aɹ uaɹ	

- Nasalized vowels do occur, but mostly in Chinese loanwords. Nasalization is marked by <˜> over the vowel.
- [ɛ] may occur in free variation with [ə] in certain words.
- /a ɑ o/ are actually closer to [æ ʌ ʊ] respectively.
- /u/ is significantly labialized after bilabials. It is realized as [ʮ] after velars, and as [u] elsewhere.
- /ə/ approximates [ɯ] when occurring alone as the rhyme.
- /u/ after /m ŋ/, and /i/ after /ȵ/, are often elided.
- /y/ occurs mainly in Chinese loans.
- Constriction of vowels is not contrastive, but certain words do sound constricted.

TONES

ma[55] high level

ma[33] mid level

- In connected speech, the high level and mid level tones usually become high falling and mid rising respectively.
- In Chinese loans, mid level usually becomes low falling.

GALLONG

Data Source: Weidert 1987 [AW-TBT]

The informant was Mr. Gimli Bomjen of Along village of Subansiri district in Arunachal Pradesh. The Bomjen clan is originally from Nari village (p. 494, n. 11).

Inventory: Weidert 1987 [AW-TBT] (pages 219-221)

CONSONANTS

Initials

p	t	tš	k	
b	d	dž	g	
	s			h
m	n	ñ	ŋ	
w	l	r	y	

Finals

-p	(-t)		-k
-b			-g
	(-s)		
-m	-n		-ŋ
	(-l)	-r	

- Intervocalically, [s] varies freely with [h].
- Syllable-final stops assimilate to [-t] if followed by [t tš dž].
- Final lateral /-l/ and sibilant /-s/ result from a synchronic root reduction process in which disyllabic roots lose the final vowel.
- In verb stems, final voiced obstruents /-b -m/ may alternate with homorganic nasals /-m, -ŋ/.

VOWELS

i iː	ɯ ɯː	u uː
e eː	ɤ ɤː	o oː
	a aː	

TONES

ˆma slight falling
ˋma steep falling
¯ma high level

❖ ❖ ❖ ❖ ❖

GALLONG

Data Source: Das Gupta 1963 [KDG-IGL]

Inventory: Das Gupta 1963 [KDG-IGL] (pages 1-3)

Note: Transcription normalized in STEDT database.

CONSONANTS

Initials

p	t	c	k	
b	d	ɟ	g	
	s			h
m	n	ɲ	ŋ	
	l	r y		

Finals

-p	-t	-k
-m	-n	
	-r	

- /c ɟ ɲ ŋ/ are transcribed <c j ñ ng> in [KDG-IGL].
- /r-/ tends to be palatalized.
- [-ŋ] does not exist in Gallong, except secondarily as a result of phonetic assimilation (e.g. <rok-ne> > [roŋ-ne] ‘hen’).

VOWELS

i iː	ɯ ɯː	u uː
e eː	ɤ ɤː	o oː
	a aː	

- /ɤ ɯ/ are transcribed <é í> in [KDG-IGL].

❖

GARO

Data Source: Burling 1961 [RB-GG]
Fieldwork in the Garo Hills, Assam, India, 1954-1956.

Inventory: Burling 1961 [RB-GG] (pages 1-9)
Burling 1959 [RB-PB] (pages 434-435)

CONSONANTS

Simple Initials

p	t	c	k	
b	d	j	g	
	s			h
m	n			
w	r			

Initial Clusters

pr	tr	cr	kr	br	dr	jr	gr
sp	st	sr	sk				

- /g/ is further back than in English and in word-initial position it is often spirantized ([RB-GG] pp. 2-3).
- In initial position, /p t k/ are slightly aspirated and more tense than the voiced series ([RB-GG] p. 3).
- /s/ is intermediate between English /s/ and /š/. /c j/ are affricates in the same position. and /r/ is a flap ([RB-PB], p. 435; [RB-GG], p. 3).
- Initially or in an initial cluster, /r/ is a voiced alveolar flap, or a very brief trill. Word-medially, when followed by a vowel, it is a voiced lateral [l]. When word-final or followed by another consonant, the two allophones are in variation ([RB-GG] pp. 3-4; [RB-PB] p. 435).

Simple Finals

-p	-t	-k	-’
	(-s)		
-m	-n	-ŋ	
	-r		

Final Clusters

-’m -’n -’ŋ -’r

- /-s/ is found syllable-finally only in certain loanwords.
- Glottal finals do not occur word-finally ([RB-GG], p. 8).
- Phonemically, /-’m -’n -’ŋ -’r/ are final clusters, but phonetically they are single glottalized consonants ([RB-GG]; pp. 4-5, [RB-PB], p. 435).

VOWELS

i u

e ə o

a

- /u/ is a high central vowel, moderately rounded ([RB-GG], p. 1).
- /i/ has a high front allophone in open syllables, and a lower, farther back allophone in closed syllables ([RB-PB], p. 435).
- Burling analyzes sequences of vowels as distinct syllables, even though they are often blurred in rapid speech ([RB-GG], pp. 5-6).

GASU

Data Source: Wu 1994 [WZL-Gasu]
Collected in Balong, Guangnan County, Wenshan Prefecture, Yunnan.

Inventory: Wu 1994 [WZL-Gasu] (pages 39-41)

CONSONANTS

Initials

p	pl		t	ts	tʂ	tɕ	k	kl
p‘	p‘l		t‘	ts‘	tʂ‘	tɕ‘	k‘	k‘l
b	bl		d	dz	dʐ	dʑ	g	gl
f		θ		s	ʂ	ɕ	x	
v		ð		z	ʐ	ʑ	ɣ	
m	ml		n			ɳ	ŋ	ŋl
			l					

- Zero-initial is realized as [ʔ].
- /θ/ and /ð/ are pronounced with lateral aspiration; they are close to lateral fricatives [θɬ] and [ðɮ].
- Velar initials /k k‘ g/ become [c c‘ ɟ] before /i/ and [q q‘ ɢ] before /ɑ/ and /o/.
- /f/ is mostly found in Chinese loans.

Finals

-ŋ

- /ɯ u̱/ are the only vowels that can combine with final /-ŋ/ in native words.

VOWELS

Monophthongs

Unconstricted		*Constricted*	
i	ɯ , u	i̱	ɯ̱ , u̱
ɪ		ɪ̱	
e	o	e̱	o̱
ʌ	ɑ	ʌ̱	ɑ̱

Diphthongs

Unconstricted	*Constricted*
ɯi	ɯi̱
ie ɯe	ie̱ ɯe̱
ɯɑ ɯɑ	ɯɑ̱ ɯɑ̱

- The following thirteen rhymes are found only in Chinese loanwords: /ɛ iᴀ io ɑu ui uɛ ɛn iŋ ᴀŋ oŋ ieŋ iᴀŋ uᴀŋ/.

TONES

mɑ^{55} mɑ^{33} mɑ^{13} mɑ^{31}

- The /^{55}/ tone is pronounced closer to [^{44}].
- In syllables with constricted vowels, tones /^{13}/ and /^{31}/ become [^{35}] and [^{51}] respectively.

GAZHUO

Data Source: Dai et al. 1987 [DLF-Gazhuo]
Dai et al. 1991 [DHFRL]
Dai 1989 [DQ-Gazhuo]

[DLF-Gazhuo]: Collected in five villages (including Baige) in Hexi District, Tonghai County, Yunnan.
[DHFRL]: Collected in Baige Village, Hexi District, Tonghai County, Yunnan.

Inventory: Dai et al. 1987 [DLF-Gazhuo] (pages 151-153)
Dai et al. 1991 [DHFRL] (pages 249-252)
Dai 1989 [DQ-Gazhuo]

CONSONANTS

Initials

p	t	ts	tɕ	k
ph	th	tsh	tɕh	kh
f		s	ɕ	x
v		z	j	ɣ
m	n		ɳ	ŋ
w	l			

- /j/ is considered the voiced counterpart of /ɕ/ ([DLF-Gazhuo] p. 151).
- The alveolar affricates and fricatives are sometimes pronounced as retroflexes ([DLF-Gazhuo], p. 152; [DHFRL], p. 250).
- /m ŋ/ can constitute tone-bearing syllables, in which case they are transcribed <m̩ ŋ̩> [DLF-Gazhuo] or simply <m ŋ> [DHFRL]; [DQ-Gazhuo].

VOWELS

Monophthongs		*Diphthongs*	
ɿ	ʏ		
i	ɯ	(oi)	
ɛ	ɤ , o	iɛ (oɛ)	oɤ , (io)
a		ia ao	

Triphthong

(iao)

- Syllabic /v/ is transcribed as <ɣ̩> in our representation of [DLF-Gazhuo] and [DQ-Gazhuo].
- /ɳ/ is transcribed <ɪ> in [DHFRL].
- /iao oi oɛ io/ mostly appear in Chinese loanwords ([DLF-Gazhuo], p. 153).
- Some words show alternation between /i/ and /ɛ/ ([DLF-Gazhuo], p. 153; [DHFRL], p. 251).

TONES

ma^{55}	high level
ma^{44}	mid high level
ma^{33}	mid level
ma^{35}	high rising
ma^{24}	mid rising
ma^{323}	falling rising
ma^{53}	high falling
ma^{31}	low falling

- Syllables in the high level tone are slightly constricted.
- The mid high level tone is uncommon.
- Words in the low falling tone are generally realized with a final glottal stop.

GEMAN[1]

Data Source: Sun et al. 1991 [ZMYYC] #48
Sun et al. 1980 [SLZO-MLD]

Collected in Saqiong Village, Ba'antong Town, Xiaocha'ou District, Cha'ou County, Tibet.

Inventory: Sun et al. 1991 [ZMYYC] #48 (pages 342-346)
Sun et al. 1980 [SLZO-MLD] (pages 232-239)

INITIALS

Simple

p	t	ts	(tʂ)	tɕ	k
ph	th	tsh	(tʂh)	ch	tɕh
b	d	dz		dʑ	dʑ
(f)		s	(ʂ)	ɕ	x
m	n			ȵ	ŋ
w	l		ɹ	j	
	(ɬ)				

Cluster

pl	phl	bl	kl	khl	gl	
pɹ	phɹ	bɹ	kɹ	khɹ	gɹ	xɹ
mph	nth	ntsh	ntɕh	ŋkh		
mphɹ	ŋkhɹ	mphl	ŋkhl			

- /f ɬ tʂ tʂh ʂ/ occur mainly in Chinese or Tibetan loans.
- The voiced stops and affricates /b d dz dʑ g/ are phonetically voiced prenasalized stops.
- Zero-initial is realized as [ʔ].

RHYMES

i	ɯ	u	ɯi	ui
e		o	ăi	oi ioi
	ɑ		iɑi ɑi uɑi	

[1]Called *Deng (Geman)* in [ZMYYC], [SLZO-MLD].

iu ɯu ău ɑɯ iɑu ɑu	io iɑ uɑ
ip ɯp iup up ep ăp iop iɑp ɑp	im ɯm um em ăm iom om ɑm iam
it ɯt uɯt ut et ăt ot iɑt ɑt uɑt	in ɯn uɯn un en ăn on iɑn ɑn
ik ɯk ɯuk uk ăk ok iak ɑk	iŋ ɯŋ ɯuŋ uŋ eŋ ăŋ ăuŋ ioŋ oŋ iɑŋ ɑŋ ɑuŋ
iɯl ɯl uɯl iul ul ăl ol ɑl	

- /i/ is realized as [ɪ] after /ts tsʰ dz s/.
- /ɑ/ is realized as [a]. Vowel length is contrastive only with this vowel, and only in open syllables. Short /a/ is marked <ă>.

TONES

ma^{55} high level
ma^{53} high falling
ma^{31} low falling
ma^{35} high rising

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GUIQIONG

Data Source: Sun et al. 1991 [ZMYYC] #17
Sun Hongkai 1991 [SHK-GuiqQ]

Collected in Maiben Village, Yutong District, Kangding County, Ganzi [Garzê] Prefecture, Sichuan.

Inventory: Sun et al. 1991 [ZMYYC] #17 (pages 227-230)
Sun Hongkai 1991 [SHK-GuiqQ]

CONSONANTS

Simple Initials

p	t	ts	tʂ	tʃ	tɕ	k	q
ph	th	tsh	tʂh	tʃh	tɕh	kh	qh
b	d	dz	dʐ	dʒ	dʑ	g	
f		s	ʂ	ʃ	ɕ	x	
v		z	ʐ	ʒ	ʑ	ɣ	
m	n				ɳ	ŋ	
w	l				j		
	ɬ						

Initial Clusters

np	nt	nts	ntʂ	ntʃ	ntɕ	nk
nph	nth	ntsh	ntʂh	ntʃh	ntɕh	nkh
nb	nd	ndz	ndʐ	ndʒ	ndʑ	ng

- Older speakers retain the distinction between the alveolo-palatal and retroflex series; younger speakers do not.
- Older speakers retain the distinction between the velar and uvular series; younger speakers have both series in free variation.
- The zero-initial is realized as [ʔ].
- In clusters, <n> represents a nasal homorganic with the following obstruent.

VOWELS

Monophthongs

Oral			*Nasal*	
ɿ				
i , y	ʉ	u	ĩ , ỹ	ũ
e , ø		o	ẽ	õ
ɛ		ɔ	ɛ̃	ɔ̃
		ɑ		ɑ̃

Diphthongs

Oral		*Nasal*	
yi ui			
ie ue	io	uẽ	
uɛ	iɔ uɔ	iɛ̃ yɛ̃ uɛ̃	uɔ̃
	uɑ		iɑ̃ uɑ̃

TONES

ma[55] high level
ma[33] mid level
ma[35] high rising
ma[53] high falling

- The mid level tone is sometimes realized as a low falling tone.

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GURUNG

Ghachok

Data Source: Glover 1972 [SIL-Gur]
Hale 1973 [AH-CSDPN]

Hale's word list is from Deu Bahadur Gurung, Warren Glover and Jessie Glover. The data is from Ghachok, six miles Northwest of Pokhara in Kaski District.

Inventory: Glover 1972 [SIL-Gur]
Hale 1973 [AH-CSDPN] (pages 13-14), from [GLO1969] as revised in [GLO1970b], [GLO1970c], [HG1970]

Secondary Sources: [JAM-Ety] (from [AH-CSDPN])

CONSONANTS

p	t	T	c	k
ph	th	Th	ch	kh
b	d	D	j	g
m	n			ng
	s			
w	l	r	y	
	kl			

- /T Th D ng/ are transcribed <ʈ ʈʰ ɖ ŋ> in [SIL-Gur].
- <h> representing aspiration is transcribed <ʰ> in [SIL-Gur].
- The cluster /kl/ is phonetically a voiceless lateral [ɬ]. Glover analyzes it as a cluster because of distributional and comparative considerations.
- The palatal series /c ch j/ are affricates.

VOWELS

i į	u ų
e ę e:	o ǫ o:
ā ā:	

- <◌̨> indicating nasalization is transcribed <◌̃> in [SIL-Gur].
- /ā/ is transcribed <a> in [SIL-Gur].
- All vowels are nasalized when contiguous to a nasal consonant. Nasalization is also contrastive for all vowels except /ā/.

- Voice quality (breathy-clear) is contrastive for all vowels, and breathy voice is represented by <h> following a vowel. The breathy-clear contrast has been observed only on the first syllable of a word (but see p. 14 for two exceptions to this rule). Aspirated voiceless stops do not occur before breathy vowels. Voiced stops do not occur in initial syllables before clear accented vowels.

ACCENT

- Accent is indicated by <q> following the vowel. In general, a word may have a maximum of one accented syllable.

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GURUNG

Ghachok

Data Source: Mazaudon 1994 [MM-Thesis]
Mazaudon 1978 [MM-K78]

Inventory: Mazaudon 1994 [MM-Thesis] (pages 30-34 of Volume 2)
Mauzadon's phonological information is from [GLO1977], but she uses a different transcription based on a different analysis of the data.

CONSONANTS

Simple Initials

p	t	ts	ʈ		k	
pʰ	tʰ	tsʰ	ʈʰ		kʰ	
b	d	dz	(ɖ)		g	
	s			ɬ		(h)
m	n				ŋ	
w	l	r		j		

- /ɬ/ is a palatalized fricative lateral.

Initial Clusters

pw	pʰw	mw	tsw	tsʰw	dzw	ʈw	kw	kʰw	ŋw
pl	pʰl	bl	ml						
pr	pʰr	br	mr	kr	kʰr	gr	(ŋr)		
pj	pʰj	bj	mj	tsj	tsʰj	dzj	sj	kj	kʰj
gj	ŋj								
pa̲	pʰa̲	ma̲	tsa̲	tsʰa̲	dza̲	ka̲	kʰa̲		
tsjw	tsʰjw	sjw	kjw	ŋjw					

- The initial clusters /br- bl-/ occur only in the second syllable of dissyllabic words.
- The /ŋr-/ cluster is rare and seems to occur only in few onomatopoeic words.

Finals

-b	-d				
					(-h)
-m	-n			-ŋ	
	-l	-r			

- /-r/ occurs frequently as a final, while /-l/ occurs less frequently.
- /-b -d -m -n -l -r/ occur as apparent syllable-final consonants, but are in fact elided suffixes. Thus they never occur phrase-finally (except in imperatives).
- <-m -n -ŋ> can occur word-internally before homorganic consonants.
- The phonemes /h ɖ/ only occur in loans from Nepali.

VOWELS

Monophthongs

i ĩ		u ũ	
e ẽ	a (ã)	o õ	
	aː ãː		

Diphthongs

ae oe

- /a/ is realized as [ʌ].
- Nasalized /ã/ is only found in one example: <²nã> ‘Take it!’ (in contrast with <¹na> ‘nose’).
- The length opposition between /aː/ and /a/ is found only in the initial syllable of a word.

TONES

[1]ma high, clear (unaccented)
[2]ma high, clear (accented)
[3]ma low, murmured (unaccented)
[4]ma low, murmured (accented)

- All words in which voiced initials occur with high tone are loans from Nepali.

RGYALRONG[1]

Zhuokeji/lCog-rtse

Data Source: Lin 1993 [LXR-Jiarong]
Collected in Zhuokeji Town, 8 kilometers from Ma'erkang, seat of Aba Prefecture.

Inventory: Lin 1993 [LXR-Jiarong] (pages 38-67)

INITIALS

Simple

p	t	ts	tʂ	tʃ	tɕ	k	
ph	th	tsh	tʂh	tʃh	tɕh	kh	
b	d	dz	dʐ	dʒ	dʑ	g	
f	ɬ	s	(ʂ)	ʃ			h
		z		ʒ			
m	n			ɳ		ŋ	
w	l		r		j		

Cluster

sw	zw	tʃhw	hw			
pl	bl	wl	ɬl	sl	zl	kl
pr	wr	tsr	sr	kr	gr	
phr̥	khr̥					
pj	phj	bj	wj	sj	kj	
pʃ						

- There are 227 possible consonant cluster combinations, which can be divided into three types. First, 172 loosely conjoined clusters consisting of a main consonant and a prefixed consonant—these are often articulated with an epenthetic schwa. Second, 26 tightly conjoined clusters consisting of a stop, affricate, or fricative initial followed by a flap, lateral, or glide (these are listed in the cluster chart above). Third, 29 loosely conjoined triple clusters consisting of a main cluster and prefixed consonant—again often articulated with an epenthetic schwa.
- [dz dʐ dʒ] do not appear as simple initials, but only as components of cluster initials.

---

[1]Called *Jiarong* in [LXR-Jiarong]; *Jiarong (Suomo)* in [ZMYYC]; *rGyarong* in [YN-HSJVS].

- /f s/ are borrowed from Chinese. They are not original to the rGyalrong sound system, but have become integrated into it in the last few decades. They are firmly embedded in the phonological system of young speakers. /f/ is often pronounced somewhat bilabialized, halfway between [f] and [ɸ].
- Zero-initial is realized as [ʔ].

RHYMES

i , (y)		u			(iu iou) ui
e	ə ɘ	o	(ie ye) ei	əi	(io)
	ɐ			(iɐ yɐ) ɐi	
	a			(ia)	
			is		us
	uə əu	ou	es	əs	os
	uɐ			ɐs	
	ua au			as	
		ul			ur
	əl	ol	er	ər	or
	ɐl			ɐr	
	al			ar	
ip					
ep	əp	op	em	əm	om
	ɐp			ɐm	
	ap			am	
		ut	in , (yn)		un
et	ət	ot	(ien) en	ən uən	on
	ɐt uɐt			(iɐn yɐn) ɐn	
	at uat			an uan	
ik		uk			uŋ
ek	ək	ok	eŋ	əŋ	oŋ
	ɐk			ɐŋ	
	ak uak			(iaŋ) aŋ uaŋ	

- When pronounced lightly, /-r/ is often devoiced to [r̥] = [ʂ].
- The vowel /ə/ is often dropped When in close juncture with a following syllable, this may create a clustered consonant. For example, <kə-mə-tɕa> -> [kə-mtɕa] ‘many’. In other cases, the orphaned initial may become a final consonant of the preceding syllable, as in <no mo tə-pu> -> [no mot-pu] ‘Are you doing it?’.

- /i/ is [ɪ].
- /y/ has been borrowed into the system from Chinese, but also occurs in a few native words as an allophone of medial /u/ before front vowels.
- Diphthongs occur with both onglides and offglides. Those with onglide /i/ or /y/ appear only in Chinese borrowings. A single triphthong, /iou/, appears also, but only in Chinese loanwords.

TONES

- "Although Jiarong syllables show pitch differences, the functional load of tonemes is minimal. For this reason Jiarong has been described as a toneless language ... but there are a small number of lexical items which can only be distinguished by tone, and tones play a grammatical role in distinguishing tenses" (p. 65). Tones are not marked.

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RGYALRONG

Zhuokeji/lCog-rtse

Data Source: Nagano 1984 [YN-HSJVS]
Two informants, both from lCog-rtse, living in India (pages 7-8).

Inventory: Nagano 1984 [YN-HSJVS] (pages 15-17)

SYLLABLE CANON

$(C)C_i(G)V(C_f)(s)$

CONSONANTS

p	t	ts	tr	c	k	ʔ
ph	th	tsh	trh	ch	kh	
b	d	dz	dr	j	g	
	s			sy		h
	z			zy		
m	n			ny	ng	
w	l		r	y		

- /sy zy/ are alveopalatal fricatives.
- /tr trh dr/ are "retroflexives."

- "[A]ll the voiced stops and affricates are usually prefixed, except for words which are suspected to be Tibetan loans" (p. 16).
- "In addition, there is a prenasal phoneme to the stops and affricates, /N-/, which assimilates and is rather syllabic. In this sense, this phoneme is contrastive to /m-/ at the prefixing position which never assimilates" (p. 16).

VOWELS

i		u
e	ə	o
	a	

- /i/ is [ɪ].
- /e/ is [ɛ].
- /u/ is [ɯ].

TONES

- Tone is not distinctive although every word has a somewhat fixed pitch pattern.

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RGYALRONG

Zhuokeji/lCog-rtse

Data Source: Sun et al. 1991 [ZMYYC] #12
Zhuokeji of Ma'erkang County, Sichuan.

Inventory: Sun et al. 1991 [ZMYYC] #12 (pages 201-210)

INITIALS

Simple

p	t	ts	tʂ	tʃ	cç	k
ph	th	tsh	tʂh	tʃh	cçh	kh
b	d	dz	dʐ	dʒ	ɟʝ	g
(ɸ)	ɬ	s	(ʂ)	ʃ	(ç)	h
		z		ʒ		
m	n			ɳ		ŋ
w	l		r		j	

- /ɸ ʂ ç/ occur mainly in loans.
- The voiced affricates occur mainly in consonant clusters.
- Zero-initial is realized /ʔ/.
- There are several hundred initial clusters consisting of two or three clustered simple consonants.

RHYMES

i	ə	u		əi əu	ui
ɛ	ɐ	o	ɛi		(ou)
	a			ai	
		(iuo)	is	əs	us
(iɛ)	uɐ		ɛs	ɐs	os
	ia ua			as	
	əl	ul		ər	ur
	ɐl	ol	ɛr	ɐr	or
	al			ar	
ip	əp			əm	
ɛp	ɐp	op	ɛm	ɐm	om
	ap			am	
	ət	ut	in	ən	un
ɛt	ɐt uɐt	ot	(iɛn) ɛn	ɐn	on
	at uat			an uan	
ik	ək	uk		əŋ	uŋ
ɛk	ɐk	ok	ɛŋ	ɐŋ	oŋ
	ak uak			iaŋ aŋ	

- /ə/ becomes [ɿ] after /ts ts s/.
- /iɛ/ is only found in Chinese loans. /ou/ is also mostly found in Chinese loans.
- The triphthong /iuo/ is rare.

TONES

- Two tones occur: [^{44}] and [^{42}]. Tones are not marked, since they have only marginal function in the language. Pitch register and contour are often contextually predictable. There are only about a dozen tonally distinguished minimal pairs.

HANI[1]

Lüchun (Dazhai)

Data Source: Li and Wang 1986 [JZ-Hani]
Sun et al. 1991 [ZMYYC] #31
Dai 1989 [DQ-Hani]

Collected in Dazhai, Lüchun County, Yunnan.

Inventory: Li and Wang 1986 [JZ-Hani] (pages 3-9)
Sun et al. 1991 [ZMYYC] #31 (pages 274-276)
Dai 1989 [DQ-Hani]

CONSONANTS

Initials

p	pj	t	ts	tɕ	k
ph	phj	th	tsh	tɕh	kh
b	bj	d	dz	dʑ	g
(f)			s	ɕ	x
			z		ɣ
m	mj	n		ɳ	ŋ
		l		j	

- [JZ-Hani] lists /j/ as a voiced palatal fricative rather than as an approximant.
- /f/ occurs only in Chinese loanwords.
- [ZMYYC] also lists consonants /tj thj lj/, which appear only in Chinese loanwords. [JZ-Hani] and [DQ-Hani] apparently interpret such sequences as consonant followed by [i], thus enriching the inventory of diphthongs (see below).
- In native words, /p pj t ts tɕ k/ occur only with constricted vowels, while their aspirated counterparts /ph phj th tsh tɕh kh/ occur only with unconstricted vowels.

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[1]Broadly speaking, there are three Hani dialects: 1) Haya (spoken by the people with autonyms *Ha*ni and *Ya*ni); 2) Bika (spoken by the people with autonyms *Bi*yue and *Ka*duo); 3) Haobai (spoken by the people with autonyms *Hao*ni and *Bai*hong) [JZ-Hani] (p. 2). If we distinguish more finely, the six autonyms above give us six dialects (i.e. Hani, Yani, Biyue=Pijɔ, Kaduo, Haoni, Baihong).

Dialects are also referred to by the town in which they are spoken. The town name is the most specific dialect referent.

Dialect	Subdialect	County	Town	Other names
Haya	Hani	Lüchun	Dazhai	= "standard Hani" = "Xhani" [ILH-PL]
Haya	Yani	Lüchun	Gelanghe	
Bika	Biyue	Mojiang	Caiyuan	= "Pijɔ" [ILH-PL]
Bika	Kaduo	Mojiang		= "Khatu" [ILH-PL]
Haobai	Haoni	Mojiang	Shuikui	= "Xhɔni" [ILH-PL]

- Zero-initial is realized as [ʔ].

VOWELS

Unconstricted		*Constricted*	
ɿ		ɿ̄	
i	ɯ , u	i̱	ɯ̱ , u̱
e , ø	ɤ , o	e̱ , ø̱	ɤ̱ , o̱
	ɔ		ɔ̱
a		a̱	

- Diphthongs appear only in Chinese loanwords. According to [JZ-Hani] and [DQ-Hani], these are /ie ia iɔ iɤ ue ua/ (p. 6). [ZMYYC] lists only /ue ua/ (p. 275), interpreting the others as monophthongs following palatalized consonants (see above).

TONES

ma^{55}	high level
ma^{33}	mid level
ma^{31}	low falling
ma^{24}	mid rising

- In [JZ-Hani], tones are represented by Chao tone letters, not numbers.
- The mid rising tone occurs primarily in Chinese loanwords.
- The tones of syllables with constricted vowels are pronounced slightly higher than for lax vowels.
- Except for cases of tone sandhi, the high tone does not occur with constricted vowels in native words.

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HANI

Lüchun

Data Source: Hansson 1989 [ILH-PL]

Inventory: Hansson 1982 [ILH-PCAH]

The primary material for [ILH-PCAH] is a wordlist entitled A Short Hani-Chinese Vocabulary *(Kunming 1959) (Hani title: Haqniq pyulniul soqmiav niq pyu hu zzaol e nilgevnei soqhhavq; Chinese title: Hehan duizhao xiao cihui), and a tape of a Lüchun speaker made by Søren Egerod in Kunming in 1981. They are listed separately as*

Written Hani and Spoken Hani, with different transcriptions. Written Hani is transcribed in a pinyin-like orthography developed by the Chinese government. (See the Lisu inventory for [DB-Lisu] for comparison.) Spoken Hani is transcribed in Hansson's "Akha transcription system" (similar to IPA) to facilitate comparison with Akha.

In [ILH-PL], there are two sources of Hani words using different transcriptions as well. One is labelled "Hani W", and is from the Hani-Chinese wordlist mentioned above. The second is labelled "Hani L" (Lüchun Xhani) and is taken from her own fieldwork with a Lüchun dialect speaker in Kunming.

CONSONANTS

Initials

[ILH-PCAH] Spoken Hani; [IHL-PL] Hani L

p	pj	t	ts	tj	k
ph	pjh	th	tsh	tjh	kh
b	bj	d	dz	dj	g
			s	sj	x
			sh	sjh	xh
			z		ɣ
m	mj	n			ŋ
		l		j	

[ILH-PCAH] Written Hani; [IHL-PL] Hani W

b	bi	d	z	j	g
p	pi	t	c	q	k
bb	bbi	dd	zz	jj	gg
			s	x	h
			ss		hh
m	mi	n			ng
w		l		y ~ yi	

- Voiceless consonants are always aspirated in non-laryngealized syllables, and non-aspirated in laryngealized ones ([ILAH-PCAH], p. 76). Thus Written Hani <s x h> represents either [s sj x] or [sh sjh xh] depending on the laryngealization of the syllable. Note that in the other analyses of this dialect (see above), no aspirated fricative phonemes or allophones are indicated.
- Written Hani <yi> is used in place of <y> when necessary to avoid ambiguity. For example, <yiu> is used rather than <yu>, which represents the vowel [ö] (see vowel chart below).

- Written Hani <w> appears only in the syllable <wu> (Spoken Hani [u]), where it represents a zero-initial ([ILH-PCAH], p. 68).

VOWELS

[ILH-PCAH] Spoken Hani; [ILH-PL] Hani L			*[ILH-PCAH] Written Hani; [ILH-PL] Hani W*		
y			i		
i		y , u	i ~ ii		ee , u
ö	ə	o	yu	e	o
ɛ	a	ɔ	ei	a	ao

- Spoken Hani <y> represents [ɿ] and [ɯ], which are in complementary distribution. Written Hani <i> represents Spoken Hani <y> ([ɿ]) after dental affricates and fricatives; otherwise it represents Spoken Hani <i> ([i]). Written Hani <ee> always represents Spoken Hani <y> ([ɯ]) ([ILH-PCAH] p. 93).
- All vowels are found in both laryngealized and non-laryngealized syllables.

TONES

[ILH-PCAH] Spoken Hani; [ILH-PL] Hani L

	Non-laryngealized	*Laryngealized*
high	má	
mid	ma	maq
low	mà	màq

[ILH-PCAH] Written Hani; [ILH-PL] Hani W

	Non-laryngealized	*Laryngealized*
high	mal	
mid	ma	mav
low	maq	màq

- There is also a high rising tone, transcribed with final <-f> in Written Hani (e.g. <maf>), which is only used for Chinese loanwords ([ILH-PCAH], p. 65).

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HANI

Haoni (Shuikui)

Data Source: Li and Wang 1986 [JZ-Hani]
Sun et al. 1991 [ZMYYC] #32
Dai 1989 [DQ-Haoni]

Collected in Shuikui, Lianhe Town, Mojiang County, Yunnan.

Inventory: Li and Wang 1986 [JZ-Hani] (pages 9-15)
Sun et al. 1991 [ZMYYC] #32 (pages 276-278)
Dai 1989 [DQ-Haoni]

CONSONANTS

Initials

p	t	ts	tʃ	tɕ	k
ph	th	tsh	tʃh	tɕh	kh
f		s	ʃ	ɕ	x
v		z	ʒ		ɣ
m	n			ɳ	ŋ
	l			j	
	l̥				

- [JZ-Hani] and [ZMYYC] list /j/ as a voiced palatal fricative rather than as an approximant.
- /f/ occurs only with the vowels /ɣ̩ ɣ̲ a ɔ/.
- /ɣ̩/ occurs only in Chinese loans.
- Except when combining with vowels /i i̲/, /tɕ tɕh ɕ ɳ/ are found only in Chinese loans.
- Younger speakers pronounce /ts tsh s z/ as [tɕ tɕh ɕ j] before /i i̲/.

VOWELS

Unconstricted		*Constricted*	
ɿ	ɣ̩	ɪ̄	ɣ̲
i	ɯ , u	i̲	
ɛ	ʏ , o	ɛ̲	
(æ)	ɔ		
a			

- /v̲/ appears as <v̲> in [JZ-Hani], but is transcribed <v̄> in the STEDT database. (In data from [ZMYYC] it is transcribed following copy as <v̲>.)
- [DQ-Haoni] does not list /v̲/ as a phoneme.
- /ɿ ʅ/ are pronounced [ɻ̩ ʐ̩] following /tʃ tʃh ʃ ʒ/.
- /æ/, as well as diphthongs /ia iɔ io iu ua uɛ ui/ and nasalized vowels /ĩ ɛ̃ ã õ iɛ̃ iã iõ uɛ̃ uã/, occur primarily in Chinese loanwords.
- Discounting the foreign phoneme /æ/, only four of the ten vowels show a constricted/unconstricted distinction. However, /a o ɤ/ are normally pronounced with some constriction, and they function as constricted equivalents of /ɔ u ɯ/ respectively in vowel harmony rules.

TONES

ma^{55} high level
ma^{33} mid level
ma^{31} low falling
ma^{35} high rising

- In [JZ-Hani], tones are represented by Chao tone letters, not numbers.
- The high rising tone occurs primarily in Chinese loanwords and grammatical particles.
- The tones of syllables with constricted vowels are pronounced slightly higher than for lax vowels.
- Constricted vowels appear only in the mid level and low falling tones in native words.

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HANI

Biyue (Caiyuan)

Data Source: Sun et al. 1991 [ZMYYC] #30
Li and Wang 1986 [JZ-Hani]

Collected in Caiyuan Biyue, Mojiang County, Yunnan.

Inventory: Sun et al. 1991 [ZMYYC] #30 (pages 271-273)
Li and Wang 1986 [JZ-Hani] (pages 129-142)

CONSONANTS

Initials

p	pj	t	ts		k
ph		th	tsh		kh
f			s		x
v					
m	mj	n			ŋ
		l		j	

- /ts tsh s/ are pronounced [tʃ tʃh ʃ] before /ɻ ʅ/, [tɕ tɕh ɕ] before /i i̱ e e̱/ (including diphthongs with /i/ as first segment). In [JZ-Hani], /tɕ tɕh ɕ/ appear as phonemes, but their environment seems to be limited to the vowels /i i̱ e e̱/.
- /n/ is pronounced [ɳ̩] before high and mid-high vowels.

VOWELS

Unconstricted			*Constricted*		
ɿ	ɻ	v	ʅ	ɻ̄	v̱
i		u	i̱		
e		ɤ	e̱		ɤ̱
					ɔ̱
	a			a̱	

- Other rhymes occur in Chinese loanwords, namely /ai au ɤu aŋ ɤŋ eŋ ia iau iu iaŋ iŋ ua uai ui uaŋ ueŋ uŋ/.

TONES

ma^{55}	high level
ma^{33}	mid level
ma^{31}	low falling
ma^{35}	high rising

- In [JZ-Hani], tones are represented by Chao tone letters, not numbers.
- The high rising tone occurs mainly in Chinese loanwords.

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HANI

Biyue

Data Source: Hansson 1989 [ILH-PL]

Collected in Kunming (Yunnan Institute of Nationalities) from one male informant, aged 29, from Mojiang County and resident in Kunming for three years (p. 7).

Inventory: Hansson 1989 [ILH-PL]

CONSONANTS

Initials

p	pj	t	ts	tj	k	kj
ph	pjh	th	tsh	tjh	kh	kjh
f			s	sj		
v			sh	sjh	xh	
					ɣ	
m	mj	n		nj	ŋ	
		l		j		

- Aspirated stops and fricatives only occur in non-laryngealized syllables (p. 8).

VOWELS

i	y	u
e	ə	o
ɛ	a	ɔ

- Laryngealization can occur with all vowels except /u/. It is marked by <q> following the vowel.

TONES

	Non-laryngealized	*Laryngealized*
high	má	
mid	ma	maq
low	mà	màq

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HANI

Kaduo

Data Source: Hansson 1989 [ILH-PL]

Collected in Kunming (Yunnan Institute of Nationalities) from one male informant, aged 16, from Mojiang County and resident in Kunming for one year (p. 7).

Inventory: Hansson 1989 [ILH-PL]

CONSONANTS

Initials

p	pj	t	ts	tj	k	
ph	pjh	th	tsh	thj	kh	kjh
		s		sj	h	
		sh		sjh	xh	
m	mj	n		nj	ŋ	
w	v	l		j	ɣ	

- Hansson places /h/ in the same column as velars (p. 8).
- Aspirated stops and fricatives only occur in non-laryngealized syllables (p. 8).

VOWELS

i	y	u
e	ə	o
ɛ	a	ɔ

- Laryngealization can occur with all vowels except /u/ and /i/. It is marked by <q> following the vowel.

TONES

	Non-laryngealized	*Laryngealized*
high	má	
mid	ma	maq
low	mà	màq

- The low tone is slightly falling.

❖

HAYU[1]

Data Source: Michailovsky 1989 [BM-Hay]
Michailovsky 1991 [BM-PK7]

Collected in Nepal in 1971, 1972, and 1984.

Inventory: Michailovsky 1988 [BM-LH] (pages 45-76)

Secondary Sources: [JAM-Ety]

Note: Transcription normalized in STEDT database.

SYLLABLE CANON

(C)V(C)

CONSONANTS

Simple Initials

p	t	ts	c	k	
ph	th	tsh		kh	
b	d	dz	ɟ	g	
		s		x	h
m	n			ŋ	
w	l	r	j		
	hl				

Initial Clusters

pl	phl	bl	kl	khl	gl
kr	khr	gr			

Finals

-p	-t		-k
-m	-n		-ŋ
	-l	-r	

- The opposition between the palatal and alveolar series is neutralized before front vowels. Michailovsky posits the existence of archiphonemes /TS DZ/ (p. 49).

---

[1]Called *Vayu* in [JAM-VSTB], [JAM-GSTC].

- /x/ is realized as [x] (voiceless dorso-velar fricative) before back vowels and [x^w] (voiceless labiovelar fricative) before /ɑ/ (p. 50). In part of the book <xwɑ-> appears in place of <xɑ->.
- "The initial clusters are fairly rare: about thirty words, half of which have a phonesthetic character" (p. 52).
- In initial position in internal syllables, if preceded by a stop, /h/ can be realized as a voiceless nasal homorganic with the preceding stop (p. 59).

VOWELS

i iː	u uː
ɪ ɪː	ʊ ʊː
e eː	o oː
ɑ ɑː	

- The length mark <ː> is transcribed <·> in [BM-LH].

NOTES

- The systems of initials and finals, particularly the inventory of syllable finals, in the interior of polysyllabic words is richer than the systems of monosyllabic words (p. 54).
- Michailovsky uses an apostrophe <'> to mark syllable boundaries where it is ambiguous (p. 60).

HPUN

Megyaw/Northern

Data Source: Henderson 1986 [EJAH-Hpun]

Based on field notes collected in Burma by Gordon H. Luce in October 1962 on the Megyaw ([phyèɪ mècɔ́]) dialect. Informants: (1) U Khan, 59, of Man-lé village; born at Kôk-ma village (east bank of the Irrawaddy). (2) U Kwè, 45, Yé-na Pinlôn village; born at Nan-hè village (east bank of the Irrawaddy, 3 miles from Kôk-ma) (p. 103).

Megyaw is distinct from the Samong (Southern) dialect of Hpun, which Luce concluded to be extinct by the time of his field work. In addition, he considered the Megyaw dialect to be "rapidly disappearing" (p. 103)

Inventory: Henderson 1986 [EJAH-Hpun] (pages 106-114)

SYLLABLE STRUCTURE

CV(C)

- The most common syllable structures are CV, CVʔ, CVŋ.

CONSONANTS

Simple

p		t	ts	c		k		ʔ
ph		th		ch		kh		
(b)			dz	j				
(f)	(θ)		s	ʃ			x	h , ’
			sh					
(v)			z				R	
m		n			ɲ	ŋ		
		(hn)						
w		l			y			

Cluster

tw	thw	shw	lw	chw	ʃw	khw	xw	ŋw
py	phy	my						
vR								

- Henderson is uncertain whether /c ch j ʃ/ are pre-palatal or alveolo-palatal. /ɲ y/ are palatal.

- /c ch j/ are affricates.
- Henderson interprets /x/ to be more retracted than plain velars. /R/ represents a back unrounded glide or a post-velar voiced fricative.
- There are instances of free variation between the following phones, although some of these variants are also separate phonemes:
  x ~ kh xw ~ khw
  hw ~ xw s ~ ʃ
  s ~ sh sh ~ ʃ
  s ~ ts s~dz
  ts ~ z
  The following alternations are rarer, but also exist:
  l ~ n ɲ ~ y ɲ ~ z ŋy ~ ɲ
- /f θ hn/ are all very rare. /θ hn/ may be borrowed from or influenced by Burmese.
- There are instances of alternation between <x> ~ <xR> and <kh> ~ <khR>. <R> is probably an optional voiced glide in these cases. /w/, which is an integral component of certain clusters, sometimes also appears optionally before rounded vowels.
- The final velar nasals of verb forms are often heard as syllabic. There are also two examples of word-initial syllabic nasals.
- Henderson interprets final symbols <-' -h> as representing final laryngealization, which Luce called "a slight catch in the voice." Henderson thinks that these are pre-pausal features and are not phonemic.
- Final glottal stop /ʔ/ exists as a phoneme, but some instances of glottal stop in the word list may simply represent pre-pausal features.

VOWELS

Monophthongs

i		u
ɪ		ʊ
e	ă (ə)	(ɤ) , o
ɛ	a	ʌ , ɔ

- /ə ɤ/ are rare, probably of Shan origin.
- "[ʌ] seems to be an allophonic variant of /a/" (p. 110).
- The following variations exist. In some cases, variation may be grammatically conditioned, or may be affected by some morphophonemic process:
  [u ~ ʊ], [u ~ o], [ʊ ~ o], [i ~ e], [i ~ ɛ], [e ~ eɪ], [e ~ əɪ].
- Nasalization of vowels occurs in seemingly free variation with final /-ŋ/, or with some other nasal in medial position. There is one instance where only the variant with the nasalized vowel occurs.

Diphthongs

əɪ, eɪ	ɛə
ui	au
ai	ɔɪ

- Many of the diphthongs alternate with monophthongs, making their phonemic status doubtful. The following alternations occur: [ɛə ~ ɛ], [e ~ eɪ], [e ~ əɪ], [au ~ ɔ].
- /ɔɪ/ is rare.

TONES

má	high (or mid-high) level
ma	unstressed syllable (or tone not determined)
mà	falling or low level

- Although Luce set up a two-tone system for Hpun (with basically a high vs. low distinction), he later concluded that the language was 'barely tonal, like Tibetan'. Nevertheless, there are some minimal pairs.

IDU[1]

Data Source: Pulu 1978 [JP-Idu]
Anonymous 1962 [NEFA-PBI]

Collected in the hills of the western part of the Lohit District of Arunachal Pradesh. Dialectal variations are minimal except in the Mithun (Bebejiya) section. The materials for [JP-Idu] were collected mainly from the village of Ceta.

These two sources have the same publisher and look extremely similar. The later source, [JP-Idu], does not make any reference to the earlier source, but its organization, content, and even the examples used are the same as in [NEFA-PBI].

Inventory: Pulu 1978 [JP-Idu] (pages 1-3)
Anonymous 1962 [NEFA-PBI] (pages 1-3)

CONSONANTS

p	t		c	k	
ph	th		ch	kh	
b	d			g	
	s				h
	z		j		
m	n			ng	
w	l	r	y		

- /c/ is a palatal affricate which is sometimes pronounced as a dental affricate [ts].
- /s/ is neither purely dental nor purely palatal, but somewhere between the two.
- Liquids are often palatalized. Palatalized /ly/ is sometimes distinct in meaning from unpalatalized /l/ (e.g. ili 'bow', ilyi 'pig'), indicating that it may have phonemic status.

VOWELS

i , ú	í , u
e , é	o
a	

- /o/ seems to have a phonetic value between [o] and [ɔ].
- The vowels with accent marks /ú í é/ are called "central", but the description suggests that their values are close to IPA [y ɯ ø].

---

[1]Called *Luoba (Yidu)* in [ZMYYC].

- Nasalization in Idu is phonemic and is marked by <˜> over the vowel. Nasalization can cause the introduction of a homorganic nasal before a following consonant.

TONES

- There are three tones in Idu: rising, mid, and falling. Neither [JP-Idu] nor [NEFA-PBI] indicates tone.

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IDU

Data Source: Sun et al. 1991 [ZMYYC] #50
Collected in Shangcha'ou District, Cha'ou County, Changdu Area, Tibet.

Inventory: Sun et al. 1991 [ZMYYC] #50 (pages 351-355)

INITIALS

Simple

p	t	ts	(tʂ)	tɕ	k	ʔ
ph	th	tsh	(tʂh)	tɕh	kh	
b	d	dz	(dʐ)	dʑ	g	
	s		ɕ			h
m	n			ɳ	ŋ	
w	l		ɹ	j		ɦ

Cluster

pl	bl						
pɹ	phɹ	bɹ	kɹ	khɹ	gɹ	hɹ	mɹ
mb	nd	ndz	ndʐ	ndʑ	ŋg		
mbɹ	ŋgɹ						

- The retroflexed affricates /tʂ tʂh dʐ/ are found in few words, mostly Chinese or Tibetan loans.
- The voiced affricates /dz dʐ dʑ/ are sometimes realized as fricatives word-medially. Since [z ʐ ʑ] never occur initially in monosyllabic words, they are in complementary distribution with the above voiced affricates and are not phonemically distinct.
- The phoneme /ɹ/ is pronounced with more friction initially, close to [ʐ]. It is close to [r] or [ɾ] in consonant clusters.

- Velar stops /k kh g/ are realized as the corresponding palatal stops [c ch ɟ] before /i/.
- Glottal stop is a distinct initial consonant; in monosyllables, it may contrast with a vowel (or zero) initial. However it is usually lost in connected speech.
- /w j/ are pronounced with friction, actually closer to voiced fricatives [β ʑ].

RHYMES

i ɯ u e o ɑ	iu ɯu iɑu ɑu
ɯi ui iɑi ɑi uɑi	uɯ ie ue io iɑ uɑ
im ɯm um ɑm	in ɯn en ɑn
iŋ ɯŋ uŋ ieŋ eŋ ioŋ oŋ iɑŋ ɑŋ	

- /i/ is realized as [ɪ] after /ts tsh dz s k kh g ŋ/ and as [ɯi] after /t th d l/.
- /e/ and /o/ are realized as diphthongs [ei] and [ou] when occurring by themselves; when combined with other consonants or vowels to form syllables, they are pronounced as [ɛ] and [ɔ] respectively.
- /ɑ/ is realized as [a] before the [i] offglide and as [ɒ] before the [u] offglide; elsewhere, it is [ʌ].
- /ɯ/ is realized phonetically as follows: [ɻ] after dental affrciates and sibilant /ts tsh dz s/; [ɭ] after retroflexed affricates /tʂ tʂh dʐ/; [ɤ] before nasal endings /m n and ŋ/; and [ə] in weak syllables.
- /m/ can constitute a syllabic nasal rhyme by itself.

TONES

mɑ^{55} High level
mɑ^{53} High falling
mɑ^{35} High rising
mɑ^{31} Low falling

- The /[31]/ tone occurs mainly in the first syllable of disyllabic words, where it often becomes a weakened (unstressed) tone; when occurring in monosyllables (rare), it is realized as a lower mid level [[22]] tone.
- The high level /[55]/ is the most frequent tone, followed by the low falling tone /[33]/. The high rising /[35]/ and high falling /[53]/ tones are relatively fewer.

JINGPHO[1]

Data Source: Dai et al. 1983 [JCD]

Inventory: Dai et al. 1983 [JCD] (pages 919-929)
This section also explains the relationship between the Jingpho romanized writing system and the phonology.

CONSONANTS

Initials

p	pj	pʒ	t	ts	tʃ	k	kj	kʒ
ph	phj	pjʒ	th	tsh	tʃh	kh	khj	khʒ
f				s	ʃ	x		
					ʒ			
m	mj		n			ŋ	ŋj	
w			l		j			

Finals

	-p	-t	-k	-ʔ
	-m	-n	-ŋ	

VOWELS

Monophthongs

i i̱		u u̱
e e̱	(ă)	o o̱
	a a̱	

Diphthongs

				ui u̱i
				oi o̱i
ai	a̱i	au	a̱u	

- All monophthongs can combine with all finals. Diphthongs do not occur with finals.
- Syllables with the zero-initial have constricted vowels; since there is no contrast, the underscore <_> marking constriction is not transcribed.
- Certain prefixed syllables are weakened. In such syllables the vowel is realized as central [ə] or [ɨ]; the tone is neutralized; and the entire syllable becomes shortened. The vowel of a weakened syllable is transcribed <ă>.

[1]Called *Kachin* in [OH-DKL]; *Jinghpaw* in [JAM-TJLB], [JAM-MLBM], [JAM-VSTB]; *Jingpo* in [JCD], [JZ-Jingpo].

TONES

ma[33] mid level
ma[31] low falling
ma[55] high level
ma[51] high falling

- There is considerable tone sandhi in Jingpho. In all cases the changed tone is transcribed.

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JINGPHO

Bhamo

Data Source: Hanson 1906 [OH-DKL]

Hanson refers to the pronunciation of Jinghpaw (or Chinghpaw) and Hkauris (or Cowries). The Jinghpaws are the "largest and most influential tribe of the race known as Kachin" (p. 212). The Hkauris, also known as Gauris, are "a large clan of the Lahpai tribe inhabiting a score or more villages due east of Bhamo. ...[They] differ to certain extent in dialect from the Jinghpaws, and are more under Chinese influence" (p. 172). In the preface, the author says, "The Southern Kachin, or Chinghpaw, as spoken in the Bhamo district has been taken as our basis."

Inventory: Hanson 1896 [OH-GKL] (pages 13-17)

Secondary Sources: [JAM-Ety], [JAM-GSTC], [JAM-TJLB]

CONSONANTS

Simple

p	t	ts	chy	ky	k	
hp	ht		(ch)	hky	hk	
b	d		j	gy	g	
(pf)		s	sh		(kh)	(h)
(v)		z				
m	n		ny		ng	
w	l	r	y			

Cluster

phw	bw	tw	htw	dw	kw	hkw	gw
pr	hpr	br	tr	kr	hkr	gr	
py	hpy	by	my				

- /ch/ is not clearly distinguishable from /hky/.
- /chy/ is often "used interchangeably with *ja* and even *hky*" (pp. 81).
- /h/ only occurs in loans and interjections.
- <pf>, <v>, and <kh> ([x]) generally occur only in Hkauri pronunciations, and are equivalent to /hp/, /y/, and /hk/ respectively.
- [n] can occur as a syllabic. Before labials /b p hp m/, the "performative" syllabic /n/ is often realized as [m̩].
- A hyphen is used to distinguish /n-g/ and /n-y/ (syllabic nasal /n/ followed by /g/ or /y/) from /ng/ (velar nasal) and /ny/ (palatal nasal). Similarly, a hyphen is used to separate two monophthongs that might otherwise be interpretable as a diphthong.

VOWELS

Monophthongs			*Diphthongs*	
i		u		
ē		o		
e	ă	aw		oi
	a		ai	au

- The vowel chart is in [OH-GKL], pp. 13-14.
- /ē/ is [e], "long sound of a, as in *ale*"; /e/ is [ɛ], "short sound of e, as in *ten*, *met*".
- /aw/ is [ɔ], "as in *law*".
- Hanson also lists a vowel <è>, "the sound of ay, as in *prayer*", but provides no example word in the chart, and notes, "the usage of è as distinct from ē is somewhat doubtful."
- Hanson's chart also lists vowels <ö> ([ø]) and <ŭ> ([ʊ]), which are not in Jingpho but "have been introduced in order to facilitate the writing of kindred dialects".

TONES

- Although Hanson describes five tones in [OH-GKL], page 17, he does not indicate them in his transcriptions. "The tones ... can by mastered only with the help of a native teacher, and it would be useless to burden these pages with tonal marks in regard to which no two Europeans would ever agree" (p. 4).

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JINGPHO

Enkun

Data Source: Liu 1984 [JZ-Jingpo]
Collected in Tongbiguan Commune, Yingjiang County, Yunnan.

Inventory: Liu 1984 [JZ-Jingpo] (pages 5-16)

CONSONANTS

Initials

p	pj	pɹ	t	ts	tʃ	k	kj	kɹ	ʔ
ph	phj	phɹ	th	(tsh)	(tʃh)	kh	khj	khɹ	
(f)				s	ʃ	(x)			
					ʒ				
m	mj		n			ŋ	ŋj		
w			l		j				

- /w/ is realized as [v] before /a/ and /o/.
- Jingpho has a syllabic nasal transcribed <n̩> which constitutes a tone-bearing syllable; the place of articulation is homorganic to the following initial consonant.
- The dentals /t th ts s l/ are palatalized before /e e̱/: [tj thj tsj sj lj].
- /f tsh tʃh x/ are found only in Chinese loans and have phonemic status only for young speakers.

Finals

-p	-t	-k	-ʔ
-m	-n	-ŋ	

VOWELS

Monophthongs			*Diphthongs*	
i i̱		u u̱		ui u̱i
e e̱	(ă ă̱)	o o̱		oi o̱i
	a a̱		ai a̱i	au a̱u

- All monophthongs can combine with all finals. Diphthongs do not occur with finals.

- Certain prefixed syllables are weakened. In such syllables the vowel is realized as [ə], [ɿ], or [ʉ̞], depending on the initial. This vowel is transcribed <ă> or <a̲>.
- Rhymes /ua iau iu/ also appear in Chinese loanwords.
- When /i i̲/ occur after velar initials in closed syllables, they are retracted and lowered to [ɤ ɤ̲].

TONES

ma^{33} mid level

ma^{31} low falling

ma^{55} high level

- In [JZ-Jingpo], tones are represented by Chao tone letters, not numbers.
- The high level tone is realized in lax syllables as high rising [^{35}].
- A marginal tone [^{51}] occurs only in kinship terms (terms for address), exclamation words, sentence-final particles, the copula <ʒe^{51}>, and in tone sandhi as an allotone of the low falling toneme.

JINUO

Buyuan

Data Source: Gai 1986 [JZ-Jinuo]

Collected in Buyuan Mountain District, Jinghong County, Xishuangbanna Prefecture, Yunnan.

Inventory: Gai 1986 [JZ-Jinuo] (pages 121-126)

CONSONANTS

Simple Initials

p	t	ts	tɕ	k
pʰ	tʰ	tsʰ	tɕʰ	kʰ
f		s	ɕ	x
v		z		ɣ
m	n		ɳ	ŋ
w	l		j	

- Zero-initial is realized as [ʔ].
- /x/ is realized as [χ] before /æ ɑ ɔ o/.
- The consonants /m n/ can constitute tone-bearing syllables, in which case they are transcribed <m̩ n̩>.

Palatalized Initials

pj pʰj mj tj tʰj lj

VOWELS

Monophthongs			*Diphthongs*		
i ĩ		ɯ , u	ui	uĩ	
e ẽ		ɤ , o			
E	ə	ɔ		əu	ɔu
æ	ɑ ɑ̃		uæ	uɑ	uɑ̃

- /i/ is pronounced [ɿ] after alveolar affricates and fricatives.
- /ɑ/ is pronounced [ʌ].
- There are also rhymes /iŋ ɑŋ ɤŋ oŋ uŋ uɑŋ/ which occur mostly in Chinese loanwords.

TONES

mɑ^{55}	high level
mɑ^{44}	mid high level
mɑ^{33}	mid level
mɑ^{42}	mid falling
mɑ^{31}	low falling
mɑ^{13}	low rising
mɑ^{11}	high level
mɑ^{53}	high falling

- In [JZ-Jinuo], tones are represented by Chao tone letters, not numbers.

❖ ❖ ❖ ❖ ❖

JINUO

Youle

Data Source: Gai 1986 [JZ-Jinuo]

Youle Dialect. Collected in Manka and Mandou, Jinuo Mountain District, Jinghong County, Yunnan.

Inventory: Gai 1986 [JZ-Jinuo] (pages 3-13)

CONSONANTS

Simple Initials

p	t	ts	tʃ	tɕ	k
pʰ	tʰ	tsʰ	tʃʰ	tɕʰ	kʰ
f		s	ʃ	ɕ	x
v		z	(ʒ)		ɣ
m	n			ɳ	ŋ
m̥	n̥			ɳ̊	ŋ̊
(w)	l			j	
	ɬ				

- Zero-initial is realized <-ʔ>.
- <w> and <ʒ> are used to transcribe the sounds represented by pinyin <w> and <r> in Chinese loanwords. They do not appear in native words.

- The consonants /m̥ m n̥ n/ can constitute tone-bearing syllables, in which case they are transcribed <m̥ m̩ n̥ n̩>.

Palatalized Initials

pj pʰj mj m̥j tj tʰj lj

Cluster Initials

pɹ pʰɹ mɹ m̥ɹ kɹ kʰɹ

- /ɹ/ is pronounced [ɾ].

VOWELS

Monophthongs

Oral			*Nasal*	
i		ɯ , u	ĩ	
e , ø		ɤ , o	ẽ	
ɛ , œ	ə (əɹ)	ɔ		
	ɑ			ɑ̃

Diphthongs

Oral			*Nasal*	
ui			uĩ	
uɛ	əu	ɔu		
	ɑi uɑ			uɑ̃

- /i/ is realized as [ɻ] after alveolar affricates and fricatives, and as [ɻ̩] after palato-alveolar affricates and fricatives.
- /ɑ/ is pronounced [ɑ].
- The nasal vowels occur mostly in Chinese loanwords.
- There is also a retroflexed vowel /əɹ/ which occurs only in Chinese loanwords.
- The diphthongs occur mostly in Chinese and Tai loanwords.
- There are also rhymes /iŋ ɑŋ ɤŋ oŋ uɑŋ/ which occur only in Chinese loanwords.

TONES

mɑ^{55}	high level
mɑ^{44}	mid high level
mɑ^{33}	mid level
mɑ^{42}	mid falling
mɑ^{13}	low rising
mɑ^{35}	high rising
mɑ^{53}	high falling

- In [JZ-Jinuo], tones are represented by Chao tone letters, not numbers.
- The high rising tone occurs mostly in Chinese and Tai loanwords. In native words it has only a morphological function.

JINUO

Youle

Data Source: Sun et al. 1991 [ZMYYC] #34

Collected in Manya, Jinuo District, Jinghong County, Xishuangbanna Prefecture, Yunnan.

Inventory: Sun et al. 1991 [ZMYYC] #34 (pages 282-285)

CONSONANTS

Simple Initials

p	t	ts	tʃ	tɕ	k
ph	th	tsh	tʃh	tɕh	kh
f		s	ʃ	ɕ	x
v		z			ɣ
m	n			ɳ	ŋ
					ŋ̊
	l			j	
	ɬ				

- All zero-initial syllables (except the prefix <a>) begin with a non-phonemic glottal stop, which is not transcribed.

- /ɲ̊/ appears in only a few words, and is pronounced [ɲ̊].
- /k kh/ are palatalized to [c ch] before /i e ɛ/.
- Although /n̥/ does not appear in the consonant chart, it does appear in the lexical data (cf. <n̥o[44]> 'lake' (p. 390 set 20).

Palatalized Initials

pj phj mj tj thj lj

Cluster Initials

pɹ phɹ mɹ kɹ khɹ

VOWELS

Monophthongs

Oral			*Nasal*	
i , y		ɯ , u	ĩ	ɯ̃
e , ø		o		
ɛ ɛr	ɐ ɐr	ɔ	ɛ̃	
	a			ã

Diphthongs

Oral			*Nasal*
ui			
ɛi uɛ	ɐu	ɔu	
	ua		uã

- /ɛr ɐr/ are retroflex vowels.
- /i/ is pronounced [ɿ] after alveolar affricates and fricatives, [ʅ] after palato-alveolar affricates and fricatives.
- /a/ is pronounced [ɑ].

TONES

ma^{55}	high level
ma^{44}	mid high level
ma^{33}	mid level
ma^{42}	mid falling
ma^{31}	low falling
ma^{35}	high rising

- The high rising tone occurs mostly in Chinese and Tai loanwords. In native words it has only a morphological function.
- The mid high level and mid falling tones are pronounced with constriction; they can be considered constricted equivalents of the mid level and low falling tones, respectively.
- A high falling tone occurs as well, but since it does not contrast with the high level tone it is considered an allotone.

KANAURI[1]

Data Source: D. D. Sharma 1988 [DS-Kan]

Collected on the Northeastern border of India, State of Himachal Pradesh (western Himalayas on both banks of the Satluj river). There are three distinct subgroups forming two main linguistic subgroups (the Kalpa and Nichar subgroups comprise Lower Kinnauri; Pooh comprises Upper Kinnauri), each with dialectal subdivisions.

The dialect of the Kalpa region (Kinnaurayanuskad) should be regarded as the standard dialect, since it was the lingua franca *used before Hindi (pages 4-5).*

Inventory: D. D. Sharma 1988 [DS-Kan] (pages 19-46)

The transcription used here is a transliteration of the Devanāgarī script in which Kanauri is written. Thus distinctions that do not exist in the spoken language (such as a voicing contrast in final consonants) may be preserved in the orthography.

SYLLABLE CANON

(C)(C)(C)V(C)(C)

CONSONANTS

p	t	ts	ṭ	c	k	
ph	th	tsh	ṭh	ch	kh	
b	d	dz	ḍ	j	g	
		s		š		h
		z		ž		
m	n		ṇ		ṅ	
w		l	r	y		l(h)

- Sharma is inconsistent in his treatment of the palatal consonants. On page 26 he refers to /c ch j/ as "palatal plosives". In the chart on page 28 they are written <č čh j> (implying that they are affricates). On page 29 two series, /c ch j/ and /č čh j/, are listed.
- The retroflex sibilant [ʂ] is a regional allophonic variant of /š/, and [ɽ] is a variant of /r/. The latter is "sporadically attested in the pronunciation of educated individuals in Hindi loans" (p. 32).
- Voicing and aspiration are both neutralized in final position, resulting in voiceless unaspirated articulations; however, the voicing distinction is maintained in the orthography.

[1]Called *Kinnauri* in [DS-Kan].

- The palatal and the retroflex nasals /ñ ṇ/ have very low functional load. /ṇ/ never occurs initially or finally, but only in intervocalic position. Although it does not occur in opposition with other nasals, Sharma accords it phonemic status.

Consonant Clusters

Initial

py	spy	phy	by	my	dy	ny	ry	šy
ñy	ky	sky	khy	gy	sgy	hy		
tw	thw	chw	kw	skw	khw	gw		
pr	phr	br	tr	thr	kr	khr		
lh	rh							
sp	sb	st	sṭ	sk	sg	sks	skl	
žg								

Final

-ms		
-nṭ		
-ṅs	-ṅč	-ṅk
-lk	-lč	
-rk	-rz	
-kč		
-šk		

- Sharma writes <č> for /c/ in his list of final clusters (p. 36).
- In standard Kanauri, as opposed to some of the more conservative dialects, many consonant clusters have been reduced to simple consonants.
- Word-medially, almost any combination of two- and three-consonant clusters is possible.

VOWELS

i		u
e	ə	o
		a , ɔ

- Vowel length is distinctive, and is marked by <ː> following the vowel.

- Vowel nasalization is phonemic as well as phonetically conditioned by a following nasal. It is marked by <˜> over the vowel.
- The phonemic status of /ɔ/ is dubious as it does not contrast with /o/, but Sharma sets it up as an independent phoneme because of its opposition to /ə/. [ɔ] also occurs as an allophone of the phonemes /ə/ and /o/.
- Sharma includes the symbol <E> in parentheses, in the position of a low front vowel. He analyzes this as an allophone of /e/.
- Sharma also includes the symbol <á> in parentheses, in the position of a low central vowel, but does not mention this symbol again. He does mention <ä> as an allophone of /ə/ (p. 22). The two symbols probably represent the same sound, with one being a typographical error for the other.
- "There are no diphthongs in Kinnauri, but it has vocalic sequences" (p. 23). Almost any combination of two vowels may appear in sequence.

KANAURI

Standard

Data Source: Bailey 1911 [BAI1911]

The standard dialect is spoken between Long. 77°50' and 78°40', and between Lat. 31°23' and 31°40' in the Satlaj Valley in Punjab.

Inventory: Extracted from Bailey 1911 [BAI1911] (pages 3-5)

Secondary Sources: [STC], [JAM-Ety]

Note: Transcription normalized in STEDT database.

CONSONANTS

p	t	ts	ṭ	c	k	
ph	th	tsh	ṭh	ch	kh	
b	d		ḍ		g	
b‘	d‘				g‘	
		s		sh		h
m	n		ṇ		ṅ	
	l	r		y		

- <ṅ> is [ŋ].
- /b‘ d‘ g‘/ probably represent [β ð ɣ].
- [ʃ] is transcribed by Bailey as /sh/ to distinguish it from a sequence of /s/ + /h/.

VOWELS

Monophthongs

Short		*Long*	
i , ü	u	ī	ū
ĭ	ŭ		
e , ö	o	ē , œ	ō
ĕ	ă , ɔ		ɔ̄
a		ā	

Diphthongs

ai

- An additional digraph, <au>, appears in Indic loanwords, and is phonetically equivalent to the sound represented by <ɔ̄>.
- Due to typographical limitations, a few of Bailey's symbols have been modified in the STEDT database. <œ̄ ɔ̆ ɔ̄> are transcribed <ō̄ ŏ ō> in [BAI1911].
- Of the short vowels, those marked with <˘> over the vowel are lax and the others are half-long.

KAREN (BWE)

Blimaw

Data Source: Henderson, forthcoming [EJAH-BKD]

Inventory: Henderson, forthcoming [EJAH-BKD]
The phonological information is from the introduction by David Solnit.

SYLLABLE CANON

T
C(C)V

CONSONANTS

Simple Initials

p		t		c	k	’
ph		th		ch	kh	
b		d		j	g	
ɓ		đ				
	θ			ʃ	x	h
m		n				
w		l	r	y	R	
’w				’y		

- /R/ is an unrounded velar semivowel.
- /ɓ đ/ are glottalized plosives. The latter appears as <Î> in the source.
- [ch] is in near-complementary distribution with /th/, appearing only before vowels /i ɪ/.
- Zero-initial is usually realized as [ʔ]. <> is used to transcribe it only word-medially to separate syllables.
- An initial <‘> (reversed apostrophe) is used to mark those few syllables pronounced with breathy onset.
- /’w ’y/ are preglottalized [ʔw ʔy].
- /x/ is rare.

Initial Clusters

đw	nw	θw	lw	ʃw	kw	khw	gw	pw
bw	ɓw	mw	thw					
pr	phr	br	tr	dr	θr	kr	khr	gr
pl	phl	bl	kl	khl	gl			

VOWELS

i		u
ɪ		ʊ
e	ə	o
ɛ		ɔ
	a	

- /ɪ ʊ/ are centralized, tense, and constricted. /ʊ/ sometimes appears as <ʊ> in the STEDT database.
- /ə/ appears only in unstressed syllables. It may be realized as [ə] or it may take on characteristics of the vowel in the following stressed syllable.

TONES

má	high level
ma	mid level
mà	low level
-ma	unstressed suffix, no independent tone
ma-	unstressed prefix, no distinct tone

- The tone of a suffix is identical to the tone of the preceding stressed syllable, unless the suffix has a voiced initial and the preceding syllable is in the high tone, in which case the suffix is in mid tone.

❖ ❖ ❖ ❖ ❖

KAREN (BWE)

Chitabu

Data Source: Weidert 1987 [AW-TBT]
Fieldwork in Chitabu village in 1975, with informant Miss Lu May (p. 494, n. 13).

Inventory: Extracted from Weidert 1987 [AW-TBT] (pages 321-324)

CONSONANTS

Simple Initials

p	t		tš	k	ʔ
ph	th		tšh	kh	
b	d		dž	g	
ʔb	ʔd				
	θ		š	x	h
				ɣ	
m	n				
ʔm	ʔn				
w	l	r	y		
ʔw	ʔl	ʔr	ʔy		

- /ʔb ʔd/ are voiced implosives.
- /r/ is a trill.

Initial Clusters

pw	phw	bw	ʔbw	ʔmw	thw	ʔdw	ʔnw	lw
θw	tšw	šw	yw	kw	khw	gw		
pl	phl	bl	ʔbl	kl	khl	gl		
br	thr	θr						
by								
gɣ								
pʔw	kʔw							
pʔl	kʔl							
kʔɣ								

VOWELS

i		u
ɪ		ʊ
e	ə	o
ɛ		ɔ
	a	

- /ə/ appears only in unstressed syllables.

TONES

má	high
mà	low

- Unstressed syllables with schwa vocalism are not marked for tone.

KAREN (EASTERN KAYAH/RED KAREN)

Data Source: Solnit 1986 [DS-Kayah]

The language is spoken in three villages to the south of Mae Hong Son town: ThɅ́ Mɛ́dɤ Lɛ̄ KhɅ́ (Thai khŭn hûaj dyà*), Rùsɔ̄ Lɛ̄ (Thai* hûaj sy̆a thâw*), and ThɅ́ Mɛ́dɤ Lɛ̄ Chá (Thai* hûaj dýa*). The main informant was a 25-year-old woman, whose home is in Huai Dya. She is a native speaker of Kayah, but in addition speaks Shan and Standard Thai (page Intro-3).*

Inventory: Solnit 1986 [DS-Kayah] (pages 1-12)

SYLLABLE CANON

$$(C_1)(C_2)(G)V^{T}$$

T	tone
C_1	any consonant
C_2	a liquid
G	glide (/w/ or /j/)
V	any vowel

Possible combinations: V, GV, CV, CGV, CCV, CCGV

CONSONANTS

Simple Initials

p	t		c	k	(ʔ)
ph	th		ch	kh	
b	d		(j)		
	s				h
m	n			ŋ	
w	l	r	(j)		

Initial Clusters

pl kl

phr khr

Solnit suggests that although it is possible to analyze glottal stop as an allophone of zero-initial, the three known instances of contrast between initial glottal stop and zero-initial make it simpler to consider glottal stop to be phonemic.

- /c ch/ are alveopalatal affricates [tɕ tɕʰ]. /ch/ is occasionally realized with no stop component as [ɕʰ].
- "/j/ varies between a palatal glide and a voiced palatal fricative, also occasionally appearing as a slightly prenasalized alveopalatal affricate [ⁿdʑ], especially in the Low Falling tone."
- /ŋ/ is realized as [ŋʸ ~ ɲ] (fronted velar or palatal nasal) before front vowels and glide /j/.
- /w/ is usually realized as [v].
- "/r/ is usually a retroflex approximant similar to Mandarin Chinese /r/. In emphatic speech it may be an alveolar trill. As C_2 in clusters it is largely or completely devoiced by simultaneous aspiration, approaching [ʂ]."
- In clusters, aspiration appears to be conditioned by the presence of medial /-r-/.

VOWELS

Monophthongs			*Diphthongs*	
i		ɯ , u	wi	(jɯ)
e		ɤ , o	(we)	(jo)
ɛ	ʌ	ɔ		
	a		ja wa	

- "The phonemic status of /ɤ/ is solid only in the high tone .... In other tones, occurrences of /ɤ/ are rare and include many Shan/Thai loans."
- "The on-glides /j- w-/ are usually closer to [e-] and [o-] respectively."
- /jɯ jo we/ are rare. The first two each occur in only one word so far recorded, and the third only in loanwords.

TONES

má	high	[55]
maə	high falling	[52]
mā	mid	[33]
ma	low level	[22]
mà	low falling	[21]

- The high falling tone, represented by /ə/ suffixed to the main vowel, is rare, occurring most often in animal names and some other polysyllabic morphemes. (p. 9)

❖ ❖ ❖ ❖ ❖

KAREN (PA-O[1])

Data Source: Jones 1961 [RBJ-KLS]

Provided by Miss Mary Nang Mat Aye while she was in the U. S., and later spot-checked with her relative, Miss Hla Si. The variety of Pa-O described here is a northern variety spoken around Taunggyi. There is also a southern variety spoken around Thaton (p. 61).

Inventory: Jones 1961 [RBJ-KLS] (pages 71-73)

Secondary Sources: [JAM-Ety]

CONSONANTS

Simple Initials

p	t		c	k	ʔ
ph	th		ch	kh	
b	d				
	s				h
m	n			ŋ	
w	l	r	j		

[1]Called *Taungthu* in [RBJ-KLS].

Initial Clusters

pw	bw	tw	thw	nw	cw	chw	kw	khw
ŋw	ʔw	sw	hw	lw				
pl	bl	kl						
pr	phr	kr	khr					
pj	phj	mj	tj	nj	chj	kj	khj	ʔj
lj	rj							
phrw	khrw							

Finals

-p	-t	-k	-ʔ
-m	-n	-ŋ	

VOWELS

Monophthongs			*Diphthongs*
i	y	ɯ , u	
e / ə		o	
ɛ	a	ɔ	ai au

- /y/ is a high central vowel.

TONES

má	high
mâ	high falling
mā	mid
mà	low

- Closed syllables occur only with the high and the low tones.

❖ ❖ ❖ ❖ ❖

KAREN (PALAYCHI)

Data Source: Jones 1961 [RBJ-KLS]
Provided by Mr. Lincoln Smith. Palaychi is a Karen village just south of Thandaung (p. 61).

Inventory: Jones 1961 [RBJ-KLS] (pages 74-78)

Secondary Sources: [JAM-Ety]

CONSONANTS

SimpleInitials

p		t		c	k	ʔ
ph		th		ch	kh	
b		d		ǰ		
f	θ	s		š	x	h
		sh				
v		z			ɣ	
m		n				
w		l	r	j		

- Although /ɣ/ is not listed in the inventory on page 75, it occurs as an initial consonant in the data.

Initial Clusters

pw	phw	bw	tw	thw	cw	kw	khw	ʔw
šw	nw	jw	lw					
pl	phl	bl	kl	khl				
pr	tr	kr	shr					
phj	nj							
fv								
sz	shz							

Finals

-q -ʔ

VOWELS

m̩	n̩	
i	y	u
e	ə	o
ɛ	a	ɔ

- /y/ is a “higher mid fronted rounded central vowel” (p. 74).
- “[T]he high back and mid back vowels have voiceless allophones unique to Palaychi.”

TONES

má	high
mà	low

- Each phonemic tone has three allotones, which depend on the presence of /-ʔ/, /-q/, or no final (p. 76).

KAREN (PHO)

Bassein

Data Source: Jones 1961 [RBJ-KLS]

Originally collected in the U. S. from Dr. Florence Taw, a speaker from Moulmein who spoke Burmese, English, Pho, and Sgaw with various relatives, and who taught school in Bassein for many years. It was revised and expanded with the help of Mrs. Rose S. Po (p. 61). Bassein Pho and Moulmein Pho are not completely mutually intelligible.

Inventory: Jones 1961 [RBJ-KLS] (pages 66-70)

Secondary Sources: [JAM-Ety], [AW-TBT]

CONSONANTS

Simple Initials

p		t		c	k	ʔ
ph		th			kh	
b		d				
	θ	s		š	x	
		sh				
					ɣ	
m		n			ŋ	
w		l	r	j		

- Although /w/ is not listed in the inventory on page 68, it occurs as an initial consonant in the data.

Initial Clusters

pw	bw	mw	thw	dw	nw	kw	khw	ʔw	sw
shw	θw	xw	jw	lw					
pl	phl	bl	ml	kl	khl				
pr	tr	thr	kr	θr					
phj	bj								

Finals

-ʔ

- <-n> represents "nasalization of the preceding nucleus" (p. 68).

VOWELS

Monophthongs

Oral				*Nasal*		
i	y	u				
e	ə	o		en	ən	on
ɛ	a	ɔ		ɛn	an	ɔn

Diphthongs

ai au

TONE

má	high
mà	low

- Each phonemic tone has two allotones, which depend on the presence or absence of final /-ʔ/.

❖ ❖ ❖ ❖ ❖

KAREN (PHO)

Moulmein

Data Source: Jones 1961 [RBJ-KLS]

Originally collected in the U. S. from Dr. Florence Taw, a speaker from Moulmein who spoke Burmese, English, Pho, and Sgaw with various relatives, and who taught school in

Bassein for many years. It was revised and expanded with the help of Daw Paw Shin (p. 61). Moulmein Pho and Bassein Pho are not completely mutually intelligible.

Inventory: Jones 1961 [RBJ-KLS] (pages 66-70)

Secondary Sources: [JAM-Ety], [AW-TBT]

CONSONANTS

Simple Initials

p		t		c	k	ʔ
ph		th			kh	
b		d				
	θ	s		š	x	h
		sh				
					ɣ	
m		n		ñ	ŋ	
w		l	r	j		

- /w/ occurs as an initial in the data, although it is not so described in the author's inventory.

Consonant Clusters

pw	bw	mw	thw	dw	nw	kw	khw	ʔw
sw	shw	θw	xw	jw	lw			
pl	phl	bl	ml	kl	khl			
pr	tr	thr	kr					
pj	phj	bj						

Finals

-ʔ

- <-n> represents "nasalization of the preceding nucleus" (p. 68).

VOWELS

Monophthongs

Oral			*Nasal*		
i	y	u		yn	
e	ə	o	en	ən	on
ɛ	a	ɔ	ɛn	an	ɔn

Diphthongs

ai au

- The two diphthongs occur only in stopped syllables (p. 67).

TONES

má	high
mā	mid
mà	low

- Each phonemic tone has two allotones, which depend on the presence or absence of final /-ʔ/.
- The high tone has two realizations: in open syllables, mid with a slight rise; in stopped syllables, high-falling.
- The mid tone has two realizations: in open syllables, mid with a slight fall; in stopped syllables, mid-level.
- The low tone has two realizations: in open syllables, low-falling; in stopped syllables, low-level.
- "Besides the allotonic features of final /-ʔ/, the low tone itself has fairly strong pharyngeal constriction .... Note that the presence of a final /-ʔ/ tends to raise the pitch of the tone" (p. 69).

❖ ❖ ❖ ❖ ❖

KAREN (SGAW)

Bassein

Data Source: Jones 1961 [RBJ-KLS]

Originally collected in the U. S. from Dr. Florence Taw, a speaker from Moulmein who spoke Burmese, English, Pho, and Sgaw with various relatives, and who taught school in Bassein for many years. It was revised and expanded with the help of Mrs. Rose S. Po, a speaker from Bassein (p. 61). Bassein Sgaw and Moulmein Sgaw are mutually intelligible.

Inventory: Jones 1961 [RBJ-KLS] (pages 62-65)

Secondary Sources: [JAM-Ety]

CONSONANTS

Initials

p		t			k	ʔ
ph		th			kh	
b		d				
	θ	s		š	x	h
		sh				
					ɣ	
m		n		ñ		
w		l	r	j		

Consonant Clusters

pw	bw	mw	tw	thw	dw	nw	kw	khw	sw
shw	θw	jw	ñw	lw					
pl	phl	bl	ml	kl	khl				
pr	tr	kr	θr						
pj	phj								
pɣ	phɣ	bɣ	shɣ						

- /ñw/ “occurs only as a variant of /jw/” (p. 64).

Finals

-ʔ

- The glottal stop "occurs in final position in mid and low tones only."

VOWELS

i	y	u
e	ə	o
ɛ	a	ɔ

TONES

má	high
mā	mid
má	low

- The mid and high tones each have two allotones, which depend on the presence or absence of final /-ʔ/. This is different from Moulmein Sgaw, which has two allotones for all three of its phonemic tones.

KAREN (SGAW)

Delugong

Data Source: Dai et al. 1991 [DHFRL]

Collected in Delugong Village (near Rangoon), Zebeding District, Ensen [Ensein] County, Burma

Inventory: Dai et al. 1991 [DHFRL] (pages 388-413)

CONSONANTS

Initials

p		t		tɕ	k	
ph		th		tɕh	kh	
b		d		dʑ		
	θ	s		ɕ	x	h
		sh				
m		n				
w		l	r	j	ɣ	

Initial Clusters

pl	phl	bl	ml	kl	khl
pr	tr	θr	sr		

Final

-ʔ

VOWELS

Monophthongs			*Diphthongs*	
i i̲		u u̲	ui	
e e̲	ə ə̲	o o̲		
ɛ ɛ̲	a a̲	ɔ ɔ̲	uɛ	ia ua

TONES

ma^{55}	high level
ma^{33}	mid level
ma^{31}	low falling

❖ ❖ ❖ ❖ ❖

KAREN (SGAW)

Moulmein

Data Source: Jones 1961 [RBJ-KLS]

Based on information provided by one speaker, Rev. Judson Aung, born in Toungoo in 1913, but grew up in Moulmein; graduated from a Rangoon college; taught in Moulmein; to U.S. for theological training; pastor of a Rangoon Baptist church. "[A]ssumed to be representative of the speech of educated speakers of Sgaw Karen in the area of Moulmein" (p. 3). Moulmein Sgaw and Bassein Sgaw are mutually intelligible.

Inventory: Jones 1961 [RBJ-KLS] (pages 5-13 and pages 62-65)

Secondary Sources: [JAM-Ety]

CONSONANTS

Simple Initials

p		t	c	k	ʔ
ph		th	ch	kh	
b		d			
	θ	s	š	x	ɦ
		sh			
		z		ɣ	
m		n	ñ		
w		l r	j	ŋ	

Initial Clusters

pw	tw	thw	dw	nw	kw	khw	sw	shw
θw	jw	ñw	lw	rw				
pl	phl	bl	ml	kl	khl			
pr	br	tr	thr	kr	θr			
phj	mj							
pɣ	phɣ	bɣ	mɣ	sɣ	shɣ			

Finals

-ʔ

VOWELS

i	y	u
e	ə	o
ɛ	a	ɔ

- "/y/ is a lower high central tense vowel, unrounded but with slight lip protrusion" [ɨ] (p. 8).

TONES

má	high
mā	mid
mà	low

❖

KHALING

Khastap

Data Source: Hale 1973 [AH-CSDPN]

Hale's wordlist is from Sapta Man Khaling, Sueyoshi Toba and Ingrid Toba. The data is from Khastap in Solu Khumbu District.

Inventory: Hale 1973 [AH-CSDPN] (pages 27-28), from [SIT1972a]

CONSONANTS

p	t	c	k	
ph	th	ch	kh	
b	d	j	g	
bh	dh	jh	gh	
	s			h
m	n		ng	
w	l	r	y	

VOWELS

i , ü		u
e , ö		o
āe	ā	a

- Vowel length is not contrastive. The only long vowel in the system is the low central vowel /ā/.

PITCH

'ma	high
ma	low

- There are two contrastive pitches, high and low, the distinctive pitch of the word being carried on the first syllable.

KHAM

Data Source: Watters and Watters 1989 [DNW-KhamQ]

The data is the same as that in [SIL-Kham] and [DNW-Gloss] (although the orthography is different). It is based on the Taka dialect, spoken in Taka (a village in the Baglung District, Dhaulagiri Zone, Nepal; about 1500 speakers). There is dialectal variation from village to village, but as Taka lies in the geographical center of the Kham-speaking area (the Dhaulagiri and Rapti Zones of West Nepal), and because it is recognized as a prestige dialect, this dialect is intelligible to all Kham speakers. The glossary material was provided mainly by one 47-year old man (a former Gurkha soldier) from Taka village ([DNW-Gloss] p. viii).

Inventory: Watters 1973 [DNW-Gloss] (pages viii-xii)

SYLLABLE CANON

(C)(G)V(G)(C)

CONSONANTS

p	t	c	k	
ph	th	ch	kh	
b	d	j	g	
		s		h
		z		
m	n		ng	
	l	r		

- /c ch j s z/ are alveolars [ts tsh dz s z]; they are palatalized before /y i e/.

VOWELS

Monophthongs

Oral			*Nasal*		
i iː		u uː	ĩː		ũː
e eː	ə əː	o oː	ẽː	ə̃ː	õː
	a aː			ãː	

Diphthongs

Oral	*Nasal*
wi wiː yu yuː	wĩː yũː
yo yoː	yõː
ya yaː wa waː	yãː wãː
əy oy	ə̃ːy õːy
ay	ãːy

Triphthongs

Oral	*Nasal*
yay way	yãːy wãːy

- All vowels occur both oral and nasal. Nasalized vowels are always long. Vowels with an offglide do not have a length distinction.
- A period <.> is used to disambiguate syllable boundaries where necessary (e.g. <oy.o> vs. <o.yo>).

TONES

'ma	tense	pitch pattern 1	(clear voice)
'mah	lax	pitch pattern 1	(breathy voice)
ma	tense	pitch pattern 2	(clear voice)
mah	lax	pitch pattern 2	(creaky voice)

- Tone in Kham is a complex correlate of pitch pattern and voice register and is a feature of words (not syllables). Basically, pitch pattern 1 (indicated by < ' >) consists of a high level pitch on the word stem, and a low level pitch on the suffix (if present). Pitch pattern 2 consists of a falling pitch on the stem, and a mid-level pitch on the suffix (if present). (For a more detailed description of tone in Kham, see [AH-CSDPN] pp. 20-22.)

❖ ❖ ❖ ❖ ❖

KHAM

Data Source: Hale 1973 [AH-CSDPN]

Hale's wordlist is from Hasta Ram Buhda, David Watters and Nancy Watters. The data is from Taka in the Baglung District and Sera in the Rukum District

Inventory: Hale 1973 [AH-CSDPN] (pages 19-22), from [DW1971a] and [DW1971b]

Secondary Sources: [JAM-Ety]

Note: The orthography is identical to that of [DNW-KhamQ] (see above), with the following differences:
/ə/ is transcribed <a>; /a/ is transcribed <ā>;
nasalization is marked by <◌̨> under the vowel.

KHEZHA[1]

Data Source: Marrison 1967 [GEM-CNL]

Spoken in the area south of the Chokri by the Khezhama, an Eastern Angami Group. Marrison takes his lexical data from [LSI].

Inventory: Marrison 1967 [GEM-CNL] (pages 351-352)

CONSONANTS

Initials

p	t		ts/ch	k	kr		
	th						
b	d		dz/j			gw	
f	s		sh				h
v	z		zh	gh			
m	n		ny	ng			
mh	nh						
	l	r	y				
	lh	rh					

- Marrison indicates that <ch> and <ts> correspond to /c/; <j> and <dz> correspond to /j/. It is not clear whether this represents allophonic or merely orthographic variation.

VOWELS

Monophthongs			*Diphthongs*
i		u	
e	ü ö	ã o	uo
	a		

- Marrison indicates that <ü> and <ö> correspond to /ə/; <ã> and <o> correspond to /o/.

❖ ❖ ❖ ❖ ❖

[1]Called *Kezhama* in [GEM-CNL]; *Khözha* in [SY-Khözha].

KHEZHA

Pfetsero

Data Source: Yabu 1994 [SY-KhözhaQ]

Collected in Mysore, India in 1992, from a male informant (Kedutso Kapfo), born 1949 in a village near Pfutsero (population: 22,000-25,000) in Phek District, Nagaland State, near the southern border with Manipur State, India.

Inventory: Yabu 1994 [SY-KhözhaQ]

SYLLABLE CANON

T
C(C)V

CONSONANTS

Simple Initials

p	pf	t	ts	c	k	’
ph	pfh	th	tsh	ch	kh	
b	bv	d	dz	j		
	f		s	š		h
	v		z	ž	ɣ	
m		n		ň	ŋ	
mh		nh				
	w	l	r	y		
	wh	lh	rh			

Initial Clusters

kw				
pr	phr	tr	thr	dr

- <ň> represents [ɲ].
- <’> represents [ʔ].
- /mh/ and /nh/ are aspirated nasals, and /lh/ and /rh/ are aspirated liquids.
- /c ch j/ are affricates.

VOWELS

i	ɯ̃	u
e	õ	o
	a	

TONES

má	high
ma	mid
mà	low

KHOIRAO

Data Source: Marrison 1967 [GEM-CNL]
Spoken in North Manipur. Marrison takes his lexical data from [LSI].

Inventory: Marrison 1967 [GEM-CNL] (pages 352-353)

SYLLABLE CANON

(C)V(V/C)

CONSONANTS

Initials

p	t		ch	k	
mp	nt		ñch	nk	
ph	th			kh	
mph	nth			nkh	
b	d		j	g	
	s				h
m	n			ng	
w	l	r	y		
	nl	nr			

Finals

-p	-t	-k
-m	-n	

- <ch> corresponds to /c/.
- Marrison lists <nty yk ykh> as phonemes; these sequences do not appear in the data and are probably errors for <nt nk nkh> respectively.
- The graphs <gh np nph a̤> appear in the data but not in Marrison's inventory.

VOWELS

Monophthongs		*Diphthongs*	
i	u		ui
e	o	ei	ao
a		ai au	

- Marrison also lists <a> among the diphthongs; this is probably a typographical error.

❖

KOKBOROK[1]

Debbarma

Data Source: Karapurkar 1972 [KAR1972]

Spoken in Tripura. The data is taken from the Debbarma dialect which is spoken by the ruling class.

Inventory: Karapurkar 1972 [KAR1972] (notes about consonants: pages 6-25; notes about vowels: pages 25-30; phonemic chart: page 57; list of allophones: pages 55-56)

The transcription of the lexical data is phonetic, not phonemic.

CONSONANTS

p	t	c	č	k	
ph	th	ch	čh	kh	
b	d	j	ǰ	g	
		s	š		h
m	n		ñ	ŋ	
w	l	r	y		

- [c ch j] are dental affricates.
- /c/ is realized as a palatal [č] before front vowels; in other positions it is realized as either [c] or [č], which are in free variation.
- /j/ is realized as [ǰ] before front vowels; in other positions it is realized as either [j] or [ǰ], which are in free variation.
- /čh/ does not appear in the phoneme chart on page 57, but is listed as a phoneme on page 56. It is realized as either [čh] or [š], which are in free variation.
- /s/ is realized as [s] before front vowels; in other positions it is realized as either [s] or [ch], which are in free variation.
- /n/ is realized as [ñ] before [č ǰ].

[1]Called *Tripuri* in [KAR1972].

VOWELS

Phonetic chart

		ɯ , u
I		U
ɛ	ʌ	o
E		ɔ
	a	

Phonemic chart

i		ɯ , u
ɛ	ʌ	ɔ
	a	

- /i/ is realized as [I] (“front lower-high unrounded voiced ”) (p. 25).
- /ɛ/ is realized as [ɛ] (“front higher-low unrounded voiced ”) when followed by [a] in the next syllable, and as [E] (“front mid unrounded voiced ”) elsewhere (p. 26).
- /u/ is realized as [u] (“back high voiced rounded ”) after bilabials in word final position, and as [U] (“back lower-high voiced rounded ”) elsewhere (pp. 27-28).
- Karapurkar writes that /ɔ/ has two allophones [o] and [ɔ] (p. 56), but the distribution of the two is not distinct according to his description. [o] (“mid-back voiced rounded”) occurs in the final position or before non-syllabic [i̯], and [ɔ] (“back higher-low voiced rounded”) occurs “in the medial and the final position” (p. 29).
- The vowels [i u] can be “nonsyllabic” and combine with other vowels, in which case they are transcribed with an underscore, as in [Ii̯ ai̯ oi̯ Ui̯ ɯi̯ Ei̯ au̯]. For example: [pIi̯] ‘father’s sister’ (p. 30).

TONES

ma level

mà low

❖ ❖ ❖ ❖ ❖

KOKBOROK

Gabing

Data Source: Tripura and Jurafsky 1988 [PT-Kok]

The information is from one informant, Prashanta Tripura; Gabing (Gɔbeiñ) dialect, spoken by Prashanta's father. Gabing is characterized by a heavy loss of finals, especially in comparison with the Nairong dialect spoken by Prashanta's mother.

Kokborok is spoken in northeast India (state of Tripura) and neighboring regions of Bangladesh. Heavily influenced by Bengali (loanwords, grammar).

Inventory: Tripura and Jurafsky 1988 [PT-Kok]

CONSONANTS

Simple Initials

p	t		č	k	ʔ
ph	th		š	kh	h
b	d		j	g	
m	n		ñ	ŋ	
w	l	r	y		

- Both <č> and <c> occur in the word list. They are probably in free variation.
- The palatal fricative /š/ is actually pronounced [s]. (In Bengali [s] and [š] are also allophonic.) It is considered to be a palatal because it functions as the aspirated counterpart of /č/. This relationship also holds in the aspiration dissimilation rule.
- /j/ occurs primarily in Bengali loanwords

Initial Clusters

pl	pʰl	bl	kl	kʰl			
pr	pʰr	br	tr	dr	kr	kʰr	gr
km	kʰm						
kʰn							
sp	st	sn	sl	sr			

- Although some of the clusters seem to come from PTB clusters, Jurafsky et al. write "There is some evidence, however, that these clusters should be considered reduced syllables, phonemically speaking" (p. 6).

Finals

(-m)	-n	(-ñ)	-ŋ	-ʔ
-w	(-l)	(-r)	-y	

- The status of these finals is not clear due to influence from the Nairong dialect. /-ʔ -n -ŋ/ certainly exist in the Gabein dialect, but /-m -ñ -r -l/ probably no longer exist in the Gabein dialect. Final /-n/ and /-m/ seem to produce a nasalized vowel, while final /-r/ and /-l/ are dropped. Syllable-final /-r/ is retained, however, in word medial positions.

RHYMES

i		u			auʔ
e	ə	ɔ		əʔ	oʔ
	a			aʔ	
		um			un
		ɔm		en (?)	ən (?)
	am			an	
əiñ					uŋ
				eŋ	əŋ oŋ
					aŋ
		uy			
	əy	ɔy			or ɔr
	ay			ar	

- The glottal stop seems to be dropped sometimes in the two back rhymes which contain it (auʔ and oʔ), apparently in free variation, i.e. au(ʔ), o(ʔ).
- [əiñ] is the phonetic realization of /iŋ/.

TONES

má	high or rising
mà	low or falling

- The contrast may be viewed either as high/low or rising/falling.
- There are 40-50 cases of minimal pairs involving tonal contrast.
- There appears to be some kind of tone spreading from roots to affixes. This implies that affixes do not carry lexical tone.

NOTES

- There is a rule of aspiration dissimilation in Kokborok. If a polysyllabic word contains two aspirates, the second one loses aspiration. If there is a syllable between the two aspirates, this dissimilation goes through it if its initial is a voiced consonant or a liquid or glide.

  Thus, /phaŋ/ 'tree' + /tham/ 'three'
  is realized [phaŋ tam].

KOM REM

Data Source: Toba and Kom 1991 [T-KomRQ]
STEDT Questionnaire. Collected in Manipur State, Northeast India.

Inventory: Toba and Kom 1991 [T-KomRQ]

CONSONANTS

Initials

p	t	č	k	(ʔ)
pʰ	tʰ		kʰ	
(b)	(d)	ǰ	(g)	
f	s	š		h
v	z			
m	n		ŋ	
m̥	n̥		(ŋ̊)	
w	l	r		
	l̥	r̥		

Finals

-p	-t		-k	-h
-m	-n		-ŋ	
	-l	-r		

VOWELS

Monophthongs			*Diphthongs*		
i		u			ui
e	ə	o	ei	əi	oi
	a				

- <ě> also appears in the data but its phonetic value is uncertain.
- Long and short vowels are not marked consistently in [T-KomRQ].

❖

KONYAK

Data Source: Marrison 1967 [GEM-CNL]

Spoken in the northern part of the Tuensang District of Nagaland. Marrison takes his lexical data from [GEM-Kon].

Inventory: Marrison 1967 [GEM-CNL] (pages 353-354)

Secondary Sources: [WTF-PNN]

SYLLABLE CANON

CV(V/C)

CONSONANTS

Initials

p	t	ch	k
ph	th		kh
b	d	j	g
		sh	
m	n	ny	ng
w	l	y	

Finals

-p	-t	-k
-m	-n	-ng

- Marrison indicates that <ch> corresponds to /c/.
- Marrison indicates that <ny> corresponds to /n/. This is probably a typographical error for /ñ/.
- No equivalent is provided for the graph <sh>; the phoneme chart does not include any fricatives.
- Marrison's phoneme chart lists /n/ with both the palatal and the alveloar/dental series. The instance in the palatal series is probably a typographical error for /ñ/.

VOWELS

Monophthongs			*Diphthongs*	
i		u		
e	ü	o	ei	oi
	a		ai	ao

- A number of other vowel sequences not listed in the phoneme charts, including /ea ia iu iei/, appear in the wordlist data. These may be polysyllabic sequences.
- Marrison indicates that <ü> corresponds to /ə/; <ae> corresponds to /au/.

KULUNG

Data Source: Rai et al. 1975 [RPHH-Kul]

Inventory: Boyd Michailovsky (pc), who transliterated Rai's forms from the Devanāgarī

CONSONANTS

p	t	c	k	
ph	th	ch	kh	
b	d	j	g	
bh	dh	jh	gh	
	s			h
m	n		ŋ	
w	r		y	
	l			

VOWELS

Monophthongs			*Diphthongs*		
i		u			ui
e	ə	o	ei	əi əu	
	a			ai	

- /əə aa uu/ also appear in the data, but are rare. Their phonetic value is unclear.

NOTES

- Where a virāma (explicit marker of consonant-final words) was not present in the original Devanagari, Michailovsky has transcribed the final 'inherent vowel' <ə>. However, he suspects that in some of these cases the viram may have been omitted in error.

❖

LAHU

Black/Na

Data Source: Matisoff 1988 [JAM-DL]

From Black Lahu, primarily from the village of Huey Tat (Hwè-tà?) about 65 km north of Chiang Mai, near Chiang Dao. "The variety of Black Lahu that is documented in this Dictionary *... has been identified with the Mə̂n-pù-lón dialect of Burma and is very similar to the Lâhū-nâ? of Yunnan. It should be stressed that there are still very few of these 'true' Black Lahu in Thailand, and that all of them are Christians who were led there from the Kengtung area of Shan State by missionaries ... beginning some 40 years ago" (p. 12).*

Collected during three trips, in 1965-66, 1970, and 1977.

Inventory: Matisoff 1988 [JAM-DL] (pages 14-28)

Secondary Sources: [JAM-Ety], [JAM-GSTC], [JAM-TSR], [JAM-TJLB], [JAM-MLBM]

CONSONANTS

Initials

p	t	c	k	q	
ph	th	ch	kh	qh	
b	d	j	g		
f		š			h
v		y	ǧ		
m	n		ŋ		
	l				

- /c ch j š y/ are realized as their dental counterparts [ts tsh dz s z] before /ɨ/ (p. 22).
- /p ph b m/ are affricated to [pf pfh bv mv] before /u/ (p. 22). /mu/ is often realized as a syllabic labiodental nasal [m̩ɱ].
- /n/ is realized as [ñ] before /i/.

VOWELS

Monophthongs			*Diphthongs*				
i	ɨ	u	wi				
e	ə	o	we	ew			oy
ɛ	a	ɔ	wɛ	ay	wa	aw	

- Diphthongs are rare, and almost always have their origin in fusion, onomatopeia, or foreign loanwords.
- /ay aw/ are realized as [aẹ aọ] (p. 17).
- When /w/ is the first element of a diphthong, it varies in height according to the height of the following main vowel. Thus /we wɛ/ are actually [ọe ɔ̣ɛ] (p. 17).
- /ɨ/ is realized as [ɿ] after the five palatal initials.
- /u/ is realized as [ɯ] after /p ph b m/.

TONES

má	high-rising	[45]
mâ	high-falling	[54]
ma	mid	[33]
mà	low-falling	[21]
mā	very low	[11]
mâʔ	high-checked	[4]
màʔ	low-checked	[2]

❖ ❖ ❖ ❖ ❖

LAHU

Black/Na

Data Source: Chang 1986 [JZ-Lahu]
Sun et al. 1991 [ZMYYC] #33

Collected in Menglangba, Lancang County, Yunnan.

Inventory: Chang 1986 [JZ-Lahu] (pages 4-9)
Sun et al. 1991 [ZMYYC] #33 (pages 279-281)

CONSONANTS

p	t	ts	k	q
ph	th	tsh	kh	qh
b	d	dz	g	
f		s	x	
v		z	ɣ	
m	n		ŋ	
	l			

- The alveolar series /ts tsh dz s z/ is realized as alveolars only before [ɿ]. Before front vowels /i e ɛ/ they are realized as [tɕ tɕh dʑ ɕ ʑ]; before back vowels /ʌ ɔ u ɣ ɯ ɤ/ they are realized as [tʃ tʃh dʒ ʃ ʒ] (note the aberrant behavior of the voiced fricative).

VOWELS

Monophthongs

[JZ-Lahu]			*[ZMYYC]*		
		ɣ	ɿ		
i		ɯ , u	i		ɯ , u
e		ɤ	e	ə	o
ɛ	a	ɔ	ɛ	ʌ	ɔ

- [ZMYYC] /u o ə/ correspond to [JZ-Lahu] /ɣ u ɤ/ respectively.
- [JZ-Lahu] /a/ appears as <ʌ> in the phonological description, but as <a> in the wordlist.
- There seems to be some confusion about the phonemic status of [ɿ] in [JZ-Lahu]. On page 5 it is set up in opposition to /i/ in its effect on preceding alveolar consonants; but on page 8 it is described as an allophone of /i/ occurring after alveolar consonants.

Diphthongs

ui	iu
ei	ou

ia ua ai au

Triphthongs

iau uai

- Diphthongs and triphthongs occur mainly in loanwords; those that appear in native words are often morphologically analyzable. All the diphthongs and triphthongs are written with /ʌ/ in [ZMYYC] rather than with /a/.

TONES

ma^{53}	high falling
ma^{35}	high rising
ma^{33}	mid level
ma^{31}	low falling
ma^{11}	low level
ma^{54}	checked high falling
ma^{21}	checked low falling

- In [JZ-Lahu], tones are represented by Chao tone letters, not numbers.
- In the STEDT database a final glottal stop <ʔ> has been added to checked tone words from [JZ-Lahu], but not to those from [ZMYYC].

❖ ❖ ❖ ❖ ❖

LAHU

Yellow/Xi: Bakeo

Data Source: Bradley 1979 [DB-Lahu]

Collected by the author in Thailand. "There are no pure Bakeo villages in Thailand. Either the Bakeo live with other Christians, or they have mixed with Nyi and Lisu." Bradley uses a modification of the Baptist Lisu orthography in his transcriptions, which is overspecific from a phonemic point of view but is not strictly phonetic

Inventory: Bradley 1979 [DB-Lahu] (phonological information: pages 122-129, orthographic system: pages 81-88)

CONSONANTS

p	pf	t	ts	c	k	k'
hp	hpf	ht	hts	ch	hk	hk'
b	bv	d	dz	j	g	
f			s	sh	h	
v			z	y	g'	
m	mv	n	nv		ng	
		l				

- /h/ is [x]; /g'/ is [ɣ]; <nv> represents [n̪v] (placed in the alveolar column for convenience); /k' hk'/ are back velars which are nearly uvular.
- <pf hpf bv mv> represent labiodental allophones of /p hp b m/ which occur before /u/.

- <ts hts dz s z> are alveolar allophones of palatals /c ch j sh y/ which occur before /uh/.
- <nv> represents an affricated dental nasal allophone of /n/ which occurs before /eu/.
- Zero-initial is realized as [ʔ].

VOWELS

i	uh	u
e	eu	o
eh		aw
	a	

- /eh/ is [ɛ]; /eu/ is [ə]; /aw/ is [ɔ].
- <uh> usually represents the phoneme /ɨ/, but the sequence <uh> is also used to represent an allophone of /u/ (see following note).
- After alveolar affricates and fricatives, <uh> represents a backed allophone of /uh/, approaching [ɯ]; after labiodentals, <uh> represents an unrounded allophone [ɯ] of /u/.
- After /n/ and after palatals, /eu/ is realized as [ʌ].
- Most vowels also occur nasalized in unassimilated loanwords. Nasalization is marked by <-n> following the vowel.
- In addition, there are a number of diphthongs which occur as a result of syllable fusion. They seldom occur and are transcribed <wi we weh ui-i eu-e ai ao>. Those beginning with <w> have a back rounded on-glide; the phonetic values of the others are roughly indicated by the transcription.

TONES

Tone 1	ma˅	long	high level ~ high falling
Tone 2	ma˪	long	half-low falling
Tone 3	ma˗	long	low rising ~ half-high rising
Tone 4	maˍ	long	low level
Tone 5	ma:	long	mid level
Tone 6	ma˄	short	half-high rising ~ high falling
Tone 7	ma˫	short	low level ~ half-low falling

- Tones 1, 3, 6, and 7 have two alternative realizations, one similar to the Banlan realization of that tone, and one similar to the Black Lahu realization. The choice of allotone depends on “the attitude and previous contacts of the speaker” (p. 129).

- The two short tones are checked, with a final glottal stop. Some long syllables, especially in the low level and mid level tones, may include a final glottal stop in citation form or clause-final position as well (p. 129).

❖ ❖ ❖ ❖ ❖

LAHU

Yellow/Xi: Banlan

Data Source: Bradley 1979 [DB-Lahu]

Collected by the author in the course of fieldwork in Thailand. Bradley uses a modification of the Baptist Lisu orthography in his transcriptions, which is overspecific from a phonemic point of view but is not strictly phonetic.

Inventory: Bradley 1979 [DB-Lahu] (phonological information: pages 112-122, orthographic system: pages 81-88 and 120-121)

CONSONANTS

p	pf	t	ts	c	k	
hp	hpf	ht	hts	ch	hk	
b	bv	d	dz	j	g	
f			s	sh		h
v			z	y	g'	
m	mv	n			ng	
		l				

- /g'/ represents [ɣ].
- <pf hpf bv mv> represent labiodental allophones of /p hp b m/ which occur before /uh/ (p. 116).
- The palatal stops [c ch j] are in free variation with palato-alveolar affricates [tʃ tʃh dʒ] (p. 112).
- The palatal phonemes /c ch j sh y/ are realized as alveolar affricates <ts hts dz s z> before /uh/ (p. 116).
- Zero-initial may be realized as [ʔ] (p. 112).
- [ŋi] and [ni] are in free variation (p. 116).

VOWELS

i	u
e	o
	uh , aw
eh	a

- /eh/ is [æ]; /aw/ is [ɔ]; /uh/ is /ʌ/.
- After palatals (which are realized as alveolar affricates or fricatives), /uh/ is lowered to [ɑ̣]. After alveolar and velar phonemes, it is raised to [ɤ] (p. 116).
- Nasalization is marked by <-n> following the vowel. All long vowels occur nasalized; vowels in short syllables (i.e. those in one of the two short tones) are nasalized only in unassimilated loanwords (p. 113).

TONES

ma˅	long	high level	[^{55}]
ma˪	long	high falling	[^{54}]
ma˗	long	low rising	[^{13}]
ma_	long	low level	[^{11}]
ma:	long	mid level	[^{33}]
ma^	short	half-high rising	[$^{\underline{42}}$]
ma‸	short	low level	[$^{\underline{11}}$]

- The high falling tone has a low falling [^{21}] allotone optionally realized in clause- or sentence-final position (p. 119).
- The two short tones are checked, with a final glottal stop which is elided word-medially. The low level and mid level tones are pronounced with a final glottal stop in clause- or sentence-final position as well (p. 117).

LAHULI[1]

Nalda

Data Source: J. D. Singh 1989 [JDS-Lahauli]

"The variety chosen for study here is spoken in Nalda village, Post Office Muring and Tahsil Keylong. The informant, Shri Durga Das ... comes from a high caste and is a native speaker of the dialect."

Inventory: J. D. Singh 1989 [JDS-Lahauli] (pages 41-42)

CONSONANTS

p	t	c	ṭ	ç	č	k
ph	th	ch	ṭh	çh	čh	kh
b	d	j	ḍ	j̣	ǰ	g
bh	dh	jh	ḍh	(j̣h)	ǰh	gh
		s	ṣ		š	h
v		z				
m	n		ṇ		ñ	ŋ
	l	r	ḷ	ṛ	y	

- /c ç č/ are dental, retroflex, and palatal affricates, respectively: [ts tʂ tɕ] (p. 41). Presumably /j j̣ ǰ/ are the corresponding voiced affricates [dz dʐ dʑ].
- /r/ is a trill; /ṛ/ is a flap.

VOWELS

i iː	u uː
e eː	o oː
ə	
a aː	

TONES

ma	level
mà	falling
má	rising

❖

[1]Called *Lahauli* in [JDS-Lahauli].

LAIZO[1]

Data Source: Osburne 1975 [AO-diss]

From three years of work with a male informant, Mr. Sai Ling Thang, who came from the Falam area of Chin State, Burma and is now living in Virginia. The informant also spoke Burmese and English, and had some knowledge of Lushai.

Inventory: Osburne 1975 [AO-diss] (pages 6-64)

SYLLABLE CANON

C(V)V(C)

CONSONANTS

Initials

p	t	tl	tr	c	k	q
ph	th	thl	thr		kh	
b	d					
f	s					h
v	z					
m	n				ng	
hm	hn				hng	
w		l	r			
		hl	hr			

- /q/ is a glottal stop. In combination with other letters <q> represents glottalization.
- /c/ is a voiceless alveopalatal affricate (p. 32).
- /tl thl/ are laterally realeased stops (p. 37).
- /tr thr/ are retroflex stops [ʈ ʈh] (p. 37), but they pattern with liquids /r hr/.

Finals

-p	-t			-k	-q
-m	-n			-ng	
-w	-l	-r	-y		
-wq	-lq	-rq	-yq		

[1]Called *Zahao* in [AO-diss].

VOWELS

Monophthongs

i ii	u uu
e ee	o oo
a aa	

Diphthongs

ia ua

- Monophthongs are always long in word-final position, and short before glottalized finals (pp. 54-55).

TONES

mă	low
mâ	high
má	rising

- The rising tone never occurs with stop finals or glottalized finals (p. 7).
- Short and long vowels in the rising tone are longer than short and long vowels in the other tones (p. 8).

LAKHER[1]

Data Source: R. Lorrain 1951 [RAL-GDL]

Inventory: R. Lorrain 1951 [RAL-GDL] (pages 3-4)

CONSONANTS

p	t		ch	k	
ph	th		chh	kh	
b	d				
	s				h
v	z				
m	n			ng	
hm	hn				
	l	r			
	hl	hr			

- /ch chh/ represent [tʃ tʃʰ].
- /r/ is a trill; /hm hn hl hr/ represent [m̥ n̥ l̥ r̥].
- <h> represents [h] in initial position and [-ʔ] in final position. There are no final consonants other than <-h> [-ʔ].

VOWELS

Monophthongs			*Diphthongs*	
i		u		
e , y	o	aw	yu	
		a ô		ao

- According to the informal, not to say, picturesque, descriptions by Lorrain, the symbols <y a aw o ô yu> seem to represent [ø ɑ ɔ ɤ̃ ɑ̃ øu].

  As an example, Lorrain's description of the pronunciation of <ô> is "a combination of sounds, like ar in the English word ark combined with a short aw sound concluding with a nasal half sound ng and not the full sounded ng as in English; these three sounds must be sounded in one sound with no hiatus between them" (p. 4).
- /a aw e i u/ can be long. Length is indicated by <ˆ> over the vowel.

❖

[1] Also called *Mara*.

LALO

Data Source: Chen 1986 [CK-YiQ]
Spoken in Weishan, Nanjian, Yangbi, Heqing, and Midu Counties, Yunnan.

Inventory: Chen 1986 [CK-YiQ]

CONSONANTS

p	t	ts	tʂ	tɕ	k	
pʰ	tʰ	tsʰ	tʂʰ	tɕʰ	kʰ	
b	d	dz	dʐ	dʑ	g	
f		s	ʂ	ɕ	x	h
v		z	ʐ	ʑ	ɣ	
ʔv						
m	n				ŋ	
ʔm	ʔn					
	l					
	ʔl					

- /m ʔm n ʔn/ may constitute tone-bearing syllables, in which case they are transcribed <m̩ ʔm̩ n̩ ʔn̩> if unconstricted and <m̱̩ ʔm̱̩ ṉ̩ ʔm̱̩> if constricted.

VOWELS

Unconstricted			*Constricted*		
ɿ	ɭ	u̱	ɨ̱	ɭ̱	ʉ̱
i , y		ɯ , u	i̱ , ȳ		ɯ̱
ɪ			ɪ̱		
e		o			
a		ɑ			

- [ɿ ɨ̱] and [ɭ ɭ̱] are allophones of /i i̱/; they are transcribed phonetically.

TONES

ma^{55} ma^{33} ma^{21}

❖ ❖ ❖ ❖ ❖

LALO

Weishan

Data Source: Björverud 1994 [SB-Lalo]
Collected in Longjie Township, Weishan County, Dali Prefecture, Yunnan.

Inventory: Björverud 1994 [SB-Lalo]

SYLLABLE CANON

(1) T
CV

(2) T
N

CONSONANTS

p	t	ts	tj	k	kj	ʔ
ph	th	tsh	tjh	kh	kjh	
b	d	dz	dj	g		
f	s		sj	x		h
v	z		zj	ɣ		
ʔv						
m	n			ŋ		
ʔm	ʔn					
w	l		j			
	ʔl					

- There is some uncertainty as to the phonemic status of the glottal stop; tentatively it is considered the realization of a zero-initial and is not transcribed (p. 4).
- The phoneme /h/ is clearly nasalized; it can be considered the glottalized counterpart of /ŋ/ (p. 5).
- The glides [w] and [j] might be allophones of the zero-initial; for now, however, Björverud treats them as phonemes (p. 6).

VOWELS

Ni		
i , y		u
e	ə	o
	a	
	n	

- /u/ represents a back vowel with labial co-articulation; in the clear register it is similar to [v] (p. 2).
- /e/ is [ɛ] (p. 3).
- /n/ is a syllabic nasal. Its place of articulation is determined by the following phoneme; in final position it varies freely between a dental and velar articulation (p. 3).
- <Ni> represents a nasalized high front vowel, which never occurs with an initial consonant and is distinct from /ni/. In some areas it is pronounced [ʔni] (p. 7).
- Laryngealized vowels tend to be articulated more open than their clear counterparts; /e/ does not occur in laryngealized syllables (p. 6).
- /i/ is realized as [ɿ] after alveolar affricates and fricatives (p. 8).
- Diphthongs and nasal-final syllables also occur as the result of morpheme fusion. Such syllables also display unusual tonal patterns (p. 9).

TONES

	Clear	*Laryngealized*
high	má [^{55}]	
mid	ma [^{33}]	maq [^{33}]
low	mà [^{21}]	màq [^{22}]

❖

LALUNG

Data Source: Balawan 1965 [MB-Lal]

The Lalung people live in Assam and probably number about 40,000. Their biggest village is Umswai, in the West Mikir Hills, and they generally live among the other peoples of the area, the Mikirs, the Assamese, and the Khasis.

Inventory: extracted from Balawan 1965 [MB-Lal], with additional information from Karl-Heinz Grüssner (p.c.)

CONSONANTS

Simple

p	t		ch	k	
ph	th			kh	
b	d		j	g	
	s		sh		h
m	n			ng	
w	l	r			

Clusters

pl	phl	sl	kl	khl	
pr	phr	tr	thr	kr	khr

- As a final consonant <-h> represents [-ʔ]; however, glottal stops are not consistently indicated.
- <ch> represents a voiceless unaspirated affricate.
- /ng/ does not occur initially; /ch j sh/ do not occur finally.
- Geminate consonants and other clusters occur medially.

VOWELS

i		u
e	y	o
	a	

- /y/ represents [ə].

❖

LASHI[1]

Data Source: Dai 1989 [DQ-Lashi]
Data collected by Xu Xijian in Zhongxin Town, Zhongshan Village, Luxi County, Yunnan.
Inventory: Dai 1989 [DQ-Lashi]

CONSONANTS

Initials

p	pj	t	ts	tʃ	k	kj
ph	phj	th	tsh	tʃh	kh	khj
f			s	ʃ	x	xj
v				ʒ	ɣ	
m	mj	n			ŋ	ŋj
w		l		j		

Finals

-m	-n	-ŋ	
-p	-t	-k	-ʔ

VOWELS

Monophthongs

Short, Unconstricted

ɿ		
i , y		u
e	ə	ɔ , o
ɛ	a	

Short, Constricted

ɪ̄		
i̱ , ȳ		u̱
e̱	ə̱	ɔ̱ , o̱
ɛ̱	a̱	

Long, Unconstricted

ɿː		
iː , yː		uː
eː	əː	ɔː , oː
ɛː	aː	

Long, Constricted

ɪ̄ː		
i̱ː , ȳː		u̱ː
e̱ː	ə̱ː	ɔ̱ː , o̱ː
	a̱ː	

[1]Called *Leqi* in [DQ-Lashi].

Diphthongs

Unconstricted	*Constricted*
ui	
ei e:i iə: ɔi ɔ:i , ou	e̱i e̱:i ɔ̱i ɔ̱:i , o̱u
uɛ a:i a:u ia ua	a̱:i a̱:u ia̱ ua̱

- <ə̌> and <ǒ> both appear in the data, although they are not mentioned in the inventory. They may represent reduced vowels.
- All vowels and diphthongs occur in open syllables except /ɛ̱ ia ia̱ ua ua̱ iə:/.
- Not every combination of vowel and final is possible.

TONES

ma^{55} high level
ma^{53} high falling
ma^{33} mid level
ma^{31} low falling

❖

LEPCHA

Data Source: Mainwaring 1898 [GBM-Lepcha]

Manuscripts left behind by Mainwaring were edited by Grünwedel. Although there was no information about the source of the data or the method used, Grünwedel surmises that Mainwaring had collected oral and manuscript information from native speakers (p. i).

Inventory: Mainwaring 1898 [GBM-Lepcha] (pages I-XI)

Secondary Sources: [JAM-Ety]

CONSONANTS

Simple Initials

p	pl	pr	t	ts	č	k	kl	kr		
p’			t’	ts’	č’	k’				
b	bl	br	d		j	g	gl	gr		
f	fl	fr	s		š			h	hl	hr
v			z			a’				
m	ml		n		ny	ṅ		ṅr		
w			l	r	y					

- “*a’* (initial) may be called the basis of the vowels, it may be a sort of guttural spirant often combined with *y*; it is used as a consonant. In some cases *a’yă* corresponds to Tibetan *ɣya* (p. xi)”

Medials

-l- -r- -y-

Initial Clusters

pl	bl	fl	ml	kl	gl			
pr	br	fr	kr	gr	ṅr			
py	p’y	by	fy	vy	my	ty	t’y	dy
ly	ry	ky	k’y	gy	hy			
ply	bly	fly	mly	kly	gly	hly		
pry	fry	bry	kry	gry	hry			

Finals

-p	-t		-k
-m	-n		-ṅ
	-l	-r	

VOWELS

i í		u
e	ă ŭ	o ó
	a á	

- "I cannot give any additions to M[ainwaring]'s notes concerning the pronunciation of the vowels, the only source from which any comments could be drawn being rather unintelligible" (p. xi).
- The acute sign indicates "accentuated" vowels (p. xi).
- The breve sign indicates short vowels, and the sounds of /ă ŭ/ are "nearly identical with the short English a or u" (p. xi).

LI[1]

Data Source: Chen 1986 [CK-YiQ]
Spoken in Dayao, Yao'an, Chuxiong, Nanhua, and Yongren Counties, Yunnan.

Inventory: Chen 1986 [CK-YiQ]

CONSONANTS

p	t	ts	tʂ	tɕ	k
ph	th	tsh	tʂh	tɕh	kh
b	d	dz	dʐ	dʑ	g
f		s	ʂ	ɕ	x
v		z	ʐ	ʑ	ɣ
m	n			ɳ	ŋ
	l				

VOWELS

Unconstricted		*Constricted*	
ɿ		ɿ̄	
i	ɯ , u	i̱	u̱ɪ , u̱
e	ɤ , o	e̱	ɤ̱ , o̱
ɛ			
a		a̱	

TONES

ma^{55} ma^{33} ma^{21}

❖

[1]Also called *Lipho*, Li should not be confused with the Kadai langauge Hlai (sometimes also called Li).

LIANGMEI[1]

Data Source: Marrison 1967 [GEM-CNL]

Spoken in the Zeliang sub-district in the extreme southwest of Nagaland. Marrison takes his lexical data from [GEM-Liang].

Inventory: Marrison 1967 [GEM-CNL] (page 354)

SYLLABLE CANON

(C)V(V)(C)

CONSONANTS

Initials

p	t		ch	k	
mp	nt		nch	ngk	
ph	th			kh	
mph	nth			ngkh	
b	d		j	g	
mb	nd		nj	ngg	
	s		sh		h
	z				
			nʒ		
m	n			ng	
mm	nn			ngng	
w	l	r	y		
		nr			

Finals

-p	-t	-k	-h
-m	-n	-ng	
-mh	-nh	-ngh	

- Marrison indicates that <ch> corresponds to /c/; <sh> corresponds to /ʃ/.
- <-d -h> represent /-t -ʔ/ in final position.

---

[1]Called *Liangmai* in [GEM-CNL].

VOWELS

Monophthongs		*Diphthongs*	
i	u	iu	ui
e	o		ou
a		ia ai ua	

- It appears that the diphthongs /ai ui iu ou/ do not occur in closed syllables.

LIMBU

Data Source: Driem 1987 [SVD-Lim]

From the Phedappe dialect of Limbu as spoken in Tamphula village, Tehrathum district, Kosi zone, Nepal. Data collected by the author on site in 1984 and 1985.

Inventory: Driem 1987 [SVD-Lim] (pages 1-9)

SYLLABLE CANON

$(C_i\ (G))\ V\ (C_f)$

- V = vowel or syllabic nasal.
- G = /y w l/ (with /l/ realized as its allophone [r]).

CONSONANTS

p	t	(ṭ)	c	k	ʔ
ph	th	(ṭh)	ch	kh	
b	(d)	(ḍ)	(dz)	(g)	
(bh)	dh	(ḍh)	(dzh)	(gh)	
	s				h
m	n	(ṇ)		ŋ	
w	l	r	y		
	ʔl				

- Consonants in parentheses appear only in a limited set of Nepali loanwords.
- /c/ represents [tɕ].
- /h/ represents [ɦ].
- /l/ has allophones [l] and [r], but remains phonemically distinct from the phoneme /r/.
- Geminate consonants are distinctive.
- Voiceless consonants (both aspirated and unaspirated) are generally voiced when occurring after a nasal, glottal stop, or intervocalically. These allophones are transcribed as <g gh d dh b bh dz>.
- The glottalized lateral allophone [ʔl] of /t/ and the post-dental allophone [tɕh] of /s/ are transcribed as <ʔl> and <ch> respectively.

VOWELS

i i·		u u·
e·	ə	o·
ɛ ɛ·		ɔ ɔ·
	a a·	

- Vowel length (except for the three mid vowels) is distinctive in both closed and open syllables. Length is marked by <·> following the vowel.
- /ɔ/ is unrounded [ʌ] except after labials.
- Nasalization of vowels is not distinctive except in the Limbu word for 'yes', <ã>, and in a small number of Nepali loans.
- /e·/ is transcribed simply as <e> in certain suffixes.

LISU

Northern/Standard

Data Source: Bradley 1994 [DB-Lisu]

From the Northern dialect of Lisu as spoken in the Nujiang Autonomous Prefecture of northwestern Yunnan. This dialect is spoken in northwestern Yunnan, southern Sichuan, northern Burma and northeastern India. The data for the Chinese dictionary on which [DB-Lisu] is based was prepared between 1953 and 1966, and revised and rechecked between 1974 and 1984. Some further revisions were made by Bradley before the publication of the English version.

Inventory: Bradley 1994 [DB-Lisu] (pages viii-xi)

Note: Transcription normalized in STEDT database. The New Lisu Script transcription was converted into IPA based on the equivalence chart on p. viii. The transcription is primarily phonetic. For more details, seeHandel 1994.

CONSONANTS

p	t	ts	tʃ	tɕ	k	
ph	th	tsh	tʃh	tɕh	kh	
b	d	dz	dʒ	dʑ	g	
f		s	ʃ	ɕ		h
v		z	ʒ		ɣ	ɦ̃
m	n			ɲ	ŋ	
w	l	r		j		

- [ʑ] and [j] are only marginally distinct, and are both transcribed <j>.
- [x] and [h] are only marginally distinct, and are both transcribed <h>.
- Zero-initial is realized as [ʔ], which is not transcribed.
- The palato-alveolar series [tʃ] etc. appear only before the vowels [u] and [ɿ]; their phonemic status is questionable. This series is also used to transcribe Chinese loanwords with retroflex initials.
- [ɦ̃] is a "nasalized cavity fricative"; in the transcription the tilde is placed over the following vowel rather than over the <h>; e.g. [ɦ̃a] is transribed <hã>.
- [ɣ w f r] occur in limited environments; their phonemic status is questionable.

VOWELS

Monophthongs			*Diphthongs*
ɿ			
i , y		ɯ , u	
e , ø		ɤ , ɔ	
æ	a		ja wa

- Nasalization of vowels is marked by <~> over the vowel, but is not phonemic. Vowels are nasalized after the nasalized cavity fricative [ɦ] and after the zero-initial (with the exception of [ɤ]).
- [ɿ] appears only after the palato-alveolar series; its phonemic status is questionable. It is probably realized as a syllabic fricative [ʐ̩] or [ʒ̩].
- The contrast between [e] and [ø] is not observed by most speakers.
- Other diphthongs, not listed here, appear in Chinese loanwords.

TONES

ma^{55} ma^{44} ma^{33} ma^{35} ma^{21} ma^{ʔ21}

- Final glottal stop is considered a tonal element rather than a final consonant.

❖ ❖ ❖ ❖ ❖

LISU

Northern/Standard

Data Source: Anonymous 1959 [Anony1959]

Standard Lisu as spoken on the east bank of the Nu River in Bijiang County, Nujiang Prefecture, Yunnan in the five-district area between Shuangmeigawaji and Zileng'ada.

Inventory: Anonymous 1959 [Anony1959] (6-13)

Secondary Sources: [JAM-TSR]

CONSONANTS

p	t	ts	tʃ	k	
ph	th	tsh	tʃh	kh	
b	d	dz	dʒ	g	
f		s	ʃ	x	h
		z	ʒ	ɣ	
m	n			ŋ	
w	l	r			

- The palato-alveolars are pronounced as true palatals before /i/ and /y/.
- Strictly speaking, [f] is the allophone of /x/ occurring before /u/. But it also occurs before other vowels in Chinese loanwords, and has developed independent phonemic status.

VOWELS

Monophthongs

Oral		*Nasal*	
i	ɯ , u		ɯn , un
e , y	o	en	on
ɛ		ɛn	
a		an	

Diphthongs

(uɯ)

ue io

iɛ uɛ

ua

- /e/ represents [ɪ]; /y/ is its rounded counterpart [ʏ].
- /i/ is realized as [ɿ] after alveolar affricates and fricatives.
- /u/ is realized as a labiodental except after alveolar affricates and before /a/.
- /ɯ/ is realized as [ɻ] after palato-alveolars.
- Nasal vowels occur only with the zero-initial. They are marked by <n> following the vowel.
- /uɯ/ occurs only in Chinese loanwords.

- When not preceded by a consonant, /uɛ/ is pronounced [vɛ]. It can follow a consonant only in Chinese loanwords.
- When not preceded by a consonant, /ue/ is pronounced [ve].

TONES

ma[1]	high level	[55]
ma[2]	mid rising	[35]
ma[3]	mid-high level (constricted)	[44]
ma[4]	mid level	[33]
ma[5]	mid falling	[31]
ma[6]	mid-high falling (constricted)	[42]

❖ ❖ ❖ ❖ ❖

LISU

Northern/Standard

Data Source: Xu et al. 1986 [JZ-Lisu]
Sun et al. 1991 [ZMYYC] #27

[JZ-Lisu]: Collected on the East Bank of the Nu River, North of Suangmeijiawaji and South of Zileng'ada (including Bijiang and Fugong Counties) Nujiang Prefecture, Yunnan.

[ZMYYC]: Collected in Chaiding Village, Jiakedi Town, Fugong County, Nujiang Prefecture, Yunnan.

Inventory: Xu et al. 1986 [JZ-Lisu] (pages 2-9)
Sun et al. 1991 [ZMYYC] #27 (pages 262-264)

CONSONANTS

p	t	ts	tʃ	k	
ph	th	tsh	tʃh	kh	
b	d	dz	dʒ	g	
f		s	ʃ	x	h
v		z	ʒ	ɣ	
m	n		ɳ	ŋ	
	l				

- /tʃ tʃh dʒ ʃ ʒ/ are realized as palatals before /i/ and /ɯ/.

- /n/ and /ɳ/ contrast only before /i/ and /uɑ/; before other vowels both are realized as [n].
- Vowels are automatically nasalized after /h/; this nasalization is not transcribed.
- <h> indicating aspiration is superscripted in our data for [JZ-Lisu] forms.

VOWELS

Monophthongs

Oral		*Nasal*	
ɿ			
i	ɯ , u		ɯ̃ , ũ
e	o	ẽ	õ
ɛ		ɛ̃	
ɑ		ɑ̃	

Diphthongs

(ui)

(io)

iɛ uɛ

uɑ

- Nasalized vowels only occur with the zero-initial.
- /iɛ/ occurs only after initials /p ph b m n/. It is written <iɑ> in [ZMYYC].
- /io/ occurs only after /p/, and only in Chinese loanwords; /ui/ occurs only after velars and palato-alveolars, and only in Chinese loanwords.

TONES

$mɑ^{55}$ $mɑ^{35}$ $mɑ^{44}$ $mɑ^{33}$ $mɑ^{42}$ $mɑ^{31}$

- In [JZ-Lisu], tones are represented by Chao tone letters, not numbers.
- Tone /^{42}/ is transcribed <^{41}> in [ZMYYC].
- In syllables with voiceless initials, [^{44}] varies with [^{33}] and [^{42}] varies with [^{31}].
- /^{44}/ and /^{42}/ are constricted tones. In the STEDT database, underlining <v̲> or a macron <v̄> has been added to vowels in constricted syllables for clarity.

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LISU

Central

Data Source: Bradley 1994 [DB-Lisu]

From the central dialect of Lisu. Central variants of Northern Lisu forms are cited in square brackets after some entries in the dictionary.

The Central Lisu transcription is identical to the Northern Lisu transcription, except that the diphthong /jø/ also appears. Central Lisu also distinguishes [e] from [ø] and [ni] from [ɲi]; neither of these distinctions are present in Northern Lisu. See the inventory of [DB-Lisu] Lisu (Northern/Standard) above.

Inventory: Bradley 1994 [DB-Lisu] (pages vii-xi)

Note: Transcription normalized in STEDT database. The New Lisu Script transcription was converted into IPA based on the equivalence chart on p. viii.

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LISU

Central

Data Source: Fraser 1922 [JF-HLL]

From the dialects of the Têngyüeh and Longling districts in China, and Myitkina, Bhamo and the Northern Shan States in Burma.

Inventory: Fraser 1922 [JF-HLL] (pages 1-5)

Secondary Sources: [JAM-Ety]

CONSONANTS

Initials

p	t	ts	ch	k	
hp	ht	hts	hch	hk	
b	d	dz	j	g	
		s	sh	hh	h
v					
m	n			ng	h’
w	l	r	y		

Medials

-w- -y-

- <hh> represents [x]. Fraser calls this a "guttural h." It only occurs before the vowel /a/, and appears to be in complementary distribution with /h/.
- <h' > represents [h̃], a "nasal h." It indicates nasalization of the entire syllable.
- /v/ sometimes resembles /ū/ in its pronunciation (p. 2).
- <rz> appears as an initial in Fraser's wordlist, but not his chart of sounds. Presumably it is an r-colored voiced dental fricative. It corresponds regularly to [z] in Northern Lisu.
- Palatals /j ch hch sh/ often change to dentals [dz ts hts s] when followed by the back vowels /a o u/.
- The glides in the syllables /waw/, /wu/, and /yi/ are generally not realized as consonantal, but as lengthening of the vowel: [ɔː] [uː] [iː]. These syllables only occur without consonant initial, with one exception: /nyi/ ('day', 'two,' etc.), which contrasts with /ni/ ('evil spirit,' 'red,' 'few,' etc).

VOWELS

Monophthongs			*Diphthongs*	
i , ū	ï	u		
ye , ē		rgh , aw	rghe	
á		a		rgha

- <ï> is the "plain colourless" vowel that follows the affricate consonants.
- In some dialects, /i/ after dental sibilants is realized as [ï], but this distinction is slight, as /i/ is not a cardinal [i]. The distinction is made by older speakers but not by younger speakers.
- /ū/ represents [y].
- /ye/ represents [e]. Fraser writes that the <y> is "somewhat suppressed" in combination with consonants.
- /ē/ represents [ø].
- In some dialects, the distinction between <ye> [e] and <ē> [ø] is lost after labials.
- /rgh/ represents [ɤ]. Fraser describes it as "a plain guttural vowel sound, difficult to describe. Approximated in involuntary retching" (p. 3).
- /aw/ represents [ɔ]. Fraser writes that "many Lisu words have a vowel sound somewhat between [ɔ] and [o]," but as they are difficult to distinguish, he does not indicate them.
- /á/ represents [æ].
- <rgha> and <rghe> probably represent [ɣa ɣe] in initial position, but [ɤa ɤe] as vowels.

- In Lisu, vowels have both oral and nasalized allophones. In combination with oral consonant initials, the vowels are oral. When there is no initial, or when the initial is nasal (including /h'/), the vowels are nasalized. The exceptions are the vowels /a/ and /rgh/, in which there is a contrast between nasal and oral vowels without initials. However, this contrast occurs very rarely, so vowel nasalization is not considered to be phonemic. Nasalization is marked by < ' > following the vowel.

  All cases of combination of oral initials and nasal vowels are borrowings from Chinese words ending in /n/ or /ŋ/.

- <é> is not in Fraser's chart, but it appears in a few syllables in Fraser's wordlist (e.g. <vé^{6}> 'leech', <si^{3}-vé^{3}> 'flower', <vé^{3}-ra^{5}> 'guest'), always following the consonant /v/. This may simply be a typographical error for <vē> (cf. <(yi vē^{3}) vē^{3}> 'blossom') or an allophone of /ye/. It regularly corresponds to [e] in Northern Lisu.

- Fraser mentions a sound called "a slurred," but does not explain its value. He writes that it "should neither be given its full sound value nor entirely omitted." He represents it as <(a)>.

TONES

ma^{1}	high and even
ma^{2}	abrupt, rising
ma^{3}	medium, even
ma^{4}	very slightly lower than tone /^{3}/
ma^{5}	low, even
ma^{6}	low, abrupt

❖ ❖ ❖ ❖ ❖

LISU

Central

Data Source: Burling 1967 [RB-PLB]

"I collected all the data myself or at least checked it personally with speakers of the various languages, largely with students at the University of Rangoon in 1959-60" (p. 4). "Lisu is spoken primarily in the northern Shan States" (p. 2).

Inventory: Burling 1967 [RB-PLB] (pages 22-25, including a chart for conversion from Fraser's [JF-HLL] orthography)

CONSONANTS

p	py	t	ty	ts	c	k	kw		
ph	phy	th		tsh	ch	kh	khw		
b	by	d		dz	j	g	gw		
f				s	š	x		h	hy
				ř	y	ɣ			
m	my	n	ny				ŋw		
w		l	ly						

- /ř/ and /y/ are the voiced equivalents of /s/ and /š/, but they vary in realization from fricatives to continuants. When occurring as a medial, /y/ is always a continuant.
- /w/ is [w] before /o a/ and [v] before /ø, e, æ/. It is intermediate between [w] and [v] before /u/.
- /h/ is nasalized, resulting in non-distinctive nasalization of the following vowel.
- /y/ and /w/ appear as medials other than in the clusters indicated above, but this occurs primarily in Chinese loanwords.

VOWELS

i ɯ	ə u
e ø	ʌ o
æ	a

- Nasalization of vowels is not marked, since it only occurs predictably after /m n ŋ h/.

TONES

má	very high
mă	mid, gently rising
mâ	rising-falling
mā	mid level
mà	very low
maʔ	stopped

- The rising-falling tone <mâ> consists of a "[s]light rise, followed by a somewhat pronounced fall." The vowel is slightly glottalized.

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LISU

Southern

Data Source: Hope 1972 [ERH-DSLS]
Based on the dialect of Lisu spoken in Thailand.

Inventory: Hope 1972 [ERH-DSLS] (vii-x)

CONSONANTS

p	t	ts	k	ʔ
ph	th	tsh	kh	
b	d	dz	g	
f		s	x	h
v		z	ɣ	
m	n		ŋ	
	l			

- Labialization is indicated by <w> and palatalization by <y> following the initial consonant; these are suprasegmentals in Hope's phonological system.
- Alveolar consonants becomes alveopalatal or palatal when followed by /y/. Alveolar stops have an affricated release when followed by the combination /yɨ/ (p. viii).
- /w/ is realized as a labio-dental fricative when followed by /ɨ/ or /u/.

VOWELS

i	ɨ	u
e	ə	ɔ
æ		a

- Laryngealization (considered suprasegmental by Hope) is marked by <◌̰> under the vowel. It is articulated as glottalization of the nuclear vowel in low-tone syllables, and as tenseness of the nuclear vowel in mid-tone syllables (p. ix).
- The high vowels /ɨ/ and /u/ are articulated with simultaneous frication when following /w/ or /y/ (p. ix).
- The vowel /e/ is articulated with rounding in labialized syllables. For example, /twe/ is realized as [tø] (p. ix).
- Adjacent syllabic vowels may optionally lose their syllabicity, fusing into a diphthong. Where such a syllable reduction is usual, the two vowels are joined by a hyphen <-> in the transcription.

TONES

má	high
mâ	high-fall
mă	mid-rise
ma	mid
mà	low

LOLOPHO[1]

Data Source: Dai 1989 [DQ-Lolopho]

Inventory: Dai 1989 [DQ-Lolopho]

CONSONANTS

p	t	ts	tʂ	tɕ	k
ph	th	tsh	tʂh	tɕh	kh
b	d	dz	dʐ	dʑ	g
f		s	ʂ	ɕ	x
v		z	ʐ	ʑ	ɣ
m	n			ȵ	ŋ
	l				

VOWELS

Unconstricted		*Constricted*	
ɿ	ʏ	ɿ̱	ʏ̱
i	ɯ	i̱	ɯ̱
e	ɤ , o	e̱	ɤ̱ , o̱
ɛ	ɒ	ɛ̱	ʌ̱

- There are no examples of /ʏ̱/ or /ʌ̱/ in the data.

TONES

$mɒ^{55}$	high level
$mɒ^{44}$	mid-high level
$mɒ^{33}$	mid level
$mɒ^{31}$	low falling

❖

[1]Called *Yi (Lolophu)* in [DQ-Lolopho].

LOTHA[1]

Data Source: Acharya 1975 [ACH1975]

Spoken in the Wokha District of Nagaland.

Inventory: Acharya 1975 [ACH1975] (phonemic charts: pages 10-11; vowel chart: page 19; consonant chart: page 27)

The transcription of the lexical data is phonetic, not phonemic.

CONSONANTS

Phonetic chart

p	pf	t	ts	c	k	
ph		th	tsh	ch	kh	
	pv					
	f		s	š		h
	v		z	ž		
m		n		ñ	ŋ	
m^h		n^h		$ñ^h$	$ŋ^h$	
		l	r			
w		l^h	r^h	y		

- /c ch/ are palatal affricates.
- /p k m/ are unreleased when they occur word-finally. This is represented as [p> k> m>].
- /t th n n^h/ are realized as dentals [t̪ t̪h n̪ n̪^{h}]. In addition, /t/ is realized as [d̪] when it occurs after a homorganic nasal.
- [g] is an allophone of /k/ which occurs medially before /r/, as in [t̪ēgrə̀] ‘honey bee’. It also occurs intervocalically in only one example: [sə̄n̪rə̄gà] ‘rainbow’.
- /m^h n^h $ñ^h$ $ŋ^h$/ are voiced aspirated nasals.
- /l^h/ is a voiced aspirated alveolar lateral.
- /r/ is a voiced unaspirated alveolar trill. /r^h/ is a voiced aspirated alveolar trill.

VOWELS

i		u
e	ə	o
	a	

[1] Also called *Lotha Naga*.

- /i u/ are realized as [I U] when they occur in the first syllable with a falling tone. These are "lower high" vowels.

TONES

má	rising
mā	level
mà	falling

- The author says that yet another tone (rising-falling tone) is found in a few words, which he suspects are remnant loanwords from an unidentified donor language which had more tones (p. 17).

❖ ❖ ❖ ❖ ❖

LOTHA

Data Source: Marrison 1967 [GEM-CNL] (page 355)

Spoken in the western part of the Mokokchung District of Nagaland. Marrison takes his lexical data from [WIT-Lotha].

Inventory: Marrison 1967 [GEM-CNL] (page 355)

SYLLABLE CANON

(C)(C)V(C)

CONSONANTS

Simple Initials

p	pf	t		ts/ch	k	
ph		th		tsh/chh	kh	
	f/fh	s		sh		h
	v	z		zh		
m		n		ny		
mh		nh		nyh	ngh	
w		l	r	y		
		lh	rh	hy		

Initial Clusters

py	phy	my	mhy	ly	ky	khy		
thr								
thry								
mp	mph	mb	mm	nt	nth	ns	nz	nn
ndr	nl	nch	nsh	nny	ngk	ngkh		

Finals

-p	-t	-k
-m	-n	-ng

- Marrison indicates that <ch> and <ts> correspond to /c/; <f> and <fh> correspond to /f/. It is not clear whether this represents allophonic or merely orthographic variation.
- <sh ny nyh> correspond to /ʃ ñ ñh/ respectively.
- Marrison does not indicate the value of <tss>.
- Marrison indicates that <zh> corresponds to /ʒ/, but does not list /ʒ/ in his phoneme chart. The omission is probably a typographical error.
- <tchh> appears in some forms in the data from this source; the value of this orthographic sequence is uncertain.

VOWELS

i		u
e	ü	o
	a	

- Marrison indicates that <ü> corresponds to /ə/.

❖

LUQUAN[1]

Data Source: Ma 1948 [MXL-Lolo]

Inventory: Matisoff 1979 [JAM-Quo] (page 20), normalized from [MXL-Lolo]
The charts below have been modified to reflect the data as it appears in [JAM-TSR].

Secondary Sources: [JAM-TSR]

CONSONANTS

p	t	ts	ʈ	tʂ	tš	k	k^w	ʔ
p‘	t‘	ts‘	ʈ‘	tʂ‘	tš‘	k‘	$k‘^w$	ʔh
mp‘	nt‘	nts‘	nʈ‘	ntʂ	ntš‘	ŋk‘	$ŋk‘^w$	
b	d	dz	ɖ	dʐ	dž	g	(g^w)	
f		s		ʂ	š	x	x^w	
v		z		(ʐ)		ɣ	$ɣ^w$	
m	n		ɳ		ñ	ŋ	$ŋ^w$	
	l							
	hl				y			

- There appears also to be a series of voiceless nasal initials, e.g. <n̥a 11> ‘brains’.
- The palatal series /tš/ etc. is written /tɕ/ etc. in [MXL-Lolo].

VOWELS

	ʐ̩	ɣ̩
i , y		ɯ , u
I		
e	ɚ	ɤ
ɛ		ɔ
	a	ɐ

- /I ɯ ɤ ɛ ɔ/ are not common.

[1]Mistranscribed *Lü-ch’üan* in [JAM-Quo], [JAM-TSR]. Referred to as “Lolomaa” in Matisoff’s notes to Benedict 1972 (e.g. note 123, p. 38).

TONES

ma 55	high
ma 55c	high constricted
ma 44s	high stopped
ma 33	mid
ma 22s	low stopped
ma 11	low

- In [MXL-Lolo], [JAM-GSTC], [JAM-MLBM], and [JAM-TIL] tones are indicated by superscript numbers, e.g. <ma^{55} ma^{33} ma^{11}>. In these sources constriction is indicated by an underscore below the vowel.
- In [JAM-Quo], there are only four tones indicated: <55 33 11 1°1> (the latter low stopped).

LUSHAI[1]

Data Source: Lorrain 1940 [JHL-Lu]

Collected over forty years in the "Lushai Hills", first at Fort Aijal in the North Lushai Hills and then at Serkawn in the South Lushai Hills.

Inventory: Lorrain 1940 [JHL-Lu] (pages x-xi)

Secondary Sources: [JAM-GSTC], [JAM-Ety], [STC]

CONSONANTS

Initials

p	t	tl	ṭ	ch	k	
ph	th	thl	ṭh	chh	kh	
b	d				(g)	
f				s		h
v				z		
m	n				ng	
hm	hn				hng	
		l	r			
		hl	hr			

Finals

-p	-t			-k	-h
-m	-n				
	-l		-r		
	-lh		-rh		

- /ṭ ṭh/ are pronounced "with the tongue against the bars of the roof of the mouth".
- /ch chh/ represent [tʃ tʃh]; /s/ and /z/ vary in articulation from dental to post-alveolar.
- /g/ is found only in loanwords.
- In syllable-final position, <-h> represents /-ʔ/.

[1]Now often called *Mizo*.

VOWELS

Monophthongs

î	û
i	u
ê	o
e	a , âw
	â , aw

- /î û ê â/ represent the long vowels [i u e ɑ].
- /i u e a/ represent the short vowels [ɪ ʊ ɛ ʌ].
- /aw/ is "like *o* in English words *pot*, *on*, *ox*, etc."; thus: short [ɒ].
- /âw/ is "like *aw* in the English words *awl*, *bawl*, etc."; thus: long [ɔ].
- /â î û/ are often written without the accent mark, as <a i u>, when at the end of a syllable.
- It appears that Lorrain is describing a six-vowel system with contrastive length which is neutralized in open syllables.
- The vowels combine to form diphthongs and triphthongs which are not described explicitly by Lorrain.

TONES

- Lushai is a tonal language, but tones are not indicated in Lorrain's dictionary. Lorrain was aware of tonal differences: "There are three main tones—the upward, the downward, and the level. But there are also other intermediate ones. Rather than lumber this Dictionary with diacritical marks, in an attempt to indicate these different tones, I have omitted them altogether" (p. xv).

LÜSU

Data Source: Dai et al. 1991 [DHFRL]
Collected in Kala Town, District Two, Muli County, Liangshan Prefecture, Sichuan.

Inventory: Dai et al. 1991 [DHFRL] (pages 132-152)

INITIALS

Simple

p	t	ts	tʂ	tɕ	k	
ph	th	tsh	tʂh	tɕh	kh	
b	d	dz	dʐ	dʑ	g	
f		s	ʂ	ɕ	x	h
v		z	ʐ	ʑ	ɣ	ɦ
m	n			ȵ	ŋ	
w	l			j		
	ɬ					

Cluster

nph	nb	nth	nd	ntsh	ndz	ntʂh	ndʐ	ndʑ	nkh	ng
pʑ	phʑ	bʑ	nbʑ							
phʐ	nphʐ	nbʐ								
ptsh										
sk										

- Before the vowel /ʉ/, the dental stops /t th d/ etc. are pronounced with some lip trill.
- Fricatives which are the last element of a consonant cluster may be pronounced as affricates, e.g. [nphʐɯ^{35}] ~ [nphtʂɯ^{35}] ‘steal’.
- There is only one example of the /sk/ cluster, [skŋ̍^{53}] ‘seven’.
- There are no examples of a cluster /ntɕh/. The cluster /ptsh/ occurs only twice.
- Word-initially, the nasal component of prenasalized clusters is not always realized. Medially, it has the effect of nasalizing the preceding vowel and is not itself pronounced.
- Editor’s note: Note that only the voiceless aspirated and voiced series of obstruents may be prenasalized. This is similar to the restrictions on the occurrence of the /m-/ and /ḥ-/ prefixes of Written Tibetan.

RHYMES

ɿ i , y e æ	ʉ	ɯ , u o a	ĩ (ẽ)	ũɯ , ũ õ ã
(ie) iæ iæ̃ uæ		iu iũ uo ua (uã)	(ei) (uei) (əu)	ai (au)
æɹ	əɹ	ɯɹ oɹ aɹ		(uŋ) (oŋ) (aŋ) (uaŋ)

- /e/ is read fairly closed, and after palatals is pronounced [ɪ].
- /ʉ/ is labiodentalized to [ʯ] after retroflexes and velars.
- [əɹ] and [ʐ̩ə] are in free variation.
- [iu] appears only after the initial /l/, where it is in free variation with [i].
- Finals with velar nasal coda generally only appear in Tibetan and Chinese loanwords. The finals /ẽ ie uã əu au ei uei/ also only appear in Chinese loanwords.
- Syllabic /ŋ̩/ serves as a rhyme in a few words.

TONES

ma^{53} ma^{35} ma^{31} ma^{33}

- The [^{33}] tone never occurs in isolation, only in polysyllabic forms. Some of its occurrences are realizations of the /^{35}/ and /^{31}/ tonemes.
- The /^{53}/ tone is sometimes realized as [^{55}]. When followed by another /^{53}/ tone, it is always realized as [^{55}].

MAGARI

Yanchok

Data Source: Hale 1973 [AH-CSDPN]

Hale's wordlist is from Krishna Bahadur Thapa Magar, Gary Shepherd and Barbara Shepherd. The data is from Yanchok, three miles east of Bandipur in Tanahu District of Gandaki Zone. The Yanchok material was supplemented by words from Arakhala of Palpa District of Lumbini Zone, as some native Magari words were replaced by Nepali loanwords in Yanchok.

Inventory: Hale 1973 [AH-CSDPN] (pages 18-19)

The phonological analysis follows that of [GBS1971].

Secondary Sources: [JAM-Ety]

CONSONANTS

p	t	T	c	k
b	d	D	j	g
m	n			ng
	s			
w	l	r	y	

- /T D/ represent [ʈ ɖ].

VOWELS

i ị		u ụ
e ẹ	a ạ	o ọ
	ā ą̄	

- Nasalization is distinctive for all vowels. It is marked by <◌̣> under the vowel.
- The mid-central vowel /a/ is found almost exclusively in loanwords.

NOTES

- Breathiness is a contrastive feature of Magari syllables. It is realized as a lowering of the pitch of the entire syllable, and as aspiration of voiceless initial consonants or as breathiness of voiced initial consonants.

  Alternatively, what is here referred to as breathiness could be treated as a series of consonants occurring in syllable initial position /ph th Th ch kh bh dh Dh jh gh sh mh ng ngh lh rh wh yh h/. This is how they are indicated in the word list orthography. Hale favors the analysis of breathiness as a feature of syllables rather than of consonants since they can be illustrated in terms of breathiness patterns in Magari

verbs. There are four types of Magari monosyllabic verb stems: 1) clear verb stems taking clear suffixes, 2) clear verb stems taking breathy suffixes, 3) breathy verb stems taking clear suffixes, and 4) breathy verb stems taking breathy suffixes.

Thus there are two otherwise identical sets of verb suffixes in Magari: breathy and clear. The following illustration is from [AH-CSDPN] (p. 19).

	Clear Stem		*Breathy Stem*	
Clear Affix	pā-ke dā-ke	to learn to put away	mhat-ke bha-ke	to forget to separate
Breathy Affix	pā-khe bā-khe	to search to alight	cha-khe khyo-khe	to pierce to come out

- There is fluctuation between nasalized vowels and vowels followed by velar nasal consonants. In addition, word inital velar nasals are sometimes elided, resulting in the nasalization of a following vowel. The forms containing nasalized vowels can be considered "normal speech", whereas the nasal consonant plus vowel or vowel plus nasal consonant sequences should be recognized as characteristic of "slow distinct speech".

MANANG

Gyaru

Data Source: Nagano 1984 [YN-Man]

From work in Kathmandu with one male informant, aged 28, from Gyaru village of Manang district but resident mostly in Kathmandu for 14 years.

Inventory: Nagano 1984 [YN-Man] (pages 203-205)

SYLLABLE CANON

T
C(G)V(V)(C)

CONSONANTS

Initials

p		t	ts	tr	c	k	?
b		d	dz	dr	j	g	
			s		sy		h
m	my	n			ny	ng	
w		l		r	y		
		hl		hr			

Medials

-w-	-l-	-r-	-y-

Finals

				-k	-ʔ
-m	-n			-ng	
-w	-l	-r	-y		

- Stops and affricates: /b d dz j g/ are phonetically voiceless unaspirated [p t ts c k]; while /p t ts c k/ are phonetically aspirated [p^h t^h ts^h c^h k^h].
- /tr/ and /dr/ are retroflex.
- /hl/ and /hr/ are voiceless liquids.

VOWELS

i ii	u uu
e ee	o oo
a aa	

- /u/ is realized as [ɯ].
- The vowel [ʌ] exists, but Nagano interprets it as /wa/ pronounced in fast speech.

TONES

ma[1]	markedly high (like step-up tone)
ma[2]	high level [44] or high rising [45]
ma[3]	low level [22] or low rising [23]
ma[4]	remarkably low

- Tone 4 is often accompanied by breathiness of the vowel and voicing of the initial.

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MANANG

Prakaa[1]

Data Source: Hoshi 1984 [HM-Prak]
From work in Kathmandu with one female informant, aged 48, from Prakaa village of Manang district but resident in Kathmandu for ten years.

Inventory: Hoshi 1984 [HM-Prak] (pages 135-137)

Secondary Sources: [MM-Thesis]

SYLLABLE CANON

T
C(C)V(V)(C)

[1]Called *Praka* in [MM-Thesis].

CONSONANTS

Initials

p	t	ts	ṭ	c	k	'
ph	th	tsh	ṭh	ch	kh	h
		s		sh		
m	n			ny	ng	
w	l		r	y		
	l̥		r̥			

Initial Clusters

pw	phw	mw	tsw	kw	khw	ngw
pl	ml	l̥l				
pl̥						
pr	mr	kr				
pr̥	kr̥					
py	phy	my	ty	thy	shy	ky	khy

Finals

-p							-k
-m							-ng
			-l		-r		

- /' / represents glottal stop [ʔ].
- /c ch sh ny r/ are phonetically [tɕ tɕh ɕ ɲ ɹ] respectively.
- /ṭ ṭh/ are phonetically [t th].

VOWELS

Oral			*Nasal*		
i ii		u uu	iN		uN
e ee	ə	o oo	eN	əN	oN
	a aa			aN	

- Nasalization is marked by <N> following the vowel.
- “There still remains some ambiguity in the length of vowels” (p. 137).

TONES

ma[1]	high rising	[45]
ma[2]	high falling	[42]
ma[3]	mid level	[33]
ma[4]	low falling	[21]

- "The same tone patterns found on monosyllabic words are spread out on polysyllabic words" (p. 135).

MAO

Data Source: Marrison 1967 [GEM-CNL] (pages 356-357)

Spoken in the extreme north of Manipur. Marrison takes his lexical data from [GEM-Mao].

Inventory: Marrison 1967 [GEM-CNL] (pages 356-357)

SYLLABLE CANON

(C)(C)V

CONSONANTS

Initials

p	pf	pr	t		ts/ch	k	kr	
ph		phr	th			kh	khr	
b	bv		d		dz/j			
	f		s		sh			h
	v				zh			
m			n			ng		
						ngh		
w			l	r	y			
				rh				

- Marrison indicates that <ch> and <ts> correspond to /c/; <j> and <dz> correspond to /j/. It is not clear whether this represents allophonic or merely orthographic variation.
- <sh zh> correspond to /ʃ ʒ/ respectively.
- Marrison indicates that <zh> corresponds to /ʒ/, but does not list /ʒ/ in his phoneme chart. The omission is probably a typographical error.
- The source also indicates a correspondence between <ng> and /n/ but this is likely a typographical error, and should state that <ng> corresponds to /ŋ/.
- The correspondence between <ngh> and /h/ appears to be an error for a correspondence between <ngh> and /ŋh/.

VOWELS

Monophthongs			*Diphthongs*	
i		u		
e	ü	o	ei	oi
	a		ai	

- Marrison indicates that <ü> corresponds to /ə/.

❖

MARAM

Data Source: Marrison 1967 [GEM-CNL]
Spoken in Manipur. Marrison takes his lexical data from [WM-Cha] .

Inventory: Marrison 1967 [GEM-CNL] (page 357)

SYLLABLE CANON

(C)V(V/C)

CONSONANTS

Initials

p	t		ch	k
ph	th			gh
b	d			g
	s			h
m	n			ng
w	l	r	y	

Finals

	-t	-k
-m	-n	
	-l	

- Marrison indicates that <gh ch> correspond to /kh c/ respectively.

VOWELS

Monophthongs		*Diphthongs*	
i	u		
e	o	ei	oi
a		ai	au

❖

MARING

Data Source: Marrison 1967 [GEM-CNL]
Spoken in the southeast of Manipur State. Marrison takes his lexical data from [LSI].

Inventory: Marrison 1967 [GEM-CNL] (pages 357-358)

SYLLABLE CANON

(C)V(V/C)

CONSONANTS

Initials

p	t		ch	k	
ph/f	th			kh	
b	d		j		
f	s				h
m	n			ng	
w	l	r	y		

Finals

-p	-t		-k
-m	-n		
	-l	-r	

- Marrison indicates that <ph> and <f> correspond to /ph/. It is not clear whether this represents allophonic or merely orthographic variation.
- <ch> corresponds to /c/.

VOWELS

Monophthongs		*Diphthongs*	
i	u		ui
e	o	ei	oi
a		ai	au

❖

MARU[1]

Data Source: Burling 1967 [RB-PLB]
"I collected all the data myself or at least checked it personally with speakers of the various languages, largely with students at the University of Rangoon in 1959-60" (p. 4).

Inventory: Burling 1967 [RB-PLB] (16-22)

SYLLABLE CANON

T
(C)(G)V(V/C)

CONSONANTS

Initials

ph	phy	th		tsh	ch	kh	khy	
p?	p?y	t?		ts?	c?	k?	k?y	
p	py	t		ts	c	k	ky	
				s	š			h
					y	ɣ		
m	my	n	ny			ŋ		
m?	m?y	n?	n?y			ŋ?		
w		l		(r)				
		l?						

Medials

(-w-)	-y-	

Finals

-p	-t	-k	-?
-m	-n	-ŋ	

- /y/ is fricated considerably and is interpreted as the voiced counterpart of /š/ (p. 20).
- /h/ has some degree of pharyngeal constriction as well as glottal friction (p. 20).
- The question mark is used for glottal stops. /?/ after stops, nasals, and [l] imposes creaky vocalization on the following vowel, as in Zaiwa (p. 16).
- A very small number of Maru words, judged to be borrowed, have medial /-w-/.

[1]Called *Langsu* in [DQ-Langsu]

VOWELS

Monophthongs		*Diphthongs*
i	u	
e , (ö)	o	oi
a		ai au

- Diphthongs occur only in open syllables.
- /i u e/ generally do not occur without final consonants.
- In a few words the front mid rounded vowel [ö] occurs, sometimes with the variant [öi]. This vowel is assumed to be the result of borrowing (p. 21).
- The most common combinations of vowels and final consonants are /it in e? uk un um o? ok oŋ at ap ak am aŋ/. Some other combinations also exist, but are much rarer, and may have been introduced through borrowed words (p. 21).

TONES

/má(N)/	high level
/mā(N)/	mid level
/mà(N)/	low falling
/mák/	high stopped
/màk/	low stopped
/m?ak/	stopped creaky
/mă/	'weak' or toneless syllables

- In open and nasal-coda syllables the low falling tone is a bit shorter than the mid level and high level tones. It differs from the mid tone more in contour and length than in pitch; the mid and high tones are "moderately long" and differ only in pitch (p. 21).
- In stopped syllables, there are low and high tones.
- Creaky stopped syllables do not bear tone; they occur with glottalized initials (p. 22).
- Unlike toneless syllables in Burmese and Zaiwa (Atsi), those in Maru occasionally alternate with syllables having full tone. The glottalized quality of vowels following glottalized stops does not occur in toneless syllables (p. 22).

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MARU

Data Source: Dai 1989 [DQ-Langsu]
Data collected by Xu Xijian in Taishan, Luxi County, Yunnan.

Inventory: Dai 1989 [DQ-Langsu]

CONSONANTS

Initials

p	pj	t	ts	tʃ	k	kj
ph	phj	th	tsh	tʃh	kh	khj
f			s	ʃ	x	
v				ʒ	ɣ	
m	mj	n			ŋ	ŋj
		l		j		

Finals

-p	-t	-k	-ʔ
-m	-n	-ŋ	
	-r		

- /-r/ occurs only with the vowel /ə/.

VOWELS

Monophthongs

Unconstricted			*Constricted*		
i		u	i̱		u̱
ɛ , ø	ə	ɔ	ɛ̱ , ø̱	ə̱	ɔ̱
	a			a̱	
ɛ̃		ɔ̃	ɛ̱̃		ɔ̱̃

Diphthongs

Unconstricted			*Constricted*	
	ui			u̱i
	ɔi			ɔ̱i
ai	au		a̱i	a̱u

- The nasal vowels /ɛ̃ ɛ̱̃ ɔ̃ ɔ̱̃/ do not occur with final consonants.

TONES

ma^{55} ma^{35} ma^{31}

❖

MEITHEI[1]

Data Source: Abbi and Mishra 1985 [AAK-SSM]

From "approximately forty native speakers ... living in Imphal, the capital of Manipur, India. Interviews, questionnaires, narratives, songs, and dialogues were used" (p. 81).

Inventory: Abbi and Mishra 1985 [AAK-SSM] (pages 81-92)

SYLLABLE CANON

(C)(V̲)V(V̲/C)

CONSONANTS

Simple Initials

p	t		c	k
ph	th			kh
b	d		j	g
(bh)	(dh)		(jh)	(gh)
	s			h
m	n			ŋ
w	l	r	y	

- Voiced aspirates occur only in borrowings (p. 82).

Initial Clusters

dw	jw	kw	khw	sw						
pl	kl	khl	gl	sl						
br	phr	dhr	jr	cr	dr	tr	gr	kr	khr	ŋr
dhy	gy	ky	khy	ŋy	hy					

Medial Geminates

-pp-	-tt-	-cc-	-kk-
-mm-	-nn-		-ŋŋ-
-ww-	-ll-	-yy-	

- Geminates occur only in medial position (p. 87).

---

[1]Called *Meitei* in [AAK-SSM]; *Manipuri* in [CHE1990].

Finals

-p	-t	-k
-m	-n	-ŋ
-w	-y	

- Finally, [-l] can occur in place of [-n] (p. 91).

VOWELS

i		u
e	ə	o
	a	

❖ ❖ ❖ ❖ ❖

MEITHEI

Data Source: Chelliah 1990 [CHE1990]

Inventory: Chelliah 1990 [CHE1990] (pages 28-30)

CONSONANTS

p	t	c	k	
p^h	t^h	c^h	k^h	
(b^h)	(d^h)	(j^h)	(g^h)	
				h
m	n		ŋ	
w	l	y		

- /b^h d^h j^h g^h/ occur only in borrowings.
- Chelliah claims (p. 28) that the voiced stops [b d j g] are not phonemes.
- /l/ is in free variation with [n] word-finally and is realized as [r] intervocalically.
- Chelliah treats phonetic [s] and [s^h] as belonging to the phoneme /c^h/, because [s] and [s^h] trigger the same rules as “the other phonemes in the aspirated series” (p. 29).

VOWELS

i		u
e	ə	o
	a	

❖ ❖ ❖ ❖ ❖

MEITHEI

Data Source: I. Singh 1975 [SIN1975]

Inventory: I. Singh 1975 [SIN1975] (pages 59-72)

CONSONANTS

Initials

p	t	c	k	
ph	th	ch	kh	
b	d	j	g	
bh	dh	jh	gh	
	s	š		h
m	n		ŋ	
w	l	r	y	

Finals

-p	-t	-c	-k	
-b	-d	-j	-g	
	-s			
-m	-n		-ŋ	
	-l	-r		

- /c ch j jh/ are affricates.
- Word-finally, [n] and [l] are in free variation, at least in some words.

VOWELS

i iː	u uː
eː	oː
a aː	

- Length is not distinctive for /i/ and /u/ in open syllables.

TONES

má	rising
ma	level
mà	falling

- Other sources on Meithei ([AAK-SSM], [CHE1990]) do not distinguish tones.

❖

MELURI

Data Source: Marrison 1967 [GEM-CNL]

Spoken in the three villages of Meluri, Lephori, and Sahunyun. Marrison takes his lexical data from [JPM-Reng].

Inventory: Marrison 1967 [GEM-CNL] (pages 358-359)

SYLLABLE CANON

(C)V

CONSONANTS

p		pr	t	ts/ch	k	kr	kw	
ph		phr	th		kh	khr	khw	
	pf		s	sh				h
	v		z					
m			n	ny	ng			
w			l	r				
wh				rh				

- Marrison indicates that <ch> and <ts> correspond to /c/. It is not clear whether this represents allophonic or merely orthographic variation.
- <ny sh> correspond to /ñ ʃ/ respectively.
- The source shows <khwŋ> in the phoneme list; apparently a space was left out between the phonemes /khw/ and /ŋ/.

VOWELS

i		u
e	ü	o
	a	

- Marrison indicates that <ü> corresponds to /ə/.

❖

MIJI

Data Source: Simon 1979 [IMS-Miji]
Spoken in the northeastern region of Kameng District, Arunachal Pradesh.

Inventory: Simon 1979 [IMS-Miji] (pages v-vi)

Note: Transcription normalized in STEDT database.

CONSONANTS

p		t	ts	tʃ	c	k	ʔ
pʰ		tʰ			cʰ	kʰ	
b		d	dz		ɟ	g	
f	θ	s		ʃ			h
v	ð	z		ʒ			
m		n			ñ	ŋ	
w		l	ll	j	r		
		hl					

- /tʃ ʃ ʒ ɟ ŋ j ʔ/ are transcribed <tsh sh zh j ng y h> in [IMS-Miji].
- Aspiration is indicated by <h> in [IMS-Miji].
- Simon's chart includes a consonant <gh> in square brackets. It appears in only one word, <ghwen> "to show".
- /ll/ is [l] articulated "with the tongue rolled".
- Simon's chart includes two consonants <*th dh*> which he says represent [θ ð]; the former is distinguished from [tʰ] by being written in italics. However, italicized <*th*> and <*dh*> do not appear in the wordlist, perhaps due to typographical error. Therefore all instances of <th> have been transcribed as <tʰ> in the STEDT database.

VOWELS

i	ɯ	u
e		o
	a	

- /ɯ/ is transcribed <í> in [IMS-Miji].
- Simon also lists a symbol <ú> in square brackets. It appears very rarely in the wordlist, and is probably an allophone of /u/.
- Simon states that vowel length is "significant" (p. vi) but does not mark it.

❖

MIKIR

Data Source: Grüssner 1978 [KHG-Mikir]

Inventory: Grüssner 1978 [KHG-Mikir] (pages 9-21)

SYLLABLE CANON

T
(C)(C)V(N)

CONSONANTS

p	t	ch	k	
p^h	th		k^h	
b	d	j		
(b^h)	(d^h)			
	s			h
m	n		ŋ	
w	l	y		
	r			

- The voiced aspirates /b^h d^h/ originally come from Assamese (pp. 30-31).

VOWELS

i		u
e		o
	a	

TONES

mà	Tone 1	low
má	Tone 2	high
mā	Tone 3	mid

❖

MILANG

Data Source: Tayeng 1976 [AT-MPB]

Inventory: Tayeng 1976 [AT-MPB] (pages 1-3)

Note: Transcription normalized in STEDT database.

CONSONANTS

Simple Initials

p	t			c	k		
b	d			ɟ	g		
	s					h	
m	n			ɲ	ŋ		
	l	r		y			

Finals

-p	-t			-k
-m	-n			-ŋ
	-l		-r	

- There are also cluster initials of the type /Cy/.
- /c ɟ ɲ ŋ/ are transcribed <c j ny ng> in [AT-MPB].

VOWELS

i		u
e		o
	a	

- [AT-MPB] lists two central vowels <é> and <í> but writes them as simply <e> and <i> in the wordlist; they are thus not distinguished from /e/ and /i/ in the STEDT database.

HILL MIRI

Data Source: Simon 1976 [IMS-HMLG]

Inventory: Simon 1976 [IMS-HMLG] (pages v-vii)

Note: Transcription normalized in STEDT database.

CONSONANTS

p	t		c	k	
b	d		ɟ	g	
	s		sh		h
m	n		ɲ	ŋ	
w	l	r	j		

- /c ɟ sh ɲ j ŋ/ are transcribed <c j sh ñ/ny y ng> in [IMS-HMLG].
- Because of Hill Miri's tendency to apocopate word-final short vowels, almost all initial consonants can also occur as final consonants.

VOWELS

i	ɯ , y	u
e	ɤ	o
	a	

- Central vowels /ɯ ɤ y/ are transcribed <í é ú> in [IMS-HMLG].
- Vowel length is distinctive but is not consistently marked.

MISING[1]

Sadiya

Data Source: J. H. Lorrain 1907 [JHL-AM]
Work with native speakers in Sadiya for two and a half years from 1900 to 1903.

Inventory: J. H. Lorrain 1907 [JHL-AM] (pages 3-10)
J. Sun 1993a [JS-HCST] (pages 40-41)
Sun uses a retranscription of Lorrain's data.

Secondary Sources: [JS-HCST], [STC]

CONSONANTS

Initials

p	t			k
b	d		j	g
	s		sh	
m	n		ny	ng
	l	r	y	

Finals

-p	-t		-k
-m	-n		-ng
	-l	-r	

- In [JS-HCST] /j sh ny y ng/ are retranscribed <ǰ s ñ j ŋ>.
- Although Lorrain makes no mention of it, <ny> appears at least in initial position and probably corresponds to [ɲ].
- The only initial clusters in Padam and Mising belong to the /Cj-/ type, the /-j-/ glide being represented as <-i-> (e.g. orthographic <piong> 'steal' is /pjoŋ/).
- In Mising, but not in Padam, there seems to be a tendency for the original palatal nasal /ɲ/ to denasalize to /j/.
- /-l/ and /-r/ have fallen together to [-r] in Mising, but remain distinct in Padam.

[1]Called *Miri* in [JHL-AM], [JAM-GSTC], [STC], [WSC-SH], [RJL-DPTB].

VOWELS

Monophthongs

î	í	û
i		u
ê	e	ó
é	a	ô
	â	o

Diphthongs

ui

ai ao

- According to Lorrain's description, the vowels have the following approximate values:

Lorrain:	î	i	e	é	í	e	a	â	û	u	ó	ô	o
IPA:	iː	ɪ	eː	ɛ	ɨ	ə	ʌ	ɑː	uː	ʊ	oː	ɔː	ɑ

  The short vowels usually have longer allophones in open syllables.

- A survey of the dictionary shows that other diphthongs appear as well, including /éi eí oi ua/. [JS-HCST] does not list these.

- In [JS-HCST] /e é/ are retranscribed <ə e> respectively; <í ui> (which are in complementary distribution) are retranscribed as <ɯ>; and /ao/ is retranscribed <au>. Lorrain's circumflex <ˆ> is treated as a length mark and is not transcribed by Sun "because this distinction does not correspond consistently with contrastive quantity in the phonetically more accurate sources" (p. 41).

NOTES

- Padam and Mising, formerly known as Abor and Miri, two closely related varieties of Eastern Tani, are treated together in Lorrain's dictionary. Global phonological differences between the two varieties, though not mentioned by Lorrain, most certainly exist. Separate Padam and Mising forms are provided only when Lorrain detected a linguistic (usually lexical) difference.

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MISING

Data Source: Taid 1987 [TAI1987]

Inventory: Taid 1987 [TAI1987] (page 131)

CONSONANTS

Initials

p	t			k
b	d			g
	s			
	z			
m	n		ny	ng
	l	r	y	

Finals

-p	-t		-k
	(-s)		
-m	-n		-ng
	(-l)	-r	

- /-l/ is very infrequent.
- /-s/ occurs only in loanwords.

VOWELS

i i:	i’ i’:	u u:
e e:	e’ e’:	o o:
	a a:	

- Vowel sequences occur, but it seems most of them are not true diphthongs.
- Vocalic length is neutralized in word-final position.

❖

MO-ANG

Data Source: Wu 1993 [WU1993]
Collected in Funing County, Wenshan Prefecture, Yunnan.

Inventory: Wu 1993 [WU1993] (pages 53-56)

SYLLABLE CANON

T
(C)(C)CV(V)(C)

CONSONANTS

Initials

p	pj	t	tj	ts	tɕ		k	kj	q	qj	ʔ
p‘	p‘j	t‘	t‘j	ts‘	tɕ‘		k‘	k‘j	q‘	q‘j	
b	bj	d	dj	dz	dʑ		g		ɢ		
mb	mbj	nd	ndj								
f				s	ɕ						h
v	vj			z	ʑ		ɣ				
ʔv		ʔl	ʔlj		ʔʑ						
m	mj	n	nj		ɳ		ŋ				
ʔm	ʔmj	ʔn	ʔnj		ʔɳ	ʔɳj	ʔŋ				
		l	lj								

Finals

	-p	-t	-k	-ʔ
	-m	-n	-ŋ	

VOWELS

Monophthongs

i i̱	ɯ ɯ̱ , u u̱	
e e̱	o o̱	
ɛ		
	ɑ ɑ̱	

Diphthongs

ui u̱i̱
ei ɯe ue
ɛi ɛi̱
ɑu ɑ̱u̱ ɯɑ ɯ̱ɑ̱ uɑ u̱ɑ̱

Triphthongs

ɯɑu

- The underscore indicates vowel constriction.
- /ɛ u̲ ɯ̲ u̲ɑ u̲ɑ u̲ɑ̲/ do not occur in open syllables.

TONES

mɑ^{55} mɑ^{51} mɑ^{33} mɑ^{21} mɑ^{13}

MOYON

Data Source: Kosha 1990 [DK-Moyon]
STEDT Questionnaire.

Inventory: Kosha 1990 [DK-Moyon]

CONSONANTS

p	t	ts	c	k	ʔ
ph	th			kh	
b	d		j	(g)	
bh	(dh)			(gh)	
f	fˆ	s	š		h
v		z			
m	n			ŋ	
w		l , r	y		

- Kosha calls /dh g gh/ "marginal phonemes," as they occur only in borrowed words and have very low frequency.
- [fˆ] is a labiodental fricative similar to [f] except that there is more tension between the teeth and the lips in articulation than for [f]. In addition, the lips protrude more in the articulation of this consonant, and the tongue is slightly retracted.
- [s] varies freely with [š], but [s] is "strongly preferred" before /ə/ and /ow/. Likewise, [r] and [l] are in free variation, but [r] is strongly preferred to [l] before these two vowels.
- /c j/ are palatal affricates.
- [j] and [y] are in free variation, as are [v] and [w].

VOWELS

i		u
ɪ		ʊ
e	ə	o ow
	ʌ	
æ		a

- /a/ is transcribed <ɑ> in [DK-Moyon].
- [ow] is a mid vowel articulated with tension and a very high degree of lip protrusion. It is transcribed <o^{w}> in [DK-Moyon].

TONES

má	rising
ma	mid
mà	falling

MPI

Data Source: Srinuan 1976 [SD-MPD]

Collected in Ban Dong Village, Suan Khuean, Mueang District, Prae Province, Thailand. The principal informant is the author, Srinuan Duanghom.

Inventory: Srinuan 1976 [SD-MPD] (Thai: pages i-viii; English: pages ix-xvi)
Bradley 1979 [DB-PLolo] (pages 47-49)

[DB-PLolo] is based on [SD-MPD], supplemented by Bradley's own fieldwork in Ban Dong in 1976.

Secondary Sources: [DB-PLolo], [ILH-PL], [JAM-MLBM]

CONSONANTS

Initials

p	pj	t	tw	tj	tɕ	k	kw	kj	ʔ	
ph	phj	th			tɕh	kh	khw	khj		
f		s							h	hj
m	mj	n		nj	ɲ	ŋ				
w		l			j					

- /f/ has an allophone [hw].
- [DB-PLolo] does not include /tj/ among the initial consonants.
- [DB-PLolo] treats /hj/ as the voiceless counterpart of /j/ rather than the palatalized counterpart of /h/.
- /m n ɲ ŋ/ can constitute tone-bearing syllables initially in polysyllabic words; they are homorganic with the initial of the following syllable.

VOWELS

i	ɯ , u
e	ɤ , o
a	ɑ

- Diphthongs /iu ai ɤi oi/ occur mostly in loanwords.

PHONATION

ma	ordinary
maʔ	creaky
maŋ	nasalized
maŋʔ	creaky nasalized

- Monophthongs can occur in all four phonations.
- [a] and [aʔ] appear to be in free variation.
- /e/ is realized as [ɛ] in all phonations other than the ordinary phonation.

*TONE*S

ma^{1}	low rising	[^{13}]
ma^{2}	low falling	[^{21}]
ma^{3}	mid rising-falling	[^{343}]
ma^{4}	mid level	[^{33}]
ma^{5}	high rising-falling	[^{454}]
ma^{6}	high rising	[^{45}]

- Words with Tones 1, 3, and 5 are usually “verbals,” and those with Tones 2, 4, and 6 are usually “substantives.”

MRU

Data Source: Löffler 1966 [LL-CMST]

Consists of a vocabulary of about 2,000 words collected during fieldwork among the Mru (living in the hill tracts of East Bengal and Arakan) as part of the German Chittagong Hills Expedition (1955-57).

Inventory: Löffler 1966 [LL-CMST]

Secondary Sources: [JAM-Ety]

CONSONANTS

Simple Initials

p	t		c	k	
ph	th		ch	kh	h
b	d				
m	n			ng	
w	l	r	y		

Initial Clusters

kw	sw	
pl	kl	
pr	kr	mr

Finals

-p	-t	-k
-m	-n	-ng
	-r	

- /c ch/ represent [tś tśh].

VOWELS

Monophthongs		*Diphthongs*			
i	ü , u	üi	ui		ou
e	ö , o	eu			öi , oi
a		ia	ai	au	üa ua

- /ö ü e o/ represent [ɤ ɯ ɛ ɔ] respectively.

❖

MUYA

Data Source: Sun et al. 1991 [ZMYYC] #15
Sun Hongkai 1991 [SHK-MuyaQ]

[ZMYYC]: Collected in Liuba Town, Shade District, Kangding County, Ganzi [Garzê] Prefecture, Sichuan.
[SHK-MuyaQ]: STEDT Questionnaire.

Inventory: Sun et al. 1991 [ZMYYC] #15 (pages 219-222)
Sun Hongkai 1991 [SHK-MuyaQ]

CONSONANTS

Initials

p	t	ts	tʂ	tɕ	k	q	
ph	th	tsh	tʂh	tɕh	kh	qh	
mph	nth	ntsh	ntʂh	ntɕh	ŋkh	ŋqh	
b	d	dz	dʐ	dʑ	g	ɢ	
mb	nd	ndz	ndʐ	ndʑ	ŋg	ŋɢ	
f		s	ʂ	ɕ	x	χ	h
v		z	ʐ	ʑ	ɣ	ʁ	ɦ
m	n			ɳ	ŋ		
w	l			j			

- /ʑ/ is sometimes realized as [r]; /tʂ tʂh dʐ/ are sometimes realized as [tʃ tʃh dʒ].
- In [SHK-MuyaQ] <NG> is used in place of <ŋɢ> and the aspiration symbol <h> is raised.

VOWELS

Monophthongs

Oral (unconstricted)			*Nasal or Constricted*		
i , y		ɯ , u	ĩ		ɯ̃ , ũ
e , ø		o	ẽ		õ
ɛ		ɔ	ɛ̃		
a	ɐ	ɑ	a̰	ɐ̰	ɑ̃

Diphthongs

Oral (unconstricted)	*Nasal or Constricted*
yi ui yɯ uɯ	
ie ye ue , uø	
yɛ uɛ	iɛ̃ yɛ̃
ua yɐ uɐ yɑ uɑ	uą̃ yę̃ yą̃

TONES

ma^{55} high level
ma^{53} high falling
ma^{35} high rising
ma^{33} mid level

- The high level and mid level tones rarely contrast, except in reduplicated bisyllabic forms such as <ni^{55}ni^{33}> ‘red’.

❖

MZIEME

Data Source: Marrison 1967 [GEM-CNL]

Spoken in the Zeliang sub-district of the Kohima District of Nagaland and in a few villages of northwest Manipur. Marrison takes his lexical data from [GEM-Mzieme].

Inventory: Marrison 1967 [GEM-CNL] (pages 359-360)

SYLLABLE CANON

(C)V(V)(C)

CONSONANTS

Initials

p	t	ts		k	
mp	mt	nts			ngk
b	d			g	
n'b	md			ngg	
wh		s	sh		h
					n'h
		z			
		nz			
m	n		ny	ng	
mm		n'n		n'ny	n'ng
	l	r	y		
	nl	nr			

Finals

-p	-t	-k	-h
-m	-n	-ng	

- Marrison's charts on page 359 are incomplete. Additional information was extracted from the data.
- Mzieme has a rich system of prenasalization, including a series of prenasalized nasals. The prenasalization is probably syllabic. Prenasalization is sometimes indicated by a homorganic nasal, and sometimes by <n> or by <n'>. These are probably variant transcriptions of the same sound.

- The symbols <nk n'k ngk> appear in the data, apparently interchangeably for the prenasalized voiceless velar stop.
- The symbols <n'ng ngng> appear in the data, apparently interchangeably for the prenasalized velar nasal.
- The symbols <nm mm>, <nz mz> and <nr mr> appear in the data. The distinction between prenasalized <n> and <m> probably reflects subphonemic variations in pronunciation.
- The sequences /pw tw tsw kw nkw dw gw nngw sw zw nzw mw m'mw n'ngw lw/ are found in the data. However, these are usually followed by the vowel /a/ and in a few instances by /e/. It is perhaps better to regard <wa we> as alternate transcriptions of /ua ue/, i.e. to consider the labial element to be part of the rhyme rather than the initial.
- Marrison indicates that <ts sh> correspond to /c ʃ/ respectively.
- Marrison indicates that <ng> corresponds to /ñ/. This is probably a typographical error for <ny> corresponding to /ñ/.
- In the word list, final <-h> occurs although /-h/ is not listed as a final. It is likely that <-h> corresponds to /-ʔ/, as this convention is used elsewhere in [GEM-CNL].

VOWELS

Monophthongs		*Diphthongs*		
i	u	ie		ui
e		ei eu		ue
a		ia	ai au	ua

- It appears that the diphthongs /ai ei ui au eu/ occur only in open syllables.
- /ua ue/ are usually transcribed <wa we> in the data.

NAMUYI

Data Source: Sun et al. 1991 [ZMYYC] #19
Sun Hongkai 1991 [SHK-NamuQ]

[ZMYYC]: Collected in Luobo Town, District Two, Muli County, Liangshan Prefecture, Sichuan.
[SHK-MuyaQ]: STEDT Questionnaire.

Inventory: Sun et al. 1991 [ZMYYC] #19 (pages 236-239)
Sun Hongkai 1991 [SHK-NamuQ]

CONSONANTS

Simple Initials

p	t	ts	tʂ	tɕ	k	q	
ph	th	tsh	tʂh	tɕh	kh	qh	
b	d	dz	dʐ	dʑ	g	(G)	
f		s	ʂ	(ɕ)	x	χ	h
v		z	ʐ		ɣ	ʁ	ɦ
m	n			ɳ	ŋ		
(w)	l			j			
	ɬ						

- /w ɕ/ occur mainly in Chinese loanwords.
- In some words [k kh g] may alternate with [q qh G]. Otherwise, [G] occurs only in clusters.

Initial Clusters

mph	nth	ntsh	ntʂh	ntɕh	ŋkh	ŋqh
mb	nd	ndz	ndʐ	ndʑ	ŋg	ŋG
phs	mphs					
bz	mbz					
phʂ	mphʂ					
bʐ	mʐ	mbʐ				

VOWELS

Monophthongs

Oral (unconstricted)			*Nasal or Constricted*		
ɿ			ɿ̃		
i , y		u	ĩ , ỹ		ũ
e	ə əᴵ	o	ẽ	ə̃	õ
ɛ	ɛᴵ	ɔ	ɛ̃ ɐ̃	ɐ̃ᴵ	
	a			ã	

- /ɔ/ and the nasalized vowels occur mostly in Chinese loanwords.

Diphthongs

Oral (unconstricted)			*Nasal*		
ui					
ie ye ue	iə uəᴵ		uẽ		
iɛ yɛ uɛ	uɛᴵ	iɔ uɔ	iɛ̃ yɛ̃ uɛ̃		
	ua			iã uã	

- All diphthongs are “rising”, i.e. composed of a medial followed by a main vowel.

TONES

ma^{55}	high level
ma^{53}	high falling
ma^{35}	high rising
ma^{33}	mid level

- The high rising tone is realized as [^{24}].
- The mid level tone has an allotone [^{31}].

❖

NASU

Data Source: Chen 1986 [CK-YiQ]
Spoken in Luquan, Wuding, Xundian, Lufeng, Zhaotong, and Yiliang Counties, Yunnan.

Inventory: Chen 1986 [CK-YiQ]

CONSONANTS

p	t	ts	ʈ	tʂ	tɕ	k	
pʰ	tʰ	tsʰ	ʈʰ	tʂʰ	tɕʰ	kʰ	
b	d	dz	ɖ	dʐ	dʑ	g	
mbʰ	ndʰ	ndzʰ	nɖʰ	ndʐʰ	ndʑʰ	ŋgʰ	
f		s		ʂ	ɕ	x	h
v		z		ʐ	ʑ	ɣ	
m	n		ɳ		ȵ	ŋ	
	l						
	ɬ						

VOWELS

Unconstricted			*Constricted*		
ɿ			ɪ̄		
i		ɯ , u	i̱		ɯ̱ , u̱
e	er	ɤ , o	e̱	e̱r	ɤ̱ , o̱
		ʊ			
		ɔ			ɔ̱
	a			a̱	

- /ɿ ɪ̄/ have allophones [ɻ ɻ̄] which are not indicated in the transcription.

TONES

ma^{55} ma^{33} ma^{21}

❖ ❖ ❖ ❖ ❖

NASU

Data Source: Gao 1958 [GAO1958]

Collected in 1953 in Hetaojing Village near Kunming, Yunnan Province, with informant Yang Fushun.

Inventory: Gao 1958 [GAO1958] (pages 4-14)

Secondary Sources: [JAM-TSR]

CONSONANTS

Initials

p	t	ts	tʂ	tɕ	k	ʔ
p'	t'	ts'	tʂ'	tɕ'	k'	
b	d	dz	dʐ	dʑ	g	
b'	d'	dz'	dʐ'	dʑ'	g'	
f		s	ʂ	ɕ	x	
v		z	ʐ	ʑ	ɣ	
m	n			ɳ	ŋ	
m'	n'					
w		l		j		
		ɬ				

VOWELS

Monophthongs

Oral			*Nasal*		
ɿ					ŋ̍
i		ɯ , u	ĩ		ũ
	ɚ	ɤ , o		ɚ̃	ɤ̃ , õ
ɛ , ø		ɔ	ɛ̃ , ø̃		ɔ̃
	a			ã	

Diphthongs

uo uɔ uɛ

TONES

ma^{55} ma^{44} ma^{33} ma^{32} ma^{24} ma^{213} ma^{21}

NAXI[1]

Western/Lijiang

Data Source: Sun et al. [ZMYYC] #28
He and Jiang [JZ-Naxi]

[ZMYYC]: Western Dialect. Collected in Lijiangba, Lijiang County, Yunnan.
[JZ-Naxi]: Collected in Qinglong Town, Lijiangba, Lijiang County, Yunnan.

Inventory: Sun et al. [ZMYYC] #28 (pages 265-268)
He and Jiang [JZ-Naxi] (pages 5-18)

CONSONANTS

p	t	ts	tʂ	tɕ	k
ph	th	tsh	tʂh	tɕh	kh
b	d	dz	dʐ	dʑ	g
mb	nd	ndz	ndʐ	ndʑ	ŋg
f		s	ʂ	ɕ	x
v		z	ʐ	ʑ	ɣ
m	n			ɳ	ŋ
	l				

- /t th d n/ are realized as retroflexes [ʈ ʈh ɖ ɳ] in combination with vowels /u ɯ ə əɹ/.
- /x/ is realized as [χ] when combined with /y e a o u/.

VOWELS

Monophthongs

		v	
i , y		ɯ , u	
e	ə əɹ	o	
a		ɑ	

Diphthongs

ie , ye	ue	iə uə	io
ia , ya	ua		iɑ uɑ

- /əɹ/ is transcribed <ər> in [JZ-Naxi].
- The phonetic value of /a/ is [æ].
- When /v/ acts as a vowel, its phonetic value is closer to the labiodental approximant [ʋ]. When it combines with /ŋ/, the phonetic value of the syllable is [ŋm̩].
- /ɯ/ is realized as [ɿ] or [ʅ] after dental affricates and fricatives or retroflexes.

---

[1]Called *Nakhi* in [ROC1963].

- "When one of the vowels /a o ɑ əɹ/ occurs without an initial consonant, if the tone is low falling there is an automatic laryngeal onset [ʔh] or [h]; in all other tones there is an automatic glottal onset [ʔ]."
- /e/ is realized as [ɛ] with bilabials or alveolar stops.
- /y/ is realized as [ø] after bilabials, alveolar stops or velars.

TONES

ma^{55}	high level
ma^{33}	mid level
ma^{31}	low falling
ma^{13}	low rising

- In [JZ-Naxi], tones are represented by Chao tone letters, not numbers.

❖ ❖ ❖ ❖ ❖

NAXI

Lijiang

Data Source: Rock 1963 [ROC1963]

The data represents Naxi as spoken in the villages to the north and west of Lijiangba in the Yangtze Valley, Lijiang County, Yunnan. This dialect was chosen over that spoken in Lijiangba (the county seat) because there "the populace is unable to pronounce certain ^{1}Na-^{2}khi sound complexes due to the fact that there is an infusion of Chinese among the inhabitants" (p. xxvii). Collected in the 1930s.

Inventory: Rock 1963 [ROC1963] (pages xxxi-xxxii and pages xxxvi-xxxvii)

CONSONANTS

Simple Initials

bp	dt	ts	ch		gk	
p’	t’	ts’	ch’		k’	
		ds	dsh			
		nds	ndsh			
		ds’				
b	d	dz	dzh		g	
mb	nd	ndz	ndzh		ng	
bb	dd				gg	
mbb	ndd				ngg	
(f)		s	sh	ḳh	kh	h
ff		ss				
v		z	zh			gh
		sz				
m	n				n̄g̱	
	nn					
w	l			y		
	ll					

Initial Clusters

gky	gy	khy	ngy	ny
dgy	dtgy	tgky	t’kh	t’khy

Finals

-ng	-gh

- Rock’s consonant system is very complex and certainly not phonemic. In addition to distinguishing consonants according to whether they are voiced, voiceless, aspirated, or unaspirated, he also identifies some consonants as long, short, fortis, or lenis. In general, long initial consonants take short vowels, while short consonants take long vowels.
- /bp dt ts ch gk/ are voiceless unaspirates.
- <’> represents aspiration.

- /ds ds'/ are distinguished from /ts ts'/ by being "lenis".
- /sz/ is distinguished from /z/ by being "fortis, long".
- /ḳh/ is a voiceless palatal fricative.
- /gh/ is a voiced uvular (or pharyngeal) fricative.
- /ng/ represents a cluster (probably [ŋg]) while /n̄g̱/ is the velar nasal [ŋ].

VOWELS

Monophthongs

		v
i ī	ü	ŭ u
ï		
e , ö	ĕr (erh)	ŏ ō
ä		aw
		ă a

- Rock also lists a single constricted vowel, <ʻa>.

Diphthongs

iu	uo
oa	ou
ùa uà	ŭe

- Short vowels are indicated with a breve <˘>, and long vowels with a macron <¯>.
- <ü> ranges in value from a front rounded vowel [y] to a back unrounded vowel [ɯ] (after velars).
- <ĕr> is a retroflexed mid central vowel [ɚ]. This vowel is transcribed <erh> in Chinese loanwords.
- <ùa> is a diphthong with prominence on [u] and a centralized off-glide; <uà> has prominence on [a].
- <ŭe> probably represents [ɯɤ].
- Nasalization of a vowel is indicated by a following <n̲>.
- After velar initials, diphthongs beginning with <u> are transcribed with a medial <w>, as in <gwuo>.

TONES

[1]ma	low falling
[2]ma	mid level
[3]ma	high, short
[4]ma	rising

- The fourth tone occurs mostly in loans from Chinese and Tibetan.

❖ ❖ ❖ ❖ ❖

NAXI

Eastern/Yongning

Data Source: Sun et al. [ZMYYC] #29
He and Jiang [JZ-Naxi]

[ZMYYC]: Eastern Dialect. Collected in Yongningba, Ninglang County, Yunnan.
[JZ-Naxi]: Collected in Yongningba, Ninglang County, Yunnan.

Inventory: Sun et al. [ZMYYC] #28 (pages 268-270)
He and Jiang [JZ-Naxi] (pages 107-116)

CONSONANTS

p	t	ts	tʂ	tɕ	k
ph	th	tsh	tʂh	tɕh	kh
b	d	dz	dʐ	dʑ	g
f		s	ʂ	ɕ	x
		z	ʐ	ʑ	ɣ
m	n			ɳ	ŋ
	l				
	ɬ				

- /t th d n l/ are realized as retroflexes [ʈ ʈh ɖ ɳ ɭ] in combination with vowels /i a ə ər ua uəɹ/ etc.
- /k kh g x/ are realized as palatals /c ch ɟ ç/ in combination with vowels /i e/.
- "When the velars combine with /a əɹ/, they are articulated slightly back, with a phonetic value close to uvulars [q qh]."
- "When velar /ɣ/ combines with vowels /a ɑ o əɹ u v uɑ/ etc., it is realized as uvular [ʁ]."

- "When /m/ combines with the vowel /v/, the pronounciation is either [mv] or [m̩]."

VOWELS

Monophthongs

Oral			*Nasal*	
ɿ		v		
i		ɯ , u	ĩ	
e	ə əɹ	o		ə̃ɹ
a		ɑ		

Diphthongs

ua uə uɑ

- /əɹ ə̃ɹ/ are transcribed <ər ə̃r> in [JZ-Naxi].
- The apical vowel /ɿ/ is realized as [ɻ] after retroflexes or with alveolars /t th d n l/.
- /e/ is realized as [ɛ] when combines with bilabials /p ph b/, alveolars /t th d/, or when it occurs without an initial consonant.
- /u/ and /ua/ are nasalized when they occur without an initial consonant.
- /v/ and /və/ are nasalized when they occur with initial /x/.
- /əɹ/ is realized as [uəɹ] when it combined with retroflexes /tʂ tʂh dʐ ʂ ʐ/ or with velars.

TONES

ma^{55} high level
ma^{33} mid level
ma^{31} low falling
ma^{13} low rising

- In [JZ-Naxi], tones are represented by Chao tone letters, not numbers.
- Tone /^{31}/ is described as /^{21}/ in [JZ-Naxi].
- "The high level tone and the low rising tone are in free variation in many lexical items."

❖

NEPALI

Data Source: Schmidt 1993 [RLS-PDMN]

Research was carried out in Nepal (in affiliation with Tribhuvan University's Nepali Instruction Committee) and at the University of California, Berkeley, for nearly seven years.

Inventory: Schmidt 1993 [RLS-PDMN] (page xxxix)

CONSONANTS

p	t		T	c	k	
ph	th		Th	ch	kh	
b	d		D	j	g	
bh	dh		Dh	jh	gh	
	s					h
m	n				ng	
w	l	r	R	y		

- The authors provide a spelling transcription and a pronunciation transcription. The chart above reflects the pronunciation transcription.
- It is assumed that capital letters represent retroflex consonants. The authors make no mention of consonant values.
- [h] is also indicated using <'> in the transcription.

VOWELS

Monophthongs			*Diphthongs*
i ii		u uu	
e	ṛ	o	
	a aa		ai au

❖ ❖ ❖ ❖ ❖

NEPALI

Data Source: Hale 1973 [AH-CSDPN]

Hale's wordlist is from Chudamani Bandhu and Maria Hari .

Inventory: Hale 1973 [AH-CSDPN] (pages 12-13)

The phonological analysis follows that of [BDHH1971].

CONSONANTS

p	t		T	c	k	
ph	th		Th	ch	kh	
b	d		D	j	g	
bh	dh		Dh	jh	gh	
	s					h
m	n					
	l	r				

- Capital letters represent backed or retroflex consonants.

VOWELS

i	ị				u	ụ
e	ẹ		a	ạ	o	ọ
ā	ą̣					

- Vowel nasalization is contrastive. However, oral-nasal pairs are only common for the low central-to-front vowel /ā/.
- Vowel length is not contrastive, but it can occur in the following cases: emphatic enunciation, elision of intervocalic /h/ in normal speech, and vowel sequences produced by affixation.
- Vowel breathiness is not contrastive but is an automatic feature of vowels which follow the breathy consonants /bh dh Dh jh gh/.

NESU

Data Source: Chen 1986 [CK-YiQ]

Spoken in Yuxi, Huaning, Tonghai, Xinping, Yuanjiang, Shiping and Eshan Counties, Yunnan.

Inventory: Chen 1986 [CK-YiQ]

CONSONANTS

p	t	ts	tʂ	tɕ	k
pʰ	tʰ	tsʰ	tʂʰ	tɕʰ	kʰ
b	d	dz	dʐ	dʑ	g
f		s	ʂ	ɕ	x
v		z	ʐ	ʑ	ɣ
m	n			ɳ	ŋ
	l				
	ɬ				

- /ŋ/ can occur as a tone-bearing syllable, in which case it is transcribed <ŋ̩>.

VOWELS

Unconstricted			*Constricted*		
ɿ	ʅ		ɪ̄	ʅ̄	
i		ɤ , u	i̱		ɤ̱ , u̱
ɪ			ɪ̱		
e	er	o	e̱	e̱ṟ	o̱
	a			a̱	

- [ɿ ʅ] are allophones of /i/, but they are transcribed phonetically.

TONES

ma^{55} ma^{33} ma^{21}

NEWARI

Dolakha

Data Source: Genetti 1987 [CG-Dolak]

The data is from work in Nepal (1987, 1988-89). The primary consultants were two women (Kalpana and Rama Shrestha; one more isolated from Dolakha during part of childhood). Seventeen other speakers provided data on narrative texts and conversation.

Inventory: Genetti 1987 [CG-Diss] (pages 34-56)

The charts below have been modified to reflect the data as it appears in [CG-Dolak].

SYLLABLE CANON

(C)(C)V(V)(C)

CONSONANTS

Initials

p	t	ṭ	c	k	
ph	th	ṭh	ch	kh	
b	d	(ḍ)	j	g	
	s				h
m	n			ŋ	
w	l	r	y		

- <ṭ ṭh ḍ> are transcribed <T Th D> in [CG-Diss].
- The alveopalatal phonemes /c ch j/ are affricates (p. 37).
- /s/ is palatalized before /y/ (p. 36).
- The phoneme /h/ is voiced, with breathy voiced or murmured articulation (p. 38).
- [r] is in complementary distribution with [ḍ]. The latter occurs word-initially, the former medially and finally (p. 39). The choice of [r] to represent the phoneme is made ultimately on diachronic grounds. However, both <ḍ> and <r> are used in transcription (parallel to the distinction made orthographically) (p. 41).
- "Geminate consonants are found in a limited number of words" (p. 56).
- "Word-initial /y/ is optionally pronounced as [ʔ] before /e/ if it is utterance initial or follows a vowel-final word, providing /e/ is not followed by /i/" (p. 52).
- "In words with a single consonant onset, any consonant can be found .... In words with a complex onset, the second consonant must be a glide, either /y/ or /w/, although /r/ but not /y/ can occur as the second member in medial clusters. Most

consonants can appear preceding glides, the exceptions being /r/, /y/, /w/ and /h/" (p. 55).

Finals

-p	-t	-k
-m	-n	-ŋ
	-s	
	-l -r	

- "[S]yllable final /m/ and /ŋ/ are also found" (p. 49).

VOWELS

i ĩ		u ũ
e ẽ		o õ
	a ã	ɔ ɔ̃

- /a ã ɔ ɔ̃/ are transcribed <ā ā˜ a ã> in [CG-Diss].
- "The vowel /e/ is pronounced lax and lower than English [e] when it is followed by a consonant or /u/ in the same syllable. It is pronounced as [e] syllable-finally or when followed by /i/" (p. 45).
- /o/ has the phonetic allophones [o], [wɔ] and [wo], which never contrast (p. 46).
- The low back vowel /ɔ/ is realized as [ɑ] in most environments, but as [ə] in the final syllable of a polysyllabic word (p. 48).
- Vowel length is not contrastive in Dolakha. Orthographically, however, sequences such as <aa>, <ii> etc. appear for morphological reasons (p. 50). Diphthongs exist where the second vowel is /i/ or /u/ and differs in quality from the preceding vowel (p. 55).

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NEWARI

Kathmandu

Data Source: Malla 1985 [MAL]

Inventory: Malla 1985 [MAL] (pages 3-18)

SYLLABLE CANON

C(C)V(V)(C)

CONSONANTS

Initials

p	t	c	k	
ph	th	ch	kh	
b	d	j	g	
bh	dh	jh	gh	
		s		h
m	n			
mh	nh			
	l	(r)		
	lh	(rh)		

- /c ch j jh/ are [ts ts^{h} dz dz^{ɦ}]
- "Breathy consonants are initially voiceless and end as voiced, though the onset of voicing may be delayed. This voice is breathy or murmur voice. It continues throughout the whole syllable" (p. 16).
- Syllable-initial /h/, like breathy initial consonants, conditions breathy vowels (p. 17).
- Stops, liquids and nasals can take on palatal or labial secondary articulation features when "word initial or [in] the initial syllable of a word compound" (p. 12). Palatalization is conditioned by /e/ or /i/ and labialization is conditioned by /u/ or /o/.
- The velar nasal <n̊> occurs syllable initial in Bhaktapur dialect. Otherwise, it occurs only where /n/ has assimilated to a following velar stop (p. 13).
- /r/ and /rh/ are given marginal status because they have been found to fluctuate freely with /d/ and /dh/, particularly in intervocalic positions" (p. 13).

Medials

-w- (-r-) -y-

- Medial consonants /y, w/ can follow any stop, affricate, fricative, liquid or nasal.
- Glides cannot be followed by other glides or liquids. In addition, /y/ cannot be followed by /i/ or /w/ by /u/.
- "Glides participate as non-contrastive assimilatory features as well as contrastive medial segments in CC-cluster[s]." However, glides that occur word-initially or syllable-initially have phonemic status and do not arise from assimilation (p. 12).
- /r/ is a voiced alveolar flap. It may follow an initial consonant in loan words.

Finals

-p	-t		-c	-k
-ph	-th			-kh
-b	-d		-j	-g
	-s			
-m	-n			
	-l	-r		

- Consonants do not occur word-finally.
- CCC sequences do not occur initially or finally except in loanwords.
- Breathy and aspirated consonants do not occur finally.

VOWELS

Monophthongs

Short				*Long*			
i ĩ		u ũ		iː ĩː			uː ũː
e ẽ		o õ		eː ẽː			oː õː
	a ã			aeː ãeː	aː ãː		
	ā ã̄			āeː ã̄eː	āː ã̄ː		

Diphthongs

(ui)

ei eu

ai au

āi āu

- /a ā aeː āeː/ are realized as [ə a ɛː æː].
- "The long low front vowels, /aeː/ and /āeː/, occur only in open syllables, mainly in morpheme-final position. They resulted from the loss of the morpheme-final fricative *-s* and affricates *-c* and *-j*" (p. 11).
- Vowel nasalization causes the whole syllable to be nasalized (p. 17).
- Vowels following breathy consonants or initial /h/ are breathy (p. 17).
- "High vowels /i/ and /u/ preceding another different vowel trigger glide reduction, e.g. *bi-u*, give, becomes *byu*, [and] *gu-i,* (will be) torn, becomes *gwi*" (p. 17).

- "The vowel sequence /ui/ has been observed either in loan words or in nominal or verbal inflections, e.g. *bũi*, in the field, *bui*, will be born" (p. 13).
- "All complex vowels can potentially occur in syllable-final or word-final positions as syllabic nuclei" (p. 13).
- "Monosyllabic vowel clusters in slow speech are realized as single vowels in normal speech. Thus /ae/ and /āe/ are monophthongized to [ɛː] and [æː] in normal speech" (p. 17).
- Stress is not distinctive in polysyllabic words. However, it has been suggested that Newari has a stress-timed rhythm (pp. 17-18).
- Newari clauses or sentences have two basic intonation patterns, one with a final pitch fall and one with a final pitch rise (p. 18).

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NEWARI

Kathmandu

Data Source: Genetti 1990 [CG-Diss]
Collected from two speakers in Oregon, 1984-1990.

Inventory: Genetti 1990 [CG-Diss] (pages 58-68)

CONSONANTS

Initials

p	t	c	k	
ph	th	ch	kh	
b	d	j	g	
bh	dh	jh	gh	
	s			h
m	n			
mh	nh			
w	l	y		
(wh)	lh	(yh)		

- There are no final consonants in Kathmandu Newari.

VOWELS

Short		*Long*	
i ĩ	u ũ	ii ĩĩ	uu ũũ
e ẽ	õ	ee ẽẽ	õõ
ā ā˜	a ã	āā ā˜ā˜	aa ãã

- Kathmandu has no retroflex obstruents; "all coronal anterior obstruents are pronounced at the alveolar place of articulation" (p. 58). "The Dolokha retroflex stops regularly correspond to Kathmandu alveolar stops;" also "true for the [D], the allophone of /r/" (pp. 58-59).
- "Regular correspondences also exist between dentals in Dolakha and alveolars in Kathmandu" (p. 59).
- "The breathy voiced glides of Kathmandu Newari are extremely rare and generally left out of discussion of Kathmandu Newari phonology" (p. 69, n. 6).
- "Loss of syllable final consonants has resulted in compensatory lengthening and a consequent phonemicization of vowel length in Kathmandu .... Loss of syllable final nasal consonants resulted in both the lengthening and the nasalization of the preceding vowel" (p. 67).
- "There is some disagreement as to whether the Kathmandu dialect has a distinct phoneme /o/" (p. 70, n. 8).

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NEWARI

Kathmandu

Data Source: Hale 1973 [AH-CSDPN]

Hale's wordlist is from Thakurlal Manandhar, Margrit Hale and Austin Hale . The data is from Kathmandu.

Inventory: Hale 1973 [AH-CSDPN] (pages 28-30)

The phonological analysis follows that of [MAH1969] and [HS1972].

CONSONANTS

p	t		c	k	
ph	th		ch	kh	
b	d		j	g	
bh	dh		jh	gh	
	s				h
m	n			(ng)	
w	l	r	y		
	lh	rh			

- The velar nasal <ng> [ŋ] has doubtful status as a phoneme in the Kathmandu dialect. It occurs mainly in loan words and only in word-final position.

VOWELS

i		u
e		wa
ae		a
āe	ā	

NOTES

- <wa> is realized as [wɤ]; Hale notes that this could also be analyzed /o/.
- Length is contrastive for all vowels and is marked by <:> following the vowel. However, the two vowel sequences <ae> [ɛː] and <āe> [æː] (analyzed as sequences on morphological evidence) very closely approximate a phonetic simple vowel for many speakers. If these are taken as simple vowels, they then constitute long vowels for which there are no short counterparts.
- Nasalization is contrastive for all vowels and vowel sequences. It is marked by <◌̨> under the vowel. It often has as its source a word-final nasal consonant which, in the absence of any following suffix, survives only as length and nasalization of the final vowel of the stem. This nasal may be either /m/ or /n/. In the word list the fluctuating nasal consonant is written in parentheses, e.g. lāka(m) ‘shoe’.
- The breathy consonants /bh dh jh gh mh nh lh rh/ condition breathiness in the vowels which follow them. Pitch is not lexically contrastive in Newari. Breathiness has a lowering effect upon the pitch of a syllable.

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NEWARI

Kathmandu

Data Source: Shakya and Hargreaves 1989 [SH-KNw]
STEDT Questionnaire.

Inventory: Shakya and Hargreaves 1989 [SH-KNw]

CONSONANTS

p	t		c	k	
ph	th		ch	kh	
b	d		j	g	
bh	dh		jh	gh	
	s				h
m	n			(ŋ)	
mh	nh				
w	l	(r)	y		
	lh				

- /r/ is not phonemic in native vocabulary. Its presence reflects the large number of assimilated loans from various Indo-Aryan languages.
- /c ch j jh/ are affricates.

VOWELS

Short		*Long*	
i ĩ	u ũ	i:	u:
e ẽ	o õ	e:	o:
æ ãe	ɔ ɔ̃	æ:	ɔ:
a ã		a:	

NISHI[1]

Data Source: Chhangte 1992 [TC-list]

The data is "pan-dialectal" since Chhangte worked with speakers from various dialect backgrounds (principally South Aya, Sagali, Lel) when she conducted her field work in Lower Subansiri District, Arunachal Pradesh, in the summer of 1989.

Inventory: J. Sun 1993a [JS-HCST] (pages 506-507)

Sun refers to Chhangte's data as "Nishi C".

CONSONANTS

Initials

p	t		č	k	
b	d		ǰ	g	
	s			x	h
m	n		ñ	ŋ	
	l	r	j		

Medials

-j-

Finals

-p	-t		-č		-ʔ
-b	-d		-ǰ	-g	
-m	-n				
	-l	-r			

- /č ǰ j/ are transcribed <c j y> in [TC-phon].
- /r/ is an alveolar flap.
- Final /ʔ/ is realized as [k] in some dialects.
- In Western Nishi dialects the codas /b d/ are spirantized and accompanied by breathy voice.
- The stop codas may be released.
- In addition to the finals listed above, syllables can end in a rich variety of consonant clusters including /ʔg mŋ ŋg/ etc. These clusters may be broken up by an epenthetic vowel.

---

[1]Called *Nyisu*, *Eastern Dafla* in [HAM1900]; *Dafla* in [KDG-Daf]

VOWELS

Monophthongs

i iː	ɯ ɯː	u uː
e eː	ə əː	o oː
	a aː	

Diphthongs

ɯi	ui
	oi
ai	ao

- /ə ɯ/ are transcribed <ë ï> in [TC-phon]. The long vowels are transcribed as geminates (e.g. <aa>) in [TC-phon].
- The contrast between /ə/ and /ɯ/ is neutralized in unstressed syllables.
- Vowel length seems to be distinctive only in the first syllable of polysyllabic words.

TONES

- "Chhangte claims that of the Nishi dialects she heard, only the Sagali dialect seems more likely to have tones. For the other dialects (Lel and South Aya), however, there are a few suspicious pairs with apparently identical segmental elements but which speakers claim to be distinct. It is still unclear if these putative minimal pairs are real, and, if so, what phonetic distinctions (tone?) are involved." (Sun, p. 507)

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NISHI

Data Source: Hamilton 1900 [HAM1900]

A dialect of Lower Subansiri Nishi distributed to the north of the town of North Lakhimpur in Assam, called "Eastern Dafla" by Hamilton.

Inventory: J. Sun 1993 [JS-HCST] (pages 509-511)

Sun refers to Hamilton's data as "Nyisu H".

CONSONANTS

Simple Initials

p	t		č	k	
b	d		ǰ	g	
	s			x	h
	z				
m	n		ñ	ŋ	
	l	r	j		

Initial Clusters

pl bl

tr kr~xr gr

kj lj

mn

- /č ǰ ñ j x ŋ/ are transcribed <ch j ny y kh ng> in [HAM1990]. When appearing word-medially, /č/ is sometimes transcribed <tch>.
- The cluster [kr] seems to vary with [xr].
- In Nyisu final short vowels tend to be elided. This means practically all onset consonants can potentially occur as syllable codas. As in Nishi C (see above), there are also secondary cluster codas.

VOWELS

Monophthongs			*Diphthongs*
i iː	ɯ	u uː	
e eː	ə	o oː	oi
	a aː		ai au

- Long vowels are indicated in [HAM1990] by placing a circumflex <ˆ> over the vowel.
- /ə ɯ/ are transcribed <ŭ ü> in [HAM1990]. No length distinction is indicated for these two vowels.
- Both <ü> and <ui> appear in [HAM1990]. The former is "like the French 'u' in lune (i.e. [y])" and the latter is "fluctuating between the French 'eu' (i.e. [ø]) and 'î' (i.e. [iː]". Sun presumes both are allophones of /ɯ/.
- Both <å> (i.e. [ɔ]) and <o> appear in [HAM1990]. Sun presumes both are allophones of /o/.

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NISHI

Data Source: Das Gupta 1969 [KDG-Daf]
The speech of the Nishis of the Palin-Nyapin area.

Inventory: J. Sun 1993a [JS-HCST] (page 508)

CONSONANTS

Initials

p	t		č	k		
b	d		ǰ	g		
	s					h
m	n		ñ	ŋ		
	l	r	j			

Finals

-p	-t	-k
-m	-n	-ŋ
	-r	

- /č ǰ ñ j ŋ/ are transcribed <c j ny y ng> in [KDG-Daf].

VOWELS

i	ɯ	u
e	ə	o
	a	

- /ə ɯ/ are transcribed <é í> in [KDG-Daf].
- Vowel length is not marked in [KDG-Daf].

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NOCTE

Data Source: Marrison 1967 [GEM-CNL]

Spoken in the Tirap Division of N.E.F.A. near Khonsa, in Jaipur in the Lakhinpur District, and in Namsang in the Sibsagar District. Marrison takes his lexical data from [BRO1851].

Inventory: Marrison 1967 [GEM-CNL] (page 360)

Secondary Sources: [WTF-PNN]

SYLLABLE CANON

(C)V(V)(C)

CONSONANTS

Initials

p	t	ch	k	
ph	th		kh	
b	d	j		
	s			h
v				
m	n	ny	ng	
	l	r		

Finals

-p	-t	-k
-m	-n	-ng

- Marrison indicates that <ch> corresponds to /c/.

VOWELS

Monophthongs		*Diphthongs*	
i	u		
e	o	ie	uo
a		ua	

❖ ❖ ❖ ❖ ❖

NOCTE

Hawa-jap

Data Source: Das Gupta 1971 [KDG-INL]

Hawa-jap Dialects are spoken in Namsang, Borduria, Laptang, Kaimai, Paniduria, Notunkheti, Wathin, Khela, Khonsa, Kheti Thingsa, Dadam, Muktoa, Cinkoe, Laho, Kothin, Hongkah, Biara, Kapo, Cangnyiak (Kolagao). "The primary material ... was collected in Namsang and Borduria villages. It was subsequently checked and verified with the help of Sarvashri Wangkap, Wangpha and Thunwang" (p. iii).

Inventory: Das Gupta 1971 [KDG-INL] (pages 1-3)

CONSONANTS

p	t		c	k	
ph	th		ch	kh	
b	d		j		
	s				h
	sh				
v					
m	n		ny	ng	
w	l	r	y		

- /t d/ are sometimes realized as "dentaloalveolar".
- /v/ is sometimes aspirated.
- /k/ is sometimes realized as [ŋ] when followed by a nasal consonant.

VOWELS

i	u
e	o
a	

- "Usually o is realized as o in 'not' but it is close at the end of the word like o in English 'note'" (p. 1).
- "e is sometimes centralized with the mouth shaped for the ordinary e and the tongue drawn slightly backwards" (p. 1).
- There are some instances of vowel harmony (p. 1).

TONES

- Although Das Gupta does not indicate tone, he writes that it is "an important feature". He does not describe the tones, but lists minimal pairs. Tones listed include "level", "rising", "rise falling", and "falling" (p. 2).

NOESU

Data Source: Chen 1986 [CK-YiQ]
Spoken in Weining, Hezhang, Dafang, Bijie, and Qianxi Counties, Guizhou.

Inventory: Chen 1986 [CK-YiQ]

CONSONANTS

p	t	ts	ʈ	tʂ	tɕ	k	
pʰ	tʰ	tsʰ	ʈʰ	tʂʰ	tɕʰ	kʰ	
b	d	dz	ɖ	dʐ	dʑ	g	
mb	nd	ndz	ɳɖ	ɳdʐ	ndʑ	ŋg	
f		s		ʂ	ɕ	x	h
v		z		ʐ	ʑ	ɣ	
m	n		ɳ		ɲ	ŋ	
	l						
	ɬ						

VOWELS

Monophthongs

i , y		u
ɪ		
e		ɤ , o
	a	

Diphthongs

ie

- /i/ has allophones [ɿ ʅ] which are not transcribed.

TONES

ma^{55} ma^{33} ma^{21} ma^{13}

❖

NOSU

Data Source: Chen 1986 [CK-YiQ]

Spoken in Xide, Yuexi, Zhaojue, and Xichang Counties, Sichuan and in Ninglang and Huaping Counties, Yunnan.

Inventory: Chen 1986 [CK-YiQ]

CONSONANTS

p	t	ts	tʂ	tɕ	k	
pʰ	tʰ	tsʰ	tʂʰ	tɕʰ	kʰ	
b	d	dz	dʐ	dʑ	g	
mb	nd	ndz	ndʐ	ndʑ	ŋg	
f		s	ʂ	ɕ	x	h
v		z	ʐ	ʑ	ɣ	
m	n			ȵ	ŋ	
m̥	n̥					
	l					
	ɬ					

- [l] can occur as a tone-bearing syllable, in which case it is transcribed <l̩>.

VOWELS

Unconstricted		*Constricted*	
ɿ		ɿ̄	
i	ɯ , u		u̱
e	o		o̱
a			

- /ɿ/ has an allophone [ɻ] which is not transcribed.

TONES

ma^{55} ma^{44} ma^{33} ma^{21}

❖

NTENYI

Data Source: Marrison 1967 [GEM-CNL]

Spoken in a few northern Rengma villages. Marrison takes his lexical data from [JPM-Reng].

Inventory: Marrison 1967 [GEM-CNL] (pages 362-363)

SYLLABLE CANON

(N)(C)V(N)

CONSONANTS

Initials

p	pf/pv	t	ts/ch	k	kw	
mp	mt	nt	mts/mch	ngk		
ph		th		kh	khw	
mph		nth			ngkh	
b		d	j	g	gw	
	f	s	sh			h
	v	z	zh	gh		
m	mv	n	ny	ng		
w		l	y			
wh	nwh					

Finals

-n	-ng

- Marrison indicates that <ts> and <ch> correspond to /c/; <pf> and <pv> correspond to /pf/. It is not clear whether this represents allophonic or merely orthographic variation.
- <gh sh zh ny> correspond to /ɣ ʃ ʒ ñ/ respectively.
- Marrison's phoneme chart lists /n/ with both the palatal and the alveolar/dental series. The instance in the palatal series is probably a typographical error for /ñ/.

VOWELS

i		u
e	ü	o
	a	

- Marrison indicates that <ü> corresponds to /ə/.

❖

NUNG[1]

Data Source: Sun et al. 1991 [ZMYYC] #44
Collected in Magujia-Lianhe Town, Fugong County, Nujiang Prefecture, Yunnan.

Inventory: Sun et al. 1991 [ZMYYC] #44 (pages 331-336)

INITIALS

Simple

p	t	ts	ʈ	tʂ	tɕ	k	ʔ
pʰ	tʰ	tsʰ	ʈʰ	tʂʰ	tɕʰ	kʰ	
b	d	dz	ɖ	dʐ	dʑ	g	
f		s		ʂ	ɕ	x	h
v		z		ʐ		ɣ	
m	n		ɳ		ȵ	ŋ	
m̥	n̥				ȵ̊	ŋ̊	
	l		ɭ	ɹ			
	ɬ						

Cluster

pɹ	pʰɹ	bɹ	fɹ	vɹ	mɹ	kʰɹ	gɹ	xɹ
ʔbɹ	ʔɳ	ʔȵ						

- /ɭ/ is a retroflex lateral.
- In some words voiced stops and affricates may alternately be voiceless.
- In connected speech the retroflexed stops and affricates may occur in free variation with corresponding dental stops and fricatives respectively.
- Nasals can form syllables by themselves. Phonetically, they are normally realized as having a preceding glottal stop , i.e. [ʔm̩] , [ʔŋ̩] etc.
- /ɹ/ is an unstable sound; it may change to [z] or [ʐ], and may sometimes disappear before /i/.

---

[1] Called *Nu (Fugong)* in [ZMYYC]; *Anong* elsewhere.

RHYMES

ɿ i , y ɯ , u e o ɛ ɔ ɑ	ui iɯ , iu ie ye ue io iɛ uɛ iɔ iɑ uɑ
uɑi ɑi ɑu iɑu	ɿʔ iʔ ɯʔ , uʔ ioʔ oʔ ɛʔ uɛʔ ɔʔ ɑʔ uɑʔ
ɿm im ɯm , um em om ɛm ɔm iɑm ɑm uɑm	ɿn in ɯn en iɛn ɛn uɛn ɔn ɑn
ɿŋ̍ iŋ̍	iŋ iɯŋ ɯŋ , iuŋ uŋ eŋ ioŋ oŋ ɛŋ iɔŋ ɔŋ iɑŋ ɑŋ uɑŋ

- /u/ after /m ŋ/ and /i/ after /ŋ̍/ are often elided.
- The /-ŋ̍/ coda seems to be secondary, deriving from weakened second syllables, from which the vowel following the /-ŋ̍-/ is deleted.
- /-ŋ/ can drop, causing compensatory nasalization of the preceding nuclear vowel.
- /-ʔ/ is an unstable coda, which may be realized as laryngealization of the vowel.
- In connected speech /ɹ/ may occur as an ending, but only in a few words. Sometimes it is close to a retroflex vowel but at other times it disappears.

TONES

mɑ^{55} high level
mɑ^{53} high falling
mɑ^{31} low falling
mɑ^{35} high rising

- There is also a fifth tone whose pitch is either high level or low falling, depending on the environment.
- The high rising and high falling tones are less frequent tones lexically.

NUSU

Bijiang/Central

Data Source: Sun and Liu 1986 [JZ-Nusu]
Sun et al. 1991 [ZMYYC] #45

Collected in Zhizhiluo Village, Bijiang County, Nujiang Prefecture, Yunnan.

Inventory: Sun and Liu 1986 [JZ-Nusu] (pages 3-16)
Sun et al. 1991 [ZMYYC] #45 (pages 297-302)

INITIALS

Simple

p	t	ts	tʂ	tɕ	k	ʔ
ph	th	tsh	tʂh	tɕh	kh	
b	d	dz	dʐ	dʑ	g	
f		s	ʂ	ɕ	x	h
fh		sh	ʂh	ɕh		
v		z	ʐ	ʑ	ɣ	
m			n	ȵ	ŋ	
m̥			n̥	ȵ̊	ŋ̊	
		l	ɹ			
		ɬ				

- Before /ɯ/, the aspirated stops and affricates are realized with a following velar fricative [x].
- Before the retroflexed rhymes the alveolars (except the affricates) are pronounced as corresponding retroflexed segments.
- The voiceless nasals have aspirated oral release; i.e. /m̥-/ > [m̥pʰ-].
- [m] can form a syllable by itself.

Cluster

pɹ	phɹ	bɹ	fɹ	vɹ	mɹ	m̥ɹ	kɹ	khɹ	gɹ	xɹ
ʔm	ʔn	ʔn	ʔȵ	ʔl						

RHYMES

On-glides

i , y ɯ , u

Main Vowels

Unconstricted			*Constricted*		
ɿ					
i , y		ɯ , u	i̱		u̱
e		o	e̱		o̱
ɛ	ə , ɵ	ɔ	ɛ̱	ə̱	ɔ̱
		ɑ			ɑ̱
Nasal			*Retroflex*		
ɪ̃					
ĩ		ũ			ũᴵ
ẽ		õ	ẽᴵ		
ɛ̃	ə̃ , ɵ̃	ɔ̃		əᴵ əᴵ	ɔᴵ
		ɑ̃			ɑᴵ ɑ̃ᴵ ɑ̱ᴵ ɑ̱ᴵ

- Medial glides /-i- -u-/ combine with most vowels, /-y-/ with very few, and /-ɯ-/ only with /i/ and /e/ (mainly after labial initials).
- Medial glide /-u-/ can also occur with two vowels, /e̱ ɔ̃ᴵ/, that do not occur alone.
- In some rhymes the /-i-/ onglide can be realized as [-ɪ-].

TONES

mɑ^{53} mɑ^{55} mɑ^{35} mɑ^{31}

- In [JZ-Nusu], tones are represented by Chao tone letters, not numbers.
- Most tense rhymes carry tone /^{53}/, which is then realized as [^{54}].
- /^{55}/ is phonetically [^{44}]; /^{35}/ is [^{24}].
- /^{31}/ is realized as [^{21}] in monosyllables, [^{11}] in prefix syllables, and [^{22}] medially in polysyllabic words.

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NYI[1]

Data Source: Wu et al. 1984 [YHJC-Sani] [WAH-Sani]
Southeastern Yi (Sani).

Inventory: Wu et al. 1984 [YHJC-Sani] [WAH-Sani] (Nyi: pages 13-14; Chinese: pages 15-16)

Note: Transcription of [WAH-Sani] normalized in the STEDT database.

CONSONANTS

p	t	tɬ	ts	tʂ	tɕ	k	q	
ph	th		tsh	tʂh	tɕh	kh	qh	
b	d	dl	dz	dʐ	dʑ	g		
f			s	ʂ	ɕ	x	χ	h
v			z	ʐ	ʑ	ɣ		
m	n				ɳ	ŋ		
	l							
	ɬ							

VOWELS

Monophthongs

Unconstricted			*Constricted*		
i ĩ		ɯ ɯ̃ , u	i̱		ɯ̱ , u̱
ɪ ɪ̃			ɪ̱		
e ẽ		ɤ , o õ			ɤ̱ , o̱ õ̱
ɛ	ʌ ʌ̃	ɒ	ɛ̱	ʌ̱	ɒ̱

Diphthongs

Unconstricted			*Constricted*		
ui uĩ		iu			iu̱
ue uẽ					
	iʌ uʌ uʌ̃			iʌ̱ uʌ̱ uʌ̱̃	

[1]Called *Yi* in [YHJC-Sani], [WAH-Sani]; *Sani* or *Sani (Nyi)* in [JAM-Quo], [JAM-TSR], [JAM-GSTC], [JAM-VSTB], [RJL-DPTB].

- /ɛ/ represents [æ]. This is transcribed phonetically in our data for [WAH-Sani], but follows copy in our data for [YHJC-Sani].
- /ɒ/ is transcribed <ɑ> in our data for [WAH-Sani].
- Syllables /mu ŋu/ (constricted or unconstricted) are realized as [m̩ ŋ̩]; syllables /ni li/ (constricted or unconstricted) are realized as [n̩ l̩]. These are all transcribed phonetically in the STEDT database for [WAH-Sani], but follow copy in the STEDT database for [YHJC-Sani].
- Syllables /ɬi tɬi dli/ (constricted or unconstricted) are realized as [ɬ̩ tɬ̩ dl̩]. These are all transcribed phonetically in the STEDT database for [WAH-Sani], but follow copy in the STEDT database for [YHJC-Sani].
- When /i i̱/ appear after /ts tsh dz s z/ they are realized as [ɿ ɿ̄]; after /tʂ tʂh dʐ ʂ ʐ/ they are realized as [ʅ ʅ̄]. These are all transcribed phonetically in the STEDT database for [WAH-Sani], but follow copy in the STEDT database for [YHJC-Sani].
- The diphthongs and semi-nasalized vowels generally appear only in Chinese loanwords.

TONES

mA^{55}	high level
mA^{33}	mid level
mA^{21}	low falling

- When syllables with the zero-initial appear in the mid level tone, the vowel is always realized as constricted.

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NYI

Data Source: Ma 1951 [MXL-Sani]

Inventory: Matisoff 1979 [JAM-Quo] (p 20), normalized from [MXL-Sani]
The charts below have been modified to reflect the data as it appears in [JAM-TSR].

Secondary Sources: [JAM-TSR]

CONSONANTS

p	t	ts	tɬ	tʂ	tš	k	k^w	q	
p‘	t‘	ts‘		tʂ‘	tš‘	k‘	$k‘^w$	q‘	
b	d	dz	dl	dʐ	dž	g			
f	s			ʂ	š	x	x^w	χ̣	h
v	z			ʐ	y	ɣ			
m	n				ñ	ŋ			
		l							
		lh							

VOWELS

Unconstricted			*Constricted*	
ʐ̣ , ż	ʐ̩		ʐ̰	y̰
I	ɤ	u	i	ɯ
e	ɚ	o		
æ	a			

Syllabic Nasals

ṃ ṇ ŋ̣

- <ż> represents a high front rounded apical vowel, the rounded counterpart of <ʐ̣> = [ɻ].

TONES

ma 55 ma 44 ma 33 ma 11 ma 22s

- Tone /22s/ is stopped.
- In the data from [JAM-GSTC] the tones are written with superscript numbers, e.g. <ni^{55} vi^{22}s>.

NOTES

- There is considerable variation in the transcriptions in the STEDT database, even from the single source [JAM-TSR]. Aspiration is represented by both <‘> and <h>; syllabic consonants are represented by <C̣>, <C̩> and <C̥>; etc. The consonant symbol <c> appears occasionally to indicate vowel constriction.

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NYI

Data Source: Chen 1986 [CK-YiQ]
Spoken in Lunan, Yiliang, Shizong, and Luliang Counties, Yunnan.

Inventory: Chen 1986 [CK-YiQ]

CONSONANTS

p	t	tɬ	ts	tʂ	tɕ	k	q	
pʰ	tʰ		tsʰ	tʂʰ	tɕʰ	kʰ	qʰ	
b	d	dl	dz	dʐ	dʑ	g		
f			s	ʂ	ɕ	x	χ	h
v			z	ʐ	ʑ	ɣ		
m	n				ɳ	ŋ		
	l							
	ɬ							

- /m n/ can constitute tone-bearing syllables, in which case they are transcribed <m̩ n̩>.

VOWELS

i		ɯ , u
ɪ		
e		ɤ , o
æ	a	ɑ

- /i/ has allophones [ɿ ʅ] which are not indicated in the transcription.

TONES

ma^{55} ma^{44} ma^{33} ma^{22} ma^{21}

❖

PAANG

Data Source: Löffler 1985 [LL-PRPL]

The Paangkhua live in the middle and northern part of the eastern side of the Chittagong Hill Tracts, Bangladesh. The data is from two informants: "one Paangkhua who used Lorrain-Savidge's dictionary of 1899, replacing English by Paang" (the "LP-dialect"); also "a Bawm, who used the Bawm-English dictionary (on which I have been working from time to time since 1965)" (the "BP-dialect").

Inventory: Löffler 1985 [LL-PRPL]

CONSONANTS

Initials

p	t	(tl)	ts	k	(kr)	
ph	th	tlh		kh		
b	d			(g)		
(f)			s			h
v			z			
m	n			ng		
	l	r				
	(hr)	(hl)				

- /tl hl hr f/ occur only in loanwords (probably from Lushai); /g kr/ occur only in loanwords from Bengali and English.

Finals

-p	-t			-k
-m	-n			-ng
	-l	-r		

- According to Löffler, "[T]he finals are the same as in Lushai, except that (apart from loan words) no glottal stop appears behind laterals and glides" (p. 280). However, there are no final glottal stops in *any* of the Paang data presented.

VOWELS

Monophthongs

Monophthongs		*Diphthongs*
i ii	u uu	
e ee	o oo	
a aa		ia ua

- In addition, offglides [i u] may follow the above vowels, although "whether Paang differentiates between aai/ai, ooi/oi, uui/ui needs to be checked" (p. 280).

TONES

má	high
mă	high-rising
máà	high-falling
maà	low or low-falling, long
mà	low short/breathy

- Prefixes have no tone marks.
- The high-falling tone is used in certain exclamations and terms of address only.
- "A peculiar phenomenon of Paang (otherwise well-known from African tone languages) is the appearance of a mid tone instead of the high tone in second or later position: this tendency may spread over the whole sentence leading to a repeated lowering of the pitch level" (p. 281).

PADAM[1]

Bor-Abor

Data Source: J. H. Lorrain 1907 [JHL-AM]

Padam and Mising, two closely related varieties of Eastern Tani, are treated together in Lorrain's dictionary. Global phonological differences between the two varieties, though not mentioned by Lorrain, most certainly exist. Separate Padam and Mising forms are provided only when Lorrain detected a linguistic (usually lexical) difference.

Inventory: J. H. Lorrain 1907 [JHL-AM]

Secondary Sources: [JS-HCST], [JAM-Ety]

See the inventory for Mising.

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PADAM

Data Source: Tayeng 1983 [AT-Padam]

Collected in Siang District, Arunachal Pradesh.

Inventory: Tayeng 1983 [AT-Padam] (page 1)

CONSONANTS

Initials

p	t			k
b	d		j	g
	s			
m	n		ny	ng
	l	r	y	

Finals

-p	-t		-k
-m	-n		-ng
	-l	-r	

[1]Called *Abor* in [JHL-AM], [JAM-GSTC], [JAM-VSTB], [RJL-DPTB], [STC].

- /j/ is a voiced palatal affricate [dʑ], /ny/ is a palatal nasal [ɲ], /y/ is a palatal semi-vowel [j].

VOWELS

i	í	u
e	é	o
	a	

- /e/ represents [ə]; /í/ represents [ɯ].

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PATTANI[1]

Data Source: Sharma SR 1991b [STP-ManQ]
STEDT Questionnaire. The data is based on work with an informant, Shri Tashi Phuncock.

Inventory: Partially extracted from Sharma SR 1991b [STP-ManQ]

CONSONANTS

Simple Initials

p	t	ts	T	ʈʂ	c	k	
ph	th	tsh	Th	ʈʂh	ch	kh	
b	d	dz	D	ɖʐ	j	g	
bh	dh		Dh		jh	gh	
		s		ʂ	š		h
		z					
m	n		N		ñ	ŋ	
mh	nh				ñh		
w	l	r	R		y		
wh	lh	rh			yh		

Medials

-w- -l- -r-

- /T Th D Dh N R ʂ ʈʂ ʈʂh ɖʐ/ are retroflex.

VOWELS

Monophthongs			*Diphthongs*	
i , i:		u , u:		
e , e:	ə	o , o:	ei	oi
		ɑ , ɑ:	ai ua	

- Nasalized /ɑ̃/ occurs rarely.

[1] Also called *Manchad* or *Manchati*.

TONES

mà high falling
mɑ level
mǎ falling rising

❖

PHOM

Data Source: Marrison 1967 [GEM-CNL]

Spoken in the northwest part of the Tuensang District of Nagaland. Marrison takes his lexical data from [GEM-Phom].

Inventory: Marrison 1967 [GEM-CNL] (page 363)

Secondary Sources: [WTF-PNN]

SYLLABLE CANON

(C)V(C/V)

CONSONANTS

Initials

p	t	ch	k	
ph	th		kh	
b	d	j	g	
		sh		h
v				
m	n	ny	ng	
	l	y		

Finals

-p	-t	-k
-m	-n	-ng

- Marrison indicates that <ch> corresponds to /c/.
- Marrison indicates that <sh> corresponds to /ʃ/ but does not list /ʃ/ in his phoneme chart. The omission is probably a typographical error.

VOWELS

Monophthongs			*Diphthongs*	
i		u		
e	ü	o	ei	ou
	a		ai	

- Marrison indicates that <ü> represents /ə/.

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PHUNOI[1]

Data Source: Bradley 1979 [DB-PLolo]
The data is based on fieldwork carried out in Laos in 1972.

Inventory: Bradley 1979 [DB-PLolo] (pages 45-47)

CONSONANTS

Minor Syllable Initials

	(t)	c	k
		ch	kh
b	d	ɟ	g
f	s		
w	l	j	

Initials

p	pj	t	c	(kw)	k	ʔ
ph	phj	th	ch	khw	kh	
b	bj	d	ɟ		g	
(f)		s	(ʃ)		(x)	h
		sh				
m	(mj)	n	ɲ			
hm	hmj	hn	hɲ			
w		l	j			
		hl	hj			

- Minor syllables have a reduced vowel, neutralized tone, and no final consonant. They usually occur as prefixes.
- /c ch ɟ/ are palato-alveolar affricates [tʃ tʃh dʒ].
- /hj/ is realized as [çj].
- Items in parentheses occur only in loanwords.

Finals

-p	-t		(-k)
-m	-n	-ɲ	(-ŋ)

[1]Called *Phou Noy* in [MF-PhnQ]. Also called *Côông* or *Khong* by the Vietnamese.

VOWELS

Monophthongs			*Diphthongs*	
i ĩ	ɨ ɨ̃	u ũ		
e ẽ	ə ə̃	o õ		
	a ã		ai ãi	aw ãw

- Some of the nasalized vowels occur only in loanwords.

TONES

má	high level or falling
ma	mid level
mà	low level or falling
(mă)	low rising

- The low rising tone occurs only in loanwords.

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PHUNOI

Data Source: Ferlus 1990 [MF-PhnQ]
STEDT Questionnaire. Data collected by Patrick Beaudouin.

Inventory: Ferlus 1990 [MF-PhnQ]

CONSONANTS

Initials

p	pj	t	c	k	ko	ʔ
ph	phj	th	ch	kh	kho	
b	bj	d		g		
f		s				h
m	mj	n		ɲ		
hm	hmj	hn		hɲ		
v	vj	l		y		
		hl		hy		

Finals

-p	-t	-ʔ
-m	-n	

- /ch/ represents [tʃ].
- /ko kho/ represent [k^w kh^w].
- Glottal-stop initial is sometimes realized as zero.

VOWELS

Monophthongs

i ĩ	ɨ ɨ̃	u ũ
e	ə	o (õ)
	a ã	

Diphthongs

		ui
eo	əi	oi
	ai	ao

- The seven oral vowels combine with all five final consonants. The nasal vowels and diphthongs occur only in open syllables.
- There is also a vowel <ᵊ> which represents a non-phonemic "support vowel" ("voyelle d'appui non phonémique").

TONES

ma^{55}	high
ma	mid
ma^{31}	low
maʔ^{55}	mid high
maʔ^{31}	low

- Checked tones occur in syllables with /-p -t -ʔ/ finals.
- Since Ferlus describes the high checked tone as "mid high", it is probably not realized as [^{55}].

❖

PUIRON

Data Source: Marrison 1967 [GEM-CNL]

Spoken in the northern part of the Manipur State, to the east of the Rongmei area. Marrison calls Puiron a dialect of Rongmei, but treats it separately. Marrison takes his lexical data from [WM-Cha].

Inventory: Marrison 1967 [GEM-CNL] (page 364)

SYLLABLE CANON

(C)V(C/V)

CONSONANTS

Initials

p	t		ch	k	
ph	th			kh	
b	d		j	g	
		s			h
m	n			ng	
w	l	r	y		

Finals

-p	-t	-k
-m	-n	

- Marrison indicates that <ch> represents unaspirated /c/.

VOWELS

Monophthongs		*Diphthongs*	
i	u		
e	o	ei	oi
a		ai	au

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PUMI

Jinghua

Data Source: Sun et al. 1991 [ZMYYC] #11
Lu 1983 [JZ-Pumi]

Southern Dialect. Collected in Jinghua Town, Hexi District, Lanping County, Yunnan.

Inventory: Sun et al. 1991 [ZMYYC] #11 (pages 192-196)
Lu 1983 [JZ-Pumi] (pages 3-20)

INITIALS

Simple

p	t	ts	tʂ	tʃ	tɕ	k	q
ph	th	tsh	tʂh	tʃh	tɕh	kh	qh
b	d	dz	dʐ	dʒ	dʑ	g	ɢ
(f)		s	ʂ	ʃ	ɕ	x	
(v)		z	ʐ	ʒ		ɣ	
m	n				ɳ	ŋ	
m̥	n̥						
	l						
	ɬ						

Cluster

sp	st	stʃ	sk	sq
sph	sth	stʃh	skh	sqh
sb	sd	sdʒ	sg	sɢ
pʐ	phʐ	bʐ	mʐ	
pʒ	phʒ	bʒ		

- /f/ and /v/ are mainly found in Chinese loans.
- /l/ is realized as laminal [l̻] before /ɛ/ and /y/, as retroflexed [ɭ] before /ə/ and /o/.
- /x/ is realized as [x] before high vowels and as [χ] before low vowels; /ɣ/ is realized as [ɣ] before front vowels and as [ʁ] before low vowels.
- /ʐ/ and /ʒ/ when preceded by voiceless initials are realized as [ʂ] and [ʃ] respectively.

- /s/ in clusters is actually realized as follows:
  [f] before /p ph/ [v] before /b/
  [s] before /t th k kh/ [z] before /d g/
  [ʃ] before /tʃ tʃh/ [ʒ] before /dʒ/
  [χ] before /q qh/ [ʁ] before /G/

RHYMES

On-glides

i- , y- u-

Main Vowels

Oral			*Nasal*		
i , y		ɯ , u	ĩ		
e , ø	ə	ɤ , o		ə̃	õ
ɛ	ɐ		ɛ̃		
	a	ɑ		ã	ɑ̃

Off-glides

-i -u

- The on-glides /u- y-/ occur only with unrounded vowels.
- The off-glides occur only in the following combinations with main vowels: /ei ai ɯu əu ɑu ɑ̃u/.
- Four triphthongs occur: /iɯu iəu iɑu iɑ̃u/.
- /i/ is realized as [ɯ] after palatal affricates or before /ɯ/.
- /õ/ can be pronounced in free variation as [õ] or [ũ]; /iɛ iɛ̃/ as [iɛ iɛ̃] or [ia iã].
- /-ɯ-/ in /ɯu/ is realized as [ɤ].
- /ei/, /ou/, and /iəu/ are mainly found in Chinese loans.

TONES

ma^{55} high level
ma^{13} low rising

- In [JZ-Pumi], tones are represented by Chao tone letters, not numbers.

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PUMI

Taoba

Data Source: Sun et al. 1991 [ZMYYC] #10
Lu 1983 [JZ-Pumi]

Northern Dialect. Collected in Taoba Town, Muli County, Sichuan.

Inventory: Sun et al. 1991 [ZMYYC] #10 (pages 196-200)
Lu 1983 [JZ-Pumi] (pages 90-95)

INITIALS

Simple

p	t	ts	tʂ	tɕ	k
ph	th	tsh	tʂh	tɕh	kh
b	d	dz	dʐ	dʑ	g
f		s	ʂ	ɕ	x
		z	ʐ	ʑ	ɣ
m	n			ɳ	ŋ
m̥	n̥			ɳ̊	ŋ̊
	l		r		
	ɬ				

Cluster

pʐ phʐ bʐ

- Alveolar stops /t th d/ are close to the corresponding retroflexes [ʈ ʈh ɖ] before /i/; close to the corresponding dentals [t̪ t̪h d̪] before /u/.
- Palatal initials usually articulate further front before /ɪ ʊ/; velars articulate further back, close to uvulars, before /a/.
- /ɳ̊ ŋ̊/ are mainly found in Tibetan loans; /f/ is mainly found in Chinese loans.
- /ʐ/ when preceded by voiceless initials is realized as [ʂ].

RHYMES

On-glides

i- , y- u-

Main Vowels

Oral			*Nasal*		
i , y	ɨ , ʉ	ɯ , u	ĩ , ỹ		ũ
e , ø	ə	o	ẽ , ø̃	ə̃	õ
ɛ	ɐ		ɛ̃	ɐ̃	
	a			ã	

Off-glides

-u

- The on-glides /u- y-/ occur only with unrounded vowels.
- The off-glide /-u/ occurs only in the following combinations: /əu au iau/.
- /a/ is actually [ᴀ].
- Nasalized vowels are relatively lower than their oral counterparts.
- /ɨ/ and /ʉ/ in a few words may become constricted.

TONES

ma^{55} high level
ma^{53} high falling
ma^{35} high rising

- In [JZ-Pumi], tones are represented by Chao tone letters, not numbers.

QIANG (NORTHERN)

Mawo

Data Source: Sun Hongkai 1981 [JZ-Qiang]
Sun et al. 1991 [ZMYYC] #8

Northern Dialect. Collected in Mawo, Heishui County, Sichuan

Inventory: Sun Hongkai 1981 [JZ-Qiang] (pages 22-56)
Sun et al. 1991 [ZMYYC] #8 (pages 182-191)

Secondary Sources: [JS-Mawo] (from [JZ-Qiang])

CONSONANTS

Simple Initials

p	t	ts	tʂ	tʃ	tɕ	k	q	
ph	th	tsh	tʂh	tʃh	tɕh	kh	qh	
b	d	dz	dʐ	dʒ	dʑ	g		
(ɸ)		s	ʂ		ɕ	x	χ	h
β		z	ʐ		ʑ	ɣ	ʁ	
m	n				ȵ	ŋ		
w	l	r	ɹ		j			
	ɬ	ɾ̥						

- /ɸ/ is found mainly in Chinese loans.
- /β/ and /ɾ̥/ are found mainly in the second syllable of compounds and in consonant clusters.
- /ŋ/ is labialized in native vocabulary.
- The retroflex affricates are very lightly fricated, and are closer to stops than affricates.
- /r/ is trilled as an initial, but flapped in clusters; it corresponds to Taoping /dʐ/ or /l/.
- Dental stops are affricated before central vowels /ə ɤ/.
- Older speakers differentiate another series of palatals.
- /m n l/ are velarized before /ɤ/.
- Voiceless stop codas are released, often with slight aspiration.

Initial Clusters

mdz									
sp	st	sk	sq	stɕ	sm	sn	snʐ	sl	
zb	zd	zg							
rp	rb	rd	rk	rg	rts	rdz	rtʃh	rdʒ	rdʑ
rm	rŋ	rl	rw						
r̥p	r̥t	r̥k	r̥ts						
ʂp	ʂk	ʂq	ʂtɕ						
khs	khʂ	khɕ							
gz	gʐ	gʑ							
xp	xts	xtʂ	xtʃ	xtɕ	xl				
ɣb	ɣdʐ	ɣdʒ	ɣdʑ	ɣl	ɣn				
qhs	qhʂ								
χt	χts	χtʂ	χtʃ	χtɕ	χl				
ʁd	ʁdz	ʁdʐ	ʁdʒ	ʁdʑ	ʁnʐ	ʁz	ʁl	ʁʑ	

Simple Finals

-p	-t	-ts	-tʂ	-tʃ	-k	-q
-b	-d			-dʒ		
-ɸ		-s	-ʂ			-χ
		-z	-ʐ			
-m	-n				-ŋ	
	-l	-r				
		-r̥				

Final Clusters

-st	-zd		
-rb	-rg		
-ʂp	-ʂk		
-xs	-xts	-xtʂ	-xtʃ
-ɣz	-ɣl	-ɣdʐ	-ɣʐ
-χp	-χs	-χl	-χʂ
-ʁdz	-ʁz	-ʁl	-ʁdʐ

VOWELS

Monophthongs

Plain			*Retroflex*		
i iː , y		u uː	iᴵ , yᴵ		uᴵ uːᴵ
e	ə	ɤ ɤː	eᴵ	əᴵ əːᴵ	ɤᴵ
a aː		ɑ ɑː	aᴵ aːᴵ		ɑᴵ ɑːᴵ

Diphthongs

Plain			*Retroflex*		
ie ue	uə	uɤ	ueᴵ	uəᴵ uəːᴵ	
ia ya ua iaː yaː uaː		iɑ uɑ uɑː	uaᴵ iaːᴵ yaːᴵ uaːᴵ		iɑᴵ uɑᴵ uɑːᴵ

- There are also vowels with offglides /ai ɑu əu iu uai iau/ which are mainly found in Chinese loans.
- /iaː iaːᴵ ya yaː yaːᴵ/ appear only in inflected words.

STRESS

- There are no phonemic tones in Mawo, but there is contrastive stress in some words. Stress is not marked in the data.

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QIANG (NORTHERN)

Yadu

Data Source: Dai 1989 [DQ-QiangN]
Data collected by Huang Chenglong in Moyu Village, Yadu Town, Sichuan.

Inventory: Dai 1989 [DQ-QiangN]

CONSONANTS

Simple Initials

p	t	ts	tʂ	tɕ	k	q	
ph	th	tsh	tʂh	tɕh	kh	qh	
b	d	dz	dʐ	dʑ	g		
f		s	ʂ	ɕ	x	χ	h
v		z	ʐ		ɣ	ʁ	ɦ
m	n			ɳ	ŋ		
	l			j			
	ɬ						

- /f/ is sometimes realized as [ɸ], and /v/ as [w].
- /d/ is not listed in the inventory, but does occur initially, e.g. <dukmi> ‘ghost.’
- /ɣ/ is not listed in the consonant inventory, but occurs in consonant clusters.

Initial Clusters

st	sts	sʁ		
zd				
ʂp	ʂk	ʂq		
ʐb	ʐm	ʐq		
ɕp	ɕtɕ			
ʑdʑ				
xs	xl	xʂ	xtʂ	
ɣz	ɣl	ɣdʐ	ɣʐ	
χs	χl	χtʂ	χʂ	χq
ʁd	ʁz	ʁl	ʁdʐ	

Simple Finals

-p	-t	-ts	-tʂ	-tɕ	-k	-q
	-d			-dʑ	-g	
-ɸ		-s	-ʂ	-ɕ	-x	-χ
		-z	-ʐ			
-m	-n			-ɳ	-ŋ	
	-l					

Final Clusters

-ɕtɕ	
-xtʂ	
-ɣz	-ɣʐ
-χs	-χʂ
-ʁl	

VOWELS

Monophthongs

Short			*Long*		
i , y		u	iː , yː		uː
e eᴵ	ə əᴵ	o	eː	əː əᴵː	oː
æ	a		æː		aː

Diphthongs

On-glides			*Off-glides*	
ie ye ue	uə uəᴵ	io	ei	oi
iæ uæ	ua		ai au	
iæː uæː	uaː			

QIANG (SOUTHERN)

Taoping

Data Source: Sun Hongkai 1981 [JZ-Qiang]
Sun et al. 1991 [ZMYYC] #9

Southern Dialect. Collected in Taoping, Tonghua District, Li County, Sichuan.

Inventory: Sun Hongkai 1981 [JZ-Qiang] (pages 4-22)
Sun et al. 1991 [ZMYYC] #9 (pages 178-182)

INITIALS

Simple

p		t	ts	tʂ	tʃ	tɕ	k	q
ph		th	tsh	tʂh	tʃh	tɕh	kh	qh
b		d	dz	dʐ	dʒ	dʑ	g	(ɢ)
(ɸ)	(f)		s	ʂ	ʃ	ɕ		χ
			z	ʐ	ʒ	ʑ		ʁ
m		n				ɳ	ŋ	
		l						

Cluster

χp	χt	χtʂ	χtʃ	χtɕ	χk	χq
χb	χd	χdz̧	χdʒ	χdʑ	χg	χG
χm	χn	χɳ	χŋ			
pz	phz	bz				
pz̧	phz̧	bz̧				

- /f ɸ/ mainly occur in Chinese loans.
- Dentals become significantly labialized before /u/ and /uə/.
- Dental stops /t th d/ become affricated before /ə/; e.g. <də> ‘beans’ is pronounced [dðə].
- /d/ is often pronounced as [l] before /i/;
- Zero-initial is realized as [ʔ].
- /G/ is rare, and is found only in consonant clusters. Only two words occur with /G/ in the corpus.
- The uvular fricatives /χ/ and /ʁ/ are realized as velars before front vowels; before other vowels and in clusters their values approximate glottal fricatives.
- From a comparison of the speech of old and young people, it seems some /tsh dz tʂh dz̧ tɕh dʑ/ initials developed out of /khs qhs gz khʂ qhʂ qz̧ khɕ gʑ/ clusters, which are still so pronounced by older people.
- [m] and [ŋ] can form syllables by themselves. Syllabic /ŋ/ is labialized.
- Clusters are being simplified in the speech of young people.
- /ʁ z z̧/ in clusters become [χ s ʂ] respectively depending on the voicing of the initial consonant.
- Nasals with the /χ-/ prefix are often pronounced as voiceless nasals.

RHYMES

ɿ					
i , y		u			
e	ə əɹ	o	ie ye		io
a		ɑ	ia ya		iɑ yɑ
			yi		
ue	uə		ei	əu	
ua		uɑ	ai		ɑu

			(in) (yn)		(un)
	iəu			(ən)	
uai		iɑu	an		
iŋ		uŋ	(ian)	(uan)	(yan)
	(əŋ)				
		ɑŋ	(iaŋ)	(uaŋ)	uəŋ

- [-in -ən] alternate freely with [-iŋ əŋ] respectively in the speech of some people.
- Nasal finals are mostly found in Chinese loans, but /an iŋ ɑŋ uŋ uəŋ/ do occur in a few native words.
- Triphthongs occur mainly in Chinese loanwords and in inflected words (e.g. when the third person future tense suffix <-u> is added to verbs ending in diphthongs).

TONES

ma^{55} ma^{51} ma^{33} ma^{31} ma^{241} ma^{13}

- In [JZ-Qiang], tones are represented by Chao tone letters, not numbers.
- /^{51}/ and /^{13}/ are mostly found in Chinese loans.
- Tone sandhi rules are complex. Where possible, citation tones are transcribed, but for some forms where the individual morphemes are unanalyzable, the tones are given as pronounced.

RENGMA

Data Source: Marrison 1967 [GEM-CNL]

Rengma is mainly spoken to the north of the Kohima District. Marrison takes his lexical data from [GEM-Reng].

Inventory: Marrison 1967 [GEM-CNL] (page 365)

SYLLABLE CANON

(C)(C)V(n)

CONSONANTS

Initials

p	pf/pv	t		ts/ch	k	kv	
ph		th			kh		
mp	mpf	nt		nych	ngk		
mph		nth			ngkh		
b		d		j	g	gw	
mb		nd	ndr	nyj		nggw	
	f		s	sh			h
	v		z	zh			
			ns	nsh			
	mv						
m		n		ny	ng		
mh		nh					
mm		nn		nyny			
w		l	r	y			
wh			rh	yh			

Clusters

sw shw jw

nm nr nrh

Finals

-n

- Marrison indicates that <ch> and <ts> correspond to /c/; <pf> and <pv> correspond to /pf/. It is not clear whether this represents allophonic or merely orthographic variation.
- <kv> corresponds to /kw/.

VOWELS

i		u
e	ü	o
	a	

- Marrison indicates that <ü> corresponds to /ə/.

RONGMEI[1]

Songbu

Data Source: Marrison 1967 [GEM-CNL]

Spoken in northwest Manipur and in adjacent parts of the Cachar District. There are two main dialects: Songbu, which is spoken in Temenglong and the main Nruanghmei area, and Puiron, which Marrison treats separately. Marrison takes his lexical data from [GEM-Nruan].

Inventory: Marrison 1967 [GEM-CNL] (page 362)

CONSONANTS

Initials

p	t	c	k	
mp	nt	ñc	ŋk	
mph	nth		ŋkh	
ph	th		kh	
b	d	j	g	
mb	nd	ñj	ŋg	
s				h
ns				
m	n		ŋ	
mm	nn		ŋŋ	
	l	r		
	nl	nr		

Finals

-p	-t	-k	-ʔ
-m	-n	-ŋ	
-mʔ	-nʔ	-ŋʔ	

[1]Called *Nruanghmei* in [GEM-CNL]; *Kabui* in [SIN1986]

VOWELS

Monophthongs			*Diphthongs*		
i		u	ai	ei	ui
e	ə		au	ao	ou
a				ua	

❖ ❖ ❖ ❖ ❖

RONGMEI

Data Source: Singh and Singh 1986 [SIN1986]

Inventory: Singh and Singh 1986 [SIN1986]

CONSONANTS

p	t	č	k	
p^h	t^h		k^h	
b	d	ǰ	g	
	s			h
m	n		ŋ	
w	l	y		
	r			

VOWELS

i		u
e	a	o

- /a/ is [ə].

❖

SAK[1]

Data Source: L. Bernot 1967 [LB-LC]
The data was obtained through a Marma interpreter.

Inventory: L. Bernot 1967 [LB-LC] (pages 228-229)

CONSONANTS

Initials

p	θ	t	č	c	k	ʔ
ph		th				
b		d	ǰ	j	g	
f		s				h
v						
m		n	ñ		ṅ	
w		l	r			

Finals

-f	-ṅ	-ʔ	-h

- /θ/ is a dental stop.
- /č ǰ/ are pre-palatal affricates.
- /c j/ are retroflex affricates.
- /-h/ and /-f/ very rarely appear in final position. Each is only known to occur in one word.

VOWELS

i		ɯ , u
ɪ		
e	ə	o
		ɑ

[1]Called *Çak* in [LB-LC].

TONES

mɑ	mid-low
ˋmɑ	mid-high
mɑ´	low

- Syllables in the mid-low tone are characterized by long vowels and even stress.
- Syllables in the mid-high tone are stressed.
- Syllables in the low tone have short vowels, are stressed, and terminate with a slight glottal constriction.
- Only two tones are possible on syllables ending with /-ʔ -n̓ -h/: mid-low and mid-high.

❖

SANGKONG

Data Source: Li Yongsui 1991 [LYS-Sangkon]

Inventory: Matisoff 1993 [JAM-SK] (pages 123-126)

CONSONANTS

Initials

p	pj	t	ts	tɕ	k	q	ʔ
ph	phj	th	tsh	tɕh	kh	qh	
			s	ɕ	x		h
mb	mbj	nd				ŋg	
m	mj	n		ɳ		ŋ	
w		l		ʑ			

- The four finals /-p -m -n -ŋ/ appear in the data discussed by Matisoff. In addition, there is one form from [LYS-Sangkon] with a final /-t/. Due to the small amount of data at our disposal, we cannot state categorically that these are the only five final consonants of Sangkong.

VOWELS

ɿ̄

i i̱ ɯ , u u̱

e e̱ , ø ø̱ o o̱

a a̱

TONES

ma^{55} high level

ma^{33} mid level

ma^{31} low falling

[ma^{35} high rising (sandhi tone)]

❖

SANGTAM

Data Source: Marrison 1967 [GEM-CNL]

Spoken in Lophomi and Thukumi, both located in Tuensang District, and Pochuri in the south of the Kohima District of Nagaland. Marrison takes his lexical data from [GEM-Sang].

Inventory: Marrison 1967 [GEM-CNL] (pages 365-366)

SYLLABLE CANON

(C)(C)V(C)

CONSONANTS

Simple Initials

p	t		ts/ch	k	
ph	th		ths	kh	
b	d		j	g	
	s		sh		h
	z			gh	
m	n		ny	ng	
	l	r	y		

Initial Clusters

tp	tph	tr	thr
ky	khy		

- Marrison indicates that <ts> and <ch> correspond to /c/. It is not clear whether this represents allophonic or merely orthographic variation.
- <ths gh ny sh> correspond to /ch ɣ ñ ʃ/ respectively.

Finals

-p		-'
-m	-ng	

- <-' > corresponds to /-ʔ/.

VOWELS

i		u
e	ü	o
	a	

- Marrison indicates that <ü> corresponds to /ə/.

❖

SEMA

Data Source: Marrison 1967 [GEM-CNL]

Sema is mainly spoken in the southeastern part of the Mokokchung District in the center of Nagaland. Marrison takes his lexical data from [BOR-Sema].

Inventory: Marrison 1967 [GEM-CNL] (page 367)

SYLLABLE CANON

(C)(C)V(V)

CONSONANTS

Initials

p	pf/pv	t	ts/ch	k	
ph		th			
b		d		g	
	f	s		kh	h
	v	z			
m		n	ny		
mh		nh	nyh		
w		l	y		
		lh			

Clusters

mp	mt	ml
kw	khw	gw
ky	khy	

- Marrison indicates that <ch> and <ts> correspond to /c/; <pf> and <pv> correspond to /pf/. It is not clear whether this represents allophonic or merely orthographic variation.
- Marrison indicates that <ny nhy> correspond to /n nh/ respectively. This is certainly a typographical error for /ñ ñh/, which appear in his phoneme chart.
- <kh> corresponds to /x/.

VOWELS

Monophthongs			*Diphthongs*		
i		u			iu
e		o	ei eu	oe	ou
	a		ae	au	

❖ ❖ ❖ ❖ ❖

SEMA

Data Source: Sreedhar 1976 [SRE1976]
Collected in Zunheboto District, Nagaland.

Inventory: Sreedhar 1976 [SRE1976] (consonant chart: page 78; vowel chart: page 60; phonemic charts: page 26)
The transcription of the lexical data is phonetic, not phonemic.

SYLLABLE CANON

CV(G)

CONSONANTS

Initials

Phonetic chart

p	t̲	c	t	č	k	k>	q	
pʰ	t̲ʰ	cʰ	tʰ	čʰ	kʰ	kʰ>	qʰ	
b	d̲		d	j/ǰ	g	g>		
f		s		š	x			h
v		z		ž	ɣ			
m	n̲			ñ	ń			
(mʰ)	(n̲ʰ)			(ñʰ)				
w			l	y				
			lʰ					

Phonemic chart

p	t	c	k	q	
b	d		g		
f		s	x		h
v		z	ɣ		
m	n		ṅ		
w	l	y			

- [t̪ t̪ʰ d̪] are dental stops. /t tʰ d/ are realized as [t tʰ d] before front vowels and as [t̪ t̪ʰ d̪] elsewhere.
- [c cʰ] are dental affricates.
- /c s z/ are realized as [c s z] before central vowels and [č š ž] elsewhere. /z/ is also realized as a voiced affricate before [i]; it is written as either <j> or <ǰ>.
- [k> kʰ> g>] are slightly backed variants of velar stops which occur before back vowels.
- [q qʰ] are post-velar stops.
- /n/ is realized as a palatal [ñ] before front vowels and as a dental [n̪] elsewhere.
- [ṅ] is a velar nasal.
- Sreedhar treats aspiration as a sequence of the unaspirated phoneme followed by /h/.
- Aspirated nasals occur in very few words.
- [w] occurs only before back vowels; [y] occurs only before front and central vowels.

VOWELS

Phonetic chart

i i̯		ɨ		ɯ , u u̯
e		ə		o
E				ɷ
				ʌ
		a â>		

Phonemic chart

i	ɨ	u
e		o
	a	

- [ɨ] occurs only in the first syllable of words, or in the second syllable when preceded by a vowel-initial syllable; elsewhere /ɨ/ is realized as [ɯ].
- [E ɔ] are "mid-way between half-close and half-open". [E] is an allophone of /e/ which occurs before [i̯]; [ɔ] is an allophone of /o/ which occurs after fricatives and before [i̯].
- The phoneme /a/ has the following conditioned variants: [ə] occurs before [i̯]; [â>] ("slightly closer and retracted form of [a]") occurs before velar nasal /ṅ/; [ʌ] occurs in word-initial position but not before [u̯]; and [a] occurs elsewhere.
- [i̯ u̯] are "non-syllabic vowels" which occur with other vowels to form diphthongs. [i̯] occurs after [E ə ɔ]; [u̯] occurs only after /a/.

TONES

ma	level
má	high
mà	low

- When a word begins with a vowel, the initial vowel carries a level tone (p. 76).

SHIXING

Data Source: Sun et al. 1991 [ZMYYC] #20
Sun Hongkai 1991 [SHK-ShixQ]

[ZMYYC]: Collected in Shuiluo River and environs, District One, Muli County, Liangshan Prefecture, Sichuan.
[SHK-ShixQ]: STEDT Questionnaire.

Inventory: Sun et al. 1991 [ZMYYC] #20 (page 240-244)
Sun Hongkai 1991 [SHK-ShixQ]

INITIALS

p	t	ts	tʂ	tʃ	tɕ	k	q	
ph	th	tsh	tʂh	tʃh	tɕh	kh	qh	
b	d	dz	dʐ	dʒ	dʑ	g		
nb	nd		ndʐ		ndʑ	ng	nɢ	
ɸ		s	ʂ	ʃ	ɕ	x	χ	h
β		z	ʐ	ʒ	ʑ	ɣ	ʁ	ɦ
m	n				ɳ	ŋ		
m̥	n̥							
w	l	r			j			
	ɬ							

- /ŋ χ ʃ/ are found in very few words.
- Prenasalized <n-> represents a homorganic nasal.

RHYMES

ɿ					
i , y	ɯ	u	ĩ , ỹ	ɯ̃	ũ
e	ɐ	o	ẽ	ɐ̃	õ
ɛ	ɑ	ɔ	ɛ̃	ɑ̃	ɔ̃
yi	iɯ	iu			
ie, ye		io			
iɛ, yɛ	iɑ	iɔ	iɛ̃, yɛ̃	iɑ̃	
ui	uɯ			uɯ̃	
ue	uɐ				
uɛ	uɑ		uɛ̃	uɑ̃	uɔ̃

ɯi	
ei	
ɛi	uɛi

- There is a velar nasal coda [-ŋ], which occurs mainly after back vowels. It may often be pronounced as nasalization of vowels, and thus is not set apart as a separate phoneme here.
- Some words, mostly with high level or high falling tones, have short vowel duration followed by a glottal stop. In a few other words, vowels are constricted as in some Yi languages. These features are not included in the inventories above because of the rare occurrence and/or the lack of contrastive pairs.
- /ũ/ and /õ/ may interchange in many cases. Since this is not true of all words containing them, however, they are considered separate phonemes.
- /ɯ/ is actually lower, close to [ɤ] or [ə].
- /y/ after bilabials is realized as [ʉ].

TONES

mɑ^{55} high level
mɑ^{33} mid level
mɑ^{35} high rising
mɑ^{53} high falling

- In syllables with voiced obstruent initials, the contour tones are relatively lower: high falling /^{53}/ becomes [^{341}] and high rising /^{35}/ becomes [^{14}].
- The mid level tone occurs more frequently in polysyllabic words.

SULONG[1]

Data Source: Sun et al. 1991 [ZMYYC] #52
Sun Hongkai 1993 [SHK-Sulung]

[ZMYYC]: Collected in Lagong District, Longzi [Lhünzê] County, Tibet.
[SHK-Sulung]: STEDT Questionnaire.

Inventory: Sun et al. 1991 [ZMYYC] #52 (pages 356-361)
Sun Hongkai 1993 [SHK-Sulung]

CONSONANTS

Simple Initials

p		t	ts	tɕ	c	k	
					ch		
b		d	dz	dʑ	ɟ	g	
f	θ		s	ɕ	ç		h
v			z	ʑ		ɣ	ɦ
m		n			ɳ	ŋ	
w		l	r	ɹ	j		

Initial Clusters

pɹ bɹ fɹ gɹ hɹ

- [ç] and [ɕ] are sometimes interchangeable.
- /r/ is realized as a flap [ɾ].
- /g/ is pronounced with considerable prevoicing, approximating [əg].

RHYMES

i , y		ɯ , u			
e		o	eᴵ		oᴵ
ɛ	ə	ɔ	ɛᴵ	əᴵ	ɔᴵ
æ	a		æᴵ	aᴵ	

[1]Called *Luoba (Sulong)* in [ZMYYC]; *Sulung* in [SHK-Sulung].

ui ei eˈi oi əi əˈi	iu ie io iɛ iə ia
ɯe , ue uɛ ua	ye yo yɛ
in ien en eˈn ɛn ən əˈn an	it ut iet et ot ɛt ət əˈt at aˈt uat
iɳ , yɳ uɳ eɳ əɳ	iʈ , yʈ uʈ eʈ əʈ aʈ
iŋ uŋ oŋ oˈŋ ɛˈŋ əŋ əˈŋ ɔŋ aŋ	ik ɯk , uk iek ok ək əˈk ɯək ɔk iak ak uak
ioŋ uoŋ iəŋ , yəŋ ɯəŋ iaŋ uaŋ	ih ɯh eh oh ər ar

- /-m/ and /-p/ occur as final consonants in some Bengni loanwords.
- Final /-r/ is realized as [ɹ].
- Final /-h/ is in the process of disappearing. It is often difficult to detect, and in connected speech disappears completely.
- <vˈ> represents a retroflexed vowel; the tongue is curled but stationary during articulation. The original notation in [ZMYYC] is <vʳ>; it has been modified in the STEDT database.

TONES

ma^{33}	mid level [high level]	[^{33} ~ ^{55}]
ma^{53}	high falling [mid falling]	[^{53} ~ ^{42}]
ma^{11}	low level	[^{11}]

- Since the mid level and high level tones do not contrast, they can be considered a single toneme, which is always transcribed <^{33}>. Similarly, since the high falling and mid falling tones do not contrast, they can be considered a single toneme, which is always transcribed <^{53}>.
- Syllables in the high falling tone, and syllables with diphthong rhymes in the low falling tone, end in a glottal stop [ʔ]. All syllables ending in /h/ are in the low falling tone.
- Prefixed syllables are pronounced with a reduced tone, but are here transcribed in the mid level tone.

SUNWARI[1]

Sabra

Data Source: Hale 1973 [AH-CSDPN]

Hale's wordlist is from Gyen Singh Sunwar, Dora Bieri, Marlene Schulze . The data is from Sabra in the Ramechhap District.

Inventory: Hale 1973 [AH-CSDPN] (pages 26-27)

The phonological analysis follows that of [BS1971b], [BS1971c].

CONSONANTS

p	t	T	c	k	(ʔ)
ph	th	Th		kh	
b	d	D	j	g	
	s		sy		h
m	n			ng	
w	l	r	y		

- /ʔ/ is not shown in Hale's phonemic inventory; however, he notes that words beginning with vowels are considered to begin with phonemic glottal stop.

VOWELS

i i: i̤:		u u: ṳ:
e e: e̤:		o o: o̤:
	ā ā: ā̤:	

- Length is contrastive for all Sunwari vowels.
- Nasalization occurs only on long vowels in Sunwari. Nasalization has been interpreted as a variant of syllable-final /-n/, an interpretation which is supported by the pitch contour system of Sunwari. /-n/ is also manifested as nasalization on central or back vowels followed by /-y/.
- Laryngealization occurs only on long vowels in Sunwari. It is stronger in words with low tone than in words with high tone, and it has been interpreted as a variant of syllable-final /-k/. The Sunwari analysis of laryngealization is supported by data from a related dialect—Surel of Suri—and by pitch contour, as laryngealized vowels in Sunwari have a falling pitch contour.
- Hale notes that in Sunwari word-final vowels devoice in rapid speech.

---

[1]Called *Sunwar* in [AH-CSDPN].

PITCH

- Sunwari words are characterized by pitch, where high pitch contrasts with low pitch. The stem determines pitch, and affixes are neutral for pitch. Open syllables are characterized by level pitch while closed syllables have a falling one. On the other hand, pitch contour is not contrastive.

TAGIN[1]

Data Source: Das Gupta 1983 [KDG-Tag]
Collected in Taliha in the Sippy Valley, Arunachal Pradesh.

Inventory: Das Gupta 1983 [KDG-Tag]

Note: Transcription normalized in the STEDT database.

CONSONANTS

Initials

p	t		c	k	
b	d		ɟ	g	
	s				h
m	n		ny	ŋ	
	l	r	y		

Finals

-p	-t	-k
-m	-n	-ŋ
	-r	

- /ɟ ŋ/ are transcribed <j ng> in [KDG-Tag].

VOWELS

i	ɯ	u
e	ɤ	o
	a	

- /ɤ ɯ/ are transcribed <é í> in [KDG-Tag].
- Vowel length is apparently significant, but is not marked.

TONES

- Tagin seems to be a tone language ([KDG-Tag] lists minimal pairs), but tone is not marked.

[1] *Tagin* must not be confused with *Nishi*, which is unfortunately also known as *Tagin* or *Tagen.* To quote Jackson Sun p. 485, "this tribal group [Tagin] must be carefully distinguished from the 'Tagen' Daflas of Bor 1938, who are none other than Nishis of Subansiri".

TAMANG

Risiangku

Data Source: Mazaudon 1994 [MM-Thesis]
Collected by the author.

Inventory: Mazaudon 1994 [MM-Thesis] (pages 5-10 of Volume 2)

CONSONANTS

Simple Initials

p	t	ts	ʈ	k	
pʰ	tʰ	tsʰ	ʈʰ	kʰ	
	s				h
m	n			ŋ	
w	l	r	j		

Initial Clusters

tsw	tsʰw	sw	ʈw	ʈʰw	kw	kʰw	(hw)	(hrw)
pl	pʰl	ml	kl	kʰl	hl			
pr	pʰr	mr	kr	kʰr	hr			
pj	pʰj	mj	tsj	tsʰj	sj	kj	kʰj	ŋj

- The consonants /h hr/ were each found to occur once before /-w-/ in native words.

Finals

-p	-t		-k
-m	-n		-ŋ
	(-s)		
	-l	-r	
	-i	-u	

VOWELS

Monophthongs

i		u
e		o
	a	

Diphthongs

On-glides	*Off-glides*
iu ju:	ui
io jo:	oi
ia ja: ua wa: iua:	ai au

Triphthongs

iui
ioi
iai iau uai

- Length and nasalization are contrastive for all vowels. Nasalization is marked by <˜> over the vowel.
- The on-glide /i-/ may be transcribed <j> if interpreted as part of an initial cluster; similarly, on-glide /u-/ may be transcribed <w>, and /oi/ may be transcribed <we>.
- /iua:/ is realized as [ɥa:]; /iui/ is realized as [ɥi]. It is not clear why Mazaudon considers the first to be a diphthong and the second a triphthong.

TONES

^{1}ma ^{2}ma ^{3}ma ^{4}ma

- There are four tones, two high and two low. The low tones (3 and 4) are characterized by increased breathiness and the high tones (1 and 2) by decreased breathiness.

❖ ❖ ❖ ❖ ❖

TAMANG

Sahugaon

Data Source: Mazaudon 1994 [MM-Thesis]
Collected by the author in the village of Sahu.

Inventory: Mazaudon 1994 [MM-Thesis] (pages 11-12 of Volume 2)

CONSONANTS

Initials

p	t	ts	ʈ		k
p^h	t^h	ts^h	$ʈ^h$		k^h
		s			
m	n				ŋ
w	l	r		j	
w^h		r^h			

Finals

-p	-t	-k
-m	-n	-ŋ
	(-s)	

- /n ŋ/ are neutralized before /i/.

VOWELS

Monophthongs

i		u
e		o
	a	

Diphthongs

		ui
(ea)		oi
	ai ua	

- Vowel length is contrastive for all vowels. It is marked by <ː> following the vowel.
- Nasalization, marked by <˜> over the vowel, is distinctive only for /e/ and /a/. However, /ẽ ã/ are both quite rare.

TONES

^{1}ma ^{2}ma ^{3}ma ^{4}ma

- There are four tones, two high (1 and 2) and two low (3 and 4). As with the Risiaingku dialect, the low tones of Sahugaon are characterized by “redundant voicing” in the form of breathiness.

- The contrast in aspiration is neutralized in the low tones.

❖ ❖ ❖ ❖ ❖

TAMANG

Sahugaon

Data Source: Hale 1973 [AH-CSDPN]

Hale's wordlist is from Karna Bahadur Tamang, Doreen Taylor, and Fay Everitt . The data is from Sahugaon, approximately five miles north-northwest of Trisuli Bazar in Nuwakot District.

Inventory: Hale 1973 [AH-CSDPN] (pages 15-16)

The phonological analysis follows that of [TAY1969], [HAR1970c], [HTP1970],

CONSONANTS

p	t	T	c	k
ph	th	Th	ch	k
m	n			ng
	s			
w	l	r	y	
wh		rh		

- Capital letters represent backed or retroflexed consonants.
- In word-initial position, stops show a phonetic distinction between voiced and voiceless, and the voicing of a word-initial consonant is predictable depending on the tone of the word. If a word is tense, initial stops are voiceless. A lax word will begin with a voiced stop. In other positions there is considerable fluctuation. In addition, there is a short list of loan words for which the general rule does not hold.

VOWELS

i	u
e	o
ā	

- Vowel nasalization is contrastive for the vowels /e/ and /ā/ only, and even then only in a handful of words. It is marked by <◌̨> under the vowel.
- Vowel length is contrastive for all Tamang vowels. It is marked by <:> following the vowel.

TONES

'mā	tense, “relatively high,” falling contour
mā	tense, “relatively high,” level contour
'māh	lax, “relatively low,” falling contour
māh	lax, “relatively low,” level contour

- Tenseness and laxness are contrastive for the morpheme. However, there are very few breathy suffixes. Laxness is represented by an <-h> following the vowel, and aspirated stops can occur only in morpheme-initial position. Lax vowels do not occur after aspirated stops or the following voiceless segments: /rh wh h/. The tense-lax vowel contrast is manifested only after unaspirated stops, after /s/, after voiced consonants, and in syllable-initial position.
- Pitch contour is also contrastive for the morpheme, which may either be falling or level. A few affixes have their own contour, but for the most part, most affixes are neutral. A falling contour is marked by a single quote at the beginning of the morpheme (e.g. <'e:>), whereas a level contour is left unmarked. The author notes that the Tamang tone system may be viewed as the result of the combination of breathiness and pitch contours, and that subsequently four tones may be distinguished on this basis.

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TAMANG

Taglung

Data Source: Mazaudon 1994 [MM-Thesis]

Collected by the author in the village of Tamang, which is located on the northern edge of the Kathmandu Valley.

Inventory: Mazaudon 1994 [MM-Thesis] (pages 13-15 of Volume 2)

CONSONANTS

Simple Initials

p	t	ʈ	ts	k	
p^h	t^h	ts^h	$ʈ^h$	k^h	
	s				h
m	n			ŋ	
w	l	r	j		
^hw					

Initial Clusters

(ʈw)	hw									
pl	(p^{h}l)	ml	kl	k^{h}l	hl					
pr	p^{h}r	mr	hr							
pj	p^{h}j	mj	tsj	ts^{h}j	sj	kj	k^{h}j	ŋj	hj	

- There is only one example of a <ʈw> cluster in the word for ‘pig’. /p^{h}l/ is also rare.

VOWELS

Monophthongs

i										u
e										o
					a					

Diphthongs

									ju	ui
									jo	oi
				ja	ai	(wa)				

Triphthongs

										joi
					wai					

- Vowel length is contrastive for all vowels. It is marked by <ː> following the vowel.

TONES

- Taglung has three high tones and one low tone, which is murmured.

TANGKHUL[1]

Ukhrul

Data Source: Marrison 1967 [GEM-CNL]

Spoken in northwest Manipur. Marrison takes his lexical data from [WP-TNgd].

Inventory: Pettigrew 1918 [WP-TNgd] (pages 1-4)
Marrison 1967 [GEM-CNL] (page 368)

CONSONANTS

Initials

p	t	z	ch	k	
ph	th			kh	
b	d		j	g	
f	s		sh		h
v					
m	n			ŋ	
w	l	r			

- /z ch j/ represent [tʃ ts dʒ].
- [l] and [r] are often interchanged. Pettigrew remarks that the /r/ often assimilates to an /l/ when both appear in the same word.

Finals

-p	-t	-k
-m	-n	
	-r	

- This chart is from [GEM-CNL].

[1]Called *Tankhur* in [Bhat-TNV].

VOWELS

Monophthongs

ī		ū
i		u
ē	a̲	ō
e		a , o
(à)		ā

- According to Pettigrew's description, the vowels have the following approximate values:

Pettigrew:	ī	i	ē	e	à	a̲	ū	u	ō	o	a	ā
IPA:	i	ɪ	e	ɛ	æ	ə	u	ʊ	o	ɔ	ʌ	ɑ

- Marrison only lists the monophthongs /i a a̲ o u/.

Diphthongs

ui

ei eo oe

ai ao

- Marrison only lists the diphthongs /ei ai ao ui/.

TONES

- "[T]here are two noticeable changes in intonation in Tangkhul Naga, a high and low tone to a great number of words ...." (p. 4). Tones are left unmarked in Pettigrew's text, "as these differences can only be properly learned by ear" (p. 4).

TANGKHUL

Ukhrul

Data Source: Arokianathan 1980 [ARO1980]

From the Ukhrul village in Manipur, India. This dialect is the most widely used variety and is considered the most prestigious.

Inventory: Arokianathan 1980 [ARO1980] (phonemic charts: pages 1-2; tones: pages 21-23; vowel chart: page 24; consonant chart: page 34)

The transcription of the lexical data is phonetic, not phonemic.

CONSONANTS

Phonetic chart

p	t		c	k	
p^h	t^h			k^h	
b	d		j	g	
m	n			ŋ	
f	s		š	x	h
v	z		ž		
w	l	r	y		
		r̲			

Phonemic chart

p	t		c	k	
p^h	t^h			k^h	
m	n			ŋ	
f	s		š		h
	z				
w	l	r	y		

- /p t c k š/ have allophones [b d j g ž] which occur in medial position before a vowel and after a vowel, semivowel or nasal.
- /h/ is realized as [x] when followed by a vowel and preceded by a semi-vowel or nasal; it is realized as [h] elsewhere.
- /w/ is realized as [v] initially and after consonants, and as [w] after vowels.
- /r/ is realized as an alveolar flap [r̲] in word final syllables before [u], and as an alveolar trill [r] elsewhere.
- /y/ is realized as [y] initially and when the second consonant of a cluster, and as [i̯] after vowels.

VOWELS

Phonetic chart

i	ɨ	ɯ , u
I		U
e		o
E	ə	
	ʌ	ɔ
	a	

Phonemic chart

i		u
e	ə	o
	a	

- [I U] are lower high vowels. They are shorter in duration than [i u].
- /i/ is realized as [I] in syllables with level tone and as [i] in syllables with high and low tones.
- /u/ is realized as [ɨ] after nasals; as [ɯ] in word final position when preceded by non-nasal consonants; as [U] initially or after non-nasal consonants in closed syllables with level tone; as [u] after non-nasal consonants in closed syllables with rising and falling tones; and before /y/ regardless of whether the preceding segment is nasal or not.
- [E] is a mean mid vowel. Its duration is shorter than the higher mid vowel [e].
- /e/ is realized as [E] in syllables with level tone (unless followed by /y/) and as [e] in syllables with high or low tones and before /y/.
- /o/ is realized as [ɔ] in syllables with level tone (unless followed by /y/) and as [o] in syllables with high or low tones and before /y/.
- /a/ is realized as [ʌ] in syllables with level tone when in initial position or when followed by consonants other than nasals or /y/; and as [a] in syllables with high or low tones, or in syllables with level tone when it is the word final syllable or followed by a nasal or by /y/.

TONES

ma	level (mid)
má	rising (high)
mà	falling (low)

TANGSA

Moshang

Data Source: Marrison 1967 [GEM-CNL]

Spoken in the central part of the Tirap Division of N.E.F.A. There are also some Tangsa speakers on the Burmese side of the Indian-Burmese border. Marrison takes his lexical data from [WAL1948].

Inventory: Marrison 1967 [GEM-CNL] (page 370)

This transcription also applies to Marrison's data on the Yogli dialect of Tangsa.

SYLLABLE CANON

(C)V(V/C)

CONSONANTS

Initials

p	t		ch	k	
ph	th			kh	
b	d		j	g	
		s	sh		h
m	n		ny	ng	
v	l	r	y		

Finals

-p	-t		-k
-m	-n		-ŋ
	-l	-r	

- Marrison indicates that <ch sh ny> correspond to /c ʃ ñ/ respectively.

VOWELS

Monophthongs			*Diphthongs*	
i		u		
e	ü	o		oi
	a		ai	au

- Marrison indicates that <ü> corresponds to /ə/.

❖

THADO[1]

Data Source: Thirumalai 1972 [THI1972]

Spoken in the Manipur Hills.

Inventory: Thirumalai 1972 [THI1972] (phonetic and orthographic charts: pages 7-8; phonemic charts: pages 72-76)

The transcription of the lexical data is phonetic, not phonemic.

CONSONANTS

Initials

p	t	c	k	ʔ
ph	th			
b	d	j	g	
	s		x	h
v	z			
m	n		ŋ	
	l	y		
	lʰ			

Finals

-p	-t		-ʔ
-m	-n	-ŋ	
	-l		

- The consonant charts above are *phonetic*, not phonemic.
- [c j] are palatal stops.
- [lʰ] is a voiceless alveolar lateral fricative.
- [k ʔ] are both allophones of /k/. [ʔ] occurs syllable finally and [k] occurs elsewhere.
- [z j y] are allophones of /j/. They are in free variation intervocalically. Word-initially [j] and [z] vary, but [z] is preferred.

[1]Called *Thaadou* in [THI1972]; *Thadou* in [KRI1980].

VOWELS

i		u
e	ʌ	o
ɛ	a	ɔ

- There are typographical errors in a number of forms in [THI1972], where <aa> is written for [a].

TONES

ma	level
má	rising
mà	falling

❖ ❖ ❖ ❖ ❖

THADO

Data Source: Krishan 1980 [KRI1980]

Inventory: Krishan 1980 [KRI1980]

CONSONANTS

Initials

p	t	č	k	ʔ
ph	th			
b	d		g	
	s		x	h
v	z			
m	n		ŋ	
hm	hn		hŋ	
	l			
	lh			

- /hm hn hŋ/ are “preaspirated nasals”.

Finals

-p	-t		-ʔ
-m	-n	-ŋ	
-hm	-hn	-hŋ	
	-l		

- Editor's note: The finals <-hm -hn -hŋ> undoubtedly represent preglottalized nasals [-ʔm -ʔn -ʔŋ]. The use of <-h> for [-ʔ] is widespread in the orthographies of Kuki-Chin languages.

VOWELS

i		u
e	ʌ	o
	a	

TONES

ma	mid level
má	sharp rising
mà	sharp falling
mă	slow rising
mâ	slow falling

THAKALI

Marpha

Data Source: Mazaudon 1994 [MM-Thesis]
Collected by the author during a month and a half stay in Marpha in 1972.

Inventory: Mazaudon 1994 [MM-Thesis] (pages 19-24 of Volume 2)

CONSONANTS

Simple Initials

p	t	ts	ʈ	tɕ	k	
pʰ	tʰ	tsʰ	ʈʰ	tɕʰ	kʰ	
	s			ɕ		h
m	n			ɲ	ŋ	
w	l		r	j		
	hɬ		hʈ			

Initial Clusters

pw	pʰw	mw	tw	tʰw	sw	(lw)	tsʰw	kw	ŋw
pl	pʰl	ml							
pr	pʰr	mr							
pj	pʰj	mj	tsj	tsʰj	lj	kj	kʰj		

Finals

-p				-k
	(-s)			
-m	-n			-ŋ
	-l	-r		

- /hɬ hʈ/ are voiceless liquid fricatives which are pronounced with a very high degree of frication.
- /hʈ/ is distinguished from /ɕ/ by the absence of palatalization. It resembles [ʃ].
- /hɬ/ is strongly palatalized.
- In addition to the clusters listed above, there is one example of a /tj/ initial cluster and two of an initial /nj/ cluster.
- The cluster [ŋj], because it is so frequent, is better interpreted as the palatal nasal /ɲ/.

- Clusters with glide /-w-/ are followed by the unstable vowel nucleus /ui/ or /ue/. It is postulated that /lw/ occurs only in Tibetan loanwords.
- Final consonants are rare, and there are only a few examples of each of the above consonants in final position.
- /-s/ occurs finally in only one Marphali word.

VOWELS

Monophthongs

i		u
e	ʌ	o
	a	

Diphthongs

ji		ju ui
je eʌ ʌe		jo oi
	jʌ ʌi	
	ja	

- Vowel length does play a role, but it is not phonemic and is sometimes a variant of a diphthong.
- On-glide /u-/ may be transcribed <w> if interpreted as part of an initial cluster; similarly, /oi/ may be transcribed <we>.
- /ʌi/ is [ɨ] or sometimes [eː].
- /ʌe/ is [ʌɛ].
- /eʌ/ is [eᵊ].
- /ui/ is pronounced [ʯi] after the dentals.

TONES

- There are three high tones and one low tone. The low tone is articulated with murmured voice.

❖ ❖ ❖ ❖ ❖

THAKALI

Syang

Data Source: Mazaudon 1994 [MM-Thesis]
Collected by the author in two households of Syang.

Inventory: Mazaudon 1994 [MM-Thesis] (25-29 of Volume 2)

CONSONANTS

Simple Initials

p	t	ts	ʈ	tɕ	k	
pʰ	tʰ	tsʰ	ʈʰ	tɕʰ	kʰ	
(b)	(d)	(dz)	(ɖ)		(g)	
	s			ɕ		h
m	n			ɲ		(ŋ)
w	l		r	j		
	hɬ		hʈ			

Initial Clusters

pw	pʰw	bw	mw						
pl	bl	ml							
pr	pʰr	br	mr						
pj	pʰj	bj	mj	tj	tʰj	(dj)	(nj)	lj	ɬj
tsj	tsʰj	dzj	kj	kʰj	gj				
(plj)									

Finals

(-p)				
	(-s)			
-m	-n			-ŋ
	-l	-r		

- /hɬ hʈ/ are voiceless liquids.
- /ʈʰ/ appears in only one word.
- Clusters with /-w-/ always precede /i/.

- The cluster /pʰr/ occurs in only a single word.
- [nj] varies with [ɲ]; aside from this, clusters with /-j-/ occur rarely.
- The consonants that cluster with /-j-/ are also those that occur before diphthongs beginning with /i/.
- There are several rules of co-occurrence of vowels and final consonants. For more information, see page 28.

VOWELS

Monophthongs

i		u
e	ʌ	o
	a	

Diphthongs

		ui
ʌe	ʌi	oi
	ai	

- /ui/ is sometimes transcribed <wi>.
- The importance of vowel length has not been well established, and it appears that the phenomenon is disappearing.
- Nasality is often realized in the form of a weak velar nasal following the vowel. Nasalized vowels very rarely occur unless they are adjacent to a nasal consonant.

TONES

- There are two high tones and two murmured low tones.

❖ ❖ ❖ ❖ ❖

THAKALI

Tukche

Data Source: Hale 1973 [AH-CSDPN]
Hari 1971 [SIL-Thak]

[AH-CSDPN]: Hale's wordlist is from Narendra Garchan, Nila Gauchan, and Maria Hari. The data is from Tukche in Dhaulagiri Zone.

[SIL-Thak]: Hari's research on the Tukche dialect of Thakali was completed over a total of 15 weeks in Pokhara and approximately four months of further study in Kathmandu. There were four principal informants, all brought up in or near Tukche.

Inventory: Hale 1973 [AH-CSDPN] (pages 17-18)
Hari 1971 [SIL-Thak]

The phonological analysis follows that of [HAR1969], and [AHR1971c]

Secondary Sources: [JAM-Ety] (from [AH-CSDPN])

Note: Transcription of [SIL-Thak] normalized in STEDT database.

SYLLABLE CANON

(C)(C)V(C)

CONSONANTS

Simple Initials

[AH-CSDPN]

p	t	T	c	k
ph	th	Th	ch	kh
m	n			ng
	s			
w	l	r	y	
	L	R		

[SIL-Thak]

p	t	ʈ	c	k	
p^h	t^h	$ʈ^h$	c^h	k^h	
	s				h
m	n			ŋ	
w	l	r	y		
	l^h	r^h			

- /L R/ (<l^h r^h> in [SIL-Thak]) are voiceless liquids.
- /T Th/ (<ʈ $ʈ^h$> in [SIL-Thak]) are backed or retroflexed voiceless stops.

Initial Clusters

kw								
pl	phl	ml						
pr	phr	mr	tr					
py	phy	my	sy	cy	chy	ky	khy	ngy

- There are only two examples of words containing a three-consonant initial cluster; thus this type of cluster should be treated as exceptional.

VOWELS

[AH-CSDPN]		*[SIL-Thak]*	
i	u	i	u
e	o	e	o
ā	a	a	ɔ

- Vowel nasalization occurs automatically for vowels following nasal consonants. Nasalization is noncontrastive.

TONES

[AH-CSDPN]	[SIL-Thak]	
'ma	'ma	tense, contour pitch
ma	ma	tense, level pitch
'mah	ma'^{h}	lax, contour pitch
mah	ma^{h}	lax, level pitch

- Tone is a combination of voice quality and pitch contour. Breathiness is indicated by an <h> after the vowel in [AH-CSDPN] and by an <^{h}> in [SIL-Thak]. It is contrastive only on the first syllable of a morpheme. All noninitial syllables are clear. Breathy vowels do not occur after aspirated stops, affricates or the voiceless initials /R L h/. Breathy syllables are lax.
- Contour pitch is indicated by an apostrophe <' >. High level pitch is unmarked.

❖ ❖ ❖ ❖ ❖

THAKALI

Tukche

Data Source: Mazaudon 1994 [MM-Thesis]
The data follows the analyses of [HAR1969] and [AH-CSDPN].

Inventory: Mazaudon 1994 [MM-Thesis] (pages 16-18 of Volume 2)

SYLLABLE CANON

(C)(G)V(F)

- In this template, G can be /r l j w/, the occurrence of which is governed by the restrictions listed below.
- Only two words have an alternate syllable structure: CGGV. One of the words has a variant which abides by the "regular" syllable canon.

CONSONANTS

Simple Initials

p	t	ts	ʈ		k	
pʰ	tʰ	tsʰ	ʈʰ		kʰ	
	s					h
m	n				ŋ	
w	l		r	j		
	hl		hr			

Initial Clusters

kw									
pl	pʰl	ml							
pr	pʰr	mr	(tr)						
pj	pʰj	mj	tsj	tsʰj	s	kj	kʰj	ŋ	

Finals

-p			(-ʈ)	
	-s			
-w	-l	-r		-j

- /hl hr/ are voiceless liquids.
- The occurrence of a /tr/ cluster is unusual from a Pre-Proto-Tamang evolutionary viewpoint. It occurs certainly in one word and possibly in a second word from [HAR1969] which has elsewhere been transcribed without the initial /tr/ cluster.
- /kw/ occurs only before the low vowels /a ʌ/.
- [-ʈ] is extremely rare and only occurs in one onomatopoeic word.

VOWELS

i	u
e	o
a	ʌ , ɔ

- The /ʌ ɔ/ opposition is neutralized in favor of [a] in a syllable ending with /-ŋ/.

TONES

- There are four tones, two high tones and two low tones. The low tones are articulated with murmured voice.

THULUNG

Data Source: Allen 1975 [NJA-Thulung]

Collected by the author in Solu Khumba Jilla. Most of the research was conducted in Mukli village, with additional data gathered in Tingla and Lokhim over a total period of 15 months.

Inventory: Allen 1975 [NJA-Thulung] (pages 11-37)

Secondary Sources: [JAM-Ety]

CONSONANTS

Simple Initials

p	t	T	c	k	-
ph	th		ch	kh	
b	d	D	j	g	
bh	dh	(Dh)	jh	gh	
	s				h
m	n			ŋ	
w	l	r	y		

Initial Clusters

pl	phl	bl	kl	khl	gl	ghl	
pr	phr	br	bhr	kr	khr	gr	ghr

Finals

-p	-t	-T		-k
	-s			
-m	-n			-ŋ
-w	-l	-r	-y	

- /T D/ are retroflex [ʈ ɖ]. Intervocalic /D/ is flapped. Syllable-initial /T/ is rare. A single instance of aspirated /Dh/ is recorded.
- /-/ is the glottal stop [ʔ]. It is not transcribed word-initially.
- The velar voiced aspirated stop /gh/ only appears before liquids.
- Aspiration of voiced stops “is subject to free or dialectal variation” (p. 12).
- Syllable-final stops are usually unreleased.

- /-k/ and /-s/ are rare, especially in monosyllables, where they are confined to kinship terms.
- /-s/ may appear post-finally, i.e. following other final consonants.

VOWELS

Monophthongs

i , iu		u
e , eo	ə	o
	a	

Diphthongs

ea	oa

- /iu/ is [y]; /eo/ is [ø].
- All vowels, including diphthongs, can be contrastively long, marked with <¯> over the vowel. Long vowels are, however, "found characteristically in word-initial open syllables. The only long vowels identified in closed syllables were /ē/ and /eō/ and these occured only in a small number of verb forms" (p. 23).
- Both diphthongs are "rising diphthongs, i.e. they have the length and stress on the second element" (p. 23).
- "Vowels following a nasal consonant are automatically nasalized, and one nasalized vowel automatically causes nasalization of contiguous vocoidals" (p. 26).

TONES

- There is a discussion of tone in which Allen asserts that tonal contrast plays a minimal role in Thulung and appears to be dying out with the spread of Nepali. "[T]he whole section is to be regarded as tentative .... (Thus) tone is seldom marked in the orthography" (p. 32).

TIBETAN (WRITTEN)

Data Source: Jäschke 1881 [HAJ-TED]

Inventory: Beyer 1992 [SB-ClassTib] (pages 39-89)
Additional phonological information from James A. Matisoff.

Secondary Sources: [JAM-Ety], [JAM-GSTC], [JAM-TIL], [JAM-TJLB], [JAM-VSTB], [JS-Tib]

SYLLABLE CANON

$(C_1)(C_2)(C_3)(G)V(C_4)(C_5)$

Pre-prefix	Pre-initial	Initial	Glide	Vowel	Final	Post-final
b	b d g m r l s ḥ	any consonant except ḥ	(w) l r y	any vowel	b d g m n ŋ r l s	s

- An example of a word with a maximally full syllable:

  brgyuŋs-pa ‘marrow in backbone’ (Jäschke p. 124)

CONSONANTS

Simple Initials and Initial Clusters

Initial Segment Inventory

p	t	ts	č	k		
ph	th	tsh	čh	kh		
b	d	dz	ǰ	g		
		s	š			h
		z	ž			
m	n		ñ	ŋ	ḥ	
w	l	r	y			

- We represent the letter called “a-chung” as <ḥ>, but it is represented in a number of ways by different authors, such as with an apostrophe <’>, or with a subscript circle <ₒ> (Jäschke).

  The majority of forms within the database have been normalized to <ḥ>.
  The phonetic realization of “a-chung” in preconsonantal position is controversial.

Some consider it to be a nasal [ɴ], others suggest a glottal stop [ʔ]. We consider it to represent a syllabic nasal accompanied by glottal closure [ʔn̩-]. See Matisoff 1975.

- Aspiration is indicated here with the letter <h>. Some sources, such as Jäschke, indicate it with a reverse apostrophe <‘>, as in <p‘>.
- Palatals are indicated in the STEDT database with either a haček or, in the case of the palatal nasal, with a tilde: <č čh ǰ š ž ñ>. Jäschke indicates palatals with a grave accent <c̀ c̀‘ j̀ ś ź ǹ>.

Velar Initials and Initial Clusters

k-	dk-	bk-			rk-	(brk-)	lk-	sk-	(bsk-)
ky-	dky-	bky-			rky-			sky-	
kr-	dkr	bkr-						skr-	
kl-		bkl-							
kh-			mkh-	ṇkh-					
khy-			mkhy-	ṇkhy-					
khr-			mkhr-	ṇkhr-					
g-	dg-	bg-	mg-	ṇg-	rg-	brg-	lg-	sg-	bsg-
gy-	dgy-	bgy-	mgy-	ṇgr-	rgy-	brgy-	(lgy-)	sgy-	
gr-	dgr-	bgr-	mgr-	ṇgr-				sgr-	bsgr-
gl-									
ŋ-	dŋ-		mŋ-		rŋ-	brŋ-	lŋ-	sŋ-	bsŋ-

Palatal Initials and Initial Clusters

č-	gč-	bč-					lč-		
čh-			mčh-	ṇčh-					
ǰ-			mǰ-	ṇǰ-	rǰ-	brǰ-	lǰ-		
ñ-	gñ-		mñ-		rñ-	brñ-		sñ-	bsñ-

Dental Initials and Initial Clusters

t- (tr-)	gt-	bt-			rt-	brt-	lt-	st-	bst-
th-			mth-	ḥth-					
d- dr-	gd-	bd- bdr-	md-	ḥd- ḥdr-	rd-	brd-	ld-	sd-	bsd-
n-	gn-		mn-		rn-	brn-		sn- (snr-)	bsn-

Labial Initials and Initial Clusters

p pr-	dp- dpy- dpr-					(lp-)	sp- spy- spr-	
ph- phy- phr-			ḥph- ḥphy- ḥphr-					
b- by- br- bl-	db- dby- dbr-		ḥb- ḥby- ḥbr-	rb-		lb-	sb- sby- sbr-	
m- my-	dm- dmy-			rm- rmy-			sm- smy- smr-	

Affricate and Fricative Initials and Initial Clusters

ts-	gts-	bts-			rts-	brts-	sts-
tsw-					rtsw-		
tsh-			mtsh-	ṭsh-			
tshw-							
dz-			mdz-	ḍz-	rdz-		
s-	gs-	bs-					
sr-		bsr-					
sl-		bsl-					
z-	gz-	bz-					
zl-		bzl-					
š-	gš-	bš-					
ž-	gž-	bž-					
(žw-)							

Resonant and Laryngeal Initials and Initial Clusters

r-	br-	h-	l-	w-	y-	ʔ-	Ø-
		hy [gy]					
		hr-					
rl-	brl-	hl (“lh”)					
rw-		hw-					

- /r- l- s- ḥ-/ precede initials of all four buccal positions: velar, palatal, dental, labial.
- Velars may be preceded by /d- b-/, and followed by /-y -r -l/.
- Palatal and dentals may be preceded by /g- b-/, and followed by /-y -r/.
- Labials may be preceded only by /d-/, and followed by /-y -r -l/.
- /m- br- bs-/ do not occur before labial initials.
- Aspirates may be preceded only by /m- ḥ-/.
- As pre-initials, /ḥ m/ occur only before the aspirated and the voiced series of obstruents, but not before the plain series.

Simple Finals

-b	-d			-g	
	-s				
-m	-n			-ŋ	-ḥ
(-w)	-l	-r	(-y)		

Final Clusters

-bs	-gs
-ms	-ŋs

VOWELS

i		u
e		o
	a	

❖ ❖ ❖ ❖ ❖

TIBETAN

Amdo: Bla-brang[1]

Data Source: Sun et al. 1991 [ZMYYC] #4
Collected in Labuleng [Bla-brang], Xiahe County, Gannan Prefecture, Gansu.

Inventory: Sun et al. 1991 [ZMYYC] #4 (pages 164-167)

[1]Called *Tibetan (Xiahe)* in [ZMYYC].

CONSONANTS

Simple Initials

p	t	ts	tʂ	tɕ	k	
ph	th	tsh	tʂh	tɕh	kh	
nb	nd	ndz	ndʐ	ndʑ	ng	
		s	ʂ	ɕ	(x)	h
		sh			xh	
					ɣ	
m	n			ɳ	ŋ	
w	l		r	j		
	ɬ					

Initial Clusters

ht	hts	htʂ	htɕ	hk	
hb	hd	hdz	hdʐ	hdʑ	hg
hz	hʑ				
hm	hn	hɳ	hŋ		
hw	hl	hj			

- Voiced obstruents (except /ɣ/) occur only in consonant clusters.
- /r/ is realized as [ʐ].
- /x/ is found only in Chinese loans.

RHYMES

i		u			
e	ə	o	en	ən	on
	a			an	
ep	əp	op	em	əm	om
	ap			am	
	ək	ok			oŋ
	ak			aŋ	

er	ər ar	or	el	əl al	ol

- /o/ and /ə/ before velars are realized as [ʊ] and [ɯ] respectively.
- /a/ is realized as [ɐ] before velars /k ŋ/ and as [æ] before /l n m/.

TIBETAN

Amdo: Zeku

Data Source: Sun et al. 1991 [ZMYYC] #5

Anduo [Amdo] Dialect (Grazing District). Collected in Zeku [Zêkog] County, Guoluo [Golog] Prefecture, Qinghai.

Inventory: Sun et al. 1991 [ZMYYC] #5 (pages 159-164)

CONSONANTS

Simple Initials

p	t	ts	tʂ	cç	tɕ	k	
ph	th	tsh	tʂh	cçh	tɕh	kh	
nph	nth	ntsh	ntʂh	ncçh	ntɕh	nkh	
nb	nd	ndz	ndʐ	nɟj	ndʑ	ng	
		s	ʂ		ɕ		h
		sh				xh	
						ɣ	
m	n				ɳ	ŋ	
w	l		r		j		
	ɬ						

Cluster Initials

pt	pts	ptʂ	pcç	ptɕ	pk			
hw								
ɣm	ɣt	ɣts	ɣd	ɣs	ɣz	ɣn	ɣl	ɣtʂ
ɣdzʐ	ɣcç	ɣtɕ	ɣɕ	ɣʑ	ɣɳ	ɣj		
mth	md	mtsh	mdz	mn	mtʂh	mdzʐ	mcçh	mɟj
mtɕh	mdʑ	mɳ	mkh	mg	mŋ			
rm	rm̥	rt	rd	rn	rn̥	rts	rdz	rcç
rɟj	rtɕ	rdʑ	rɳ	rŋɳ	rk	rg	rŋ	rŋ̊
wt	wts	wd	wdz	ws	wz	wn̥	wl	wtʂ
wdzʐ	wʂ	wr	wcç	wɟj	wdʑ	wɕ	wʑ	wɳ
wk	wg	wŋ						

- Voiced obstruents (except /ɣ/) and voiceless nasals occur only in consonant clusters.
- /r/ is realized as [zʐ] initially and [r] finally.
- Pre-initial <n-> represents a nasal homorganic to the following consonant.
- Pre-initials /ɣ- m- n- r-/ can be realized as either voiceless or voiced depending on the voicing of the following initial.
- /w/ is realized as [v] when a simple initial, and as either [ɸ] or [β] as a pre-initial depending on the voicing of following initials.
- /ɣ/ is more like a uvular, or even close to a glottal sound when occurring as a pre-initial.
- A labial off-glide occurs after certain clusters, especially of the type labial followed by velar, i.e. /pk/, /ptʂ/, /mkh/, /mg/, and /wg/ are realized as [pk^{w}], [ptʂ^{w}], [mkh^{w}], [mg^{w}], and [wg^{w}] respectively.

RHYMES

i		u			
e	ə	o	en	ən	on
	a	ɔ		an	
ep	əp	op	em	əm	om
	ap			am	

		ək ak	ok					oŋ aŋ
er		ər ar	or		el		əl al	ol

❖ ❖ ❖ ❖ ❖

TIBETAN

Balti

Data Source: Rangan 1975 [RAN1975]

This dialect is spoken in the Ladakh district of Jammu and Kashmir.

Inventory: Rangan 1975 [RAN1975] (vowel chart: page 14; consonant chart: page 22; phonemic charts: pages 80-83)

The transcription of the lexical data is phonetic, not phonemic.

CONSONANTS

Phonetic chart

p	t̲	t	c		č	k	q	
pʰ	t̲ʰ	tʰ	cʰ		čʰ	kʰ		
b	d̲	d			ǰ	g		
(f)			s	(ṣ)	š		x̣	h
	ð		z		ž		ɣ̣	
m	n̲	n			ñ	ŋ		
w		l	r	(ṛ)	y			
		ɬ̥						

Phonemic chart

p	t̲	t	c	č	k	q	
pʰ	t̲ʰ	tʰ	cʰ	čʰ	kʰ		
b	d̲	d		ǰ	g		
(f)			s	š		x	h
			z	ž		ɣ	
m		n		ñ	ŋ		
w		l	r	y			

- [t̲ t̲ʰ d̲ n̲] are dentals.
- [c cʰ] are alveolar affricates.
- [č čʰ] are palatal affricates.
- [r] is an alveolar flap.
- /x ɣ/ are realized as post-velar fricatives [x̟ ɣ̟].
- [ð] is an allophone of /d̲/ which only occurs intervocalically (p. 84).
- [n̲] is an allophone of /n/ which only occurs before dental stops (p. 84).
- [ɬ̥] is a voiceless fricativized lateral. It is an allophone of /l/ which occurs syllable-initially when followed by a voiceless consonant, e.g. [ɬ̥t̲wa·] ‘belly’, [meɬ̥čʰe] ‘flame’ (p. 84).
- [ɾ̣] is not listed in the consonant chart, but is mentioned in the description of consonants as a retroflex flap. It is an allophone of /d/ which occurs intervocalically (p. 84).
- [ʂ] is not listed in the consonant chart, but is mentioned in the description of consonants as a voiceless retroflex fricative. It is an allophone of /š/ which occurs before a consonant (p. 84).

VOWELS

Phonetic chart

i i· iː		u u· uː
e e· eː		o o· oː
ɛ		ʌ , ɔ
	a a· aː	

Phonemic chart

i iː	u uː
e eː	o oː
a aː	

- [i· e· u· o· a·] are medium long. They are allophones of the short vowels and only occur in syllable-final position.
- [ʌ] is an allophone of /a/ which only occurs medially. Initially, /a/ is realized as [a] and finally as [a·].
- [ɛ] is an allophone of /e/ which occurs only in initial position in disyllabic words where /a/ or /aː/ follows in the next syllable (p. 84).
- [ɔ] is an allophone of /o/ which occurs only in initial position in disyllabic words where /a/ follows in the next syllable. There is only one example of this: [ɔma·] 'curds' (p. 84).

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TIBETAN

Batang

Data Source: Jumian 1989 [GJ-Batang]

Batang belongs to the southern group of the Kham [1]*dialect of Tibetan. It is spoken in Mangkang County of Changdu, near the Jinsha (Yangzi) River.*

Inventory: Jumian 1989 [GJ-Batang]

SYLLABLE CANON

(C)(C)V(V)(C)

[1]Often called the *Khams* dialect. This should be distinguished from the *Kham* language of Nepal.

CONSONANTS

Initials

p	ts	t	tṣ	tć	k	
p'	ts'	t'	tṣ'	tć'	k'	
b	dz	d	dẓ	dź	g	
nb	ndz	nd	ndẓ	ndź	ng	
	s			ć	x	h
	s'	l̥	ṣ'	ć'	x'	
	z		ẓ	ź	ɣ	
m̥		n̥		ń̥	ŋ̊	
m		n		ń	ŋ	
w		l		j		

Finals

-ʔ

- The distribution of [w] and [ʂ] is rather restricted (p. 338).
- Glottal stop is phonemic only as a final. Zero-initial is realized as [ʔ] (p. 338).
- /ẓ/ is pronounced as a retroflex spirant [ẓ] word-initially, but as "vibrant" [r] word-medially (p. 338).
- <n-> in clusters represents a nasal homorganic to the following consonant (p. 338).

VOWELS

Monophthongs

Oral		*Nasal*	
i , y	u	ĩ , ỹ	ũ
e , ø	o	ẽ , ø̃	õ
ɛ			
a	ɑ		ɑ̃

Diphthongs

Oral		*Nasal*
	iu	
ei , øy		eĩ
ia	ɑu	

- Vowels can be realized as long or as short, but Jumian considers this to be a tonal feature, and does not mark length on the vowel (p. 351).
- /e o/ each have two allophones. With long tones, they remain unchanged, but with short tones, they are realized as higher and more centralized, close to [ɪ] and [ʊ] respectively (p. 347).
- [a] and [ɑ] are in complementary distribution with regard to tone length. However, according to Jumian, native speakers feel that there is a great difference between [a] and [ɑ], and so they may be considered to be different phonemes (p. 347).
- The diphthongs are relatively rare (p. 348).

TONES

mā	high level long	[^{55}]
mà	high falling short	[^{53}]
má	low rising long	[^{13}]
mâ	low rising-falling short	[^{231}]

- There is a fifth “light tone” of unstressed syllables (p. 350).
- There are twenty-one finals which occur only with low tones: the eight nasalized finals (derived from WT /-am -an -aŋ/, etc.), the eight long vowels (derived from WT /-al -ar -as/, etc.), and the five finals with diphthongs (derived from contraction of two syllables).
- There are twelve finals which occur only with short tones: the nine closed finals with glottal stop (derived from Old Tibetan rhymes with /-p -t -k/ [WT -b -d -g]), and the three finals with short vowels (derived from Old Tibetan open finals) (p. 352).
- There are thirteen initials which occur only with high tones: the four voiceless nasals [m̥ n̥ ń̥ ŋ̊], the six aspirated spirants[s' l̥ ʂ' ć' x' h], and the four voiced spirants [z ʐ̊ ź ɣ̊]. The other 37 initials may occur with both high and low tonemes.
- “Initials accompanied with low tones are mostly those nine, now aspirated ones derived from old simple voiced initials, or from old voiced initials only with postbound -r- or -y-, and the four voiced nasal initials remounting to old nasals without prebound consonants. Beside this, there are four initials, the two semivowels and two liquids, which belong to the group of the voiced initials with low tonemes” (pp. 352-354).

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TIBETAN

Batang

Data Source: Dai 1989 [DQ-Batang]

Inventory: Dai 1989 [DQ-Batang]

CONSONANTS

Initials

p	t	ts	tʂ	tɕ	k	
ph	th	tsh	tʂh	tɕh	kh	
b	d	dz	dʐ	dʑ	g	
mb	nd	ndz	ndʐ	ndʑ	ŋg	
		s		ɕ	x	h
		sh	ʂh	ɕh	xh	
		z	ʐ	ʑ	ɣ	
m	n			ȵ	ŋ	
m̥	n̥			ȵ̥	ŋ̊	
w	l			j		
	ɬ					

Finals

-ʔ

VOWELS

Monophthongs

Oral		*Nasal*	
i , y	u	ĩ , ỹ	ũ
e , ø	o	ẽ , ø̃	õ
ɛ			
a	ɑ		ɑ̃

Diphthongs

Oral	*Nasal*
iu	
ei , øy	eĩ
iɑ ɑu	

TONES

ma^{55} ma^{53} ma^{13} ma^{231}

❖ ❖ ❖ ❖ ❖

TIBETAN

Jirel

Data Source: Hale 1973 [AH-CSDPN]

Hale's wordlist is from Olak Bahadur Jirel, Esther Strahm, and Anita Maibaum. The data is from Jiri in Dolkha District.

Inventory: Hale 1973 [AH-CSDPN] (pages 22-24)

The phonological analysis follows that of [SM1971a].

Secondary Sources: [JAM-Ety]

CONSONANTS

p	t	T	c	cy	k	
ph	th	Th	ch	cyh	kh	
b	d	D	j	jy	g	
m	n				ng	
	s			sy		h
w	l	r		y		
	lh	rh				

- In [AH-CSDPN], /s/ is placed in the retroflex column. We assume this to be an error.

VOWELS

i	u
e	o
ā	

- Vowel nasalization, marked by <ˌ> below the vowel, occurs in very few words.
- Vowel length, marked by <ː> following the vowel, is only marginally contrastive.

TONES

māq	Tone 1	(high pitch, tense vowel)
mā	Tone 2	(low pitch, lax vowel)

- Voice quality (tense versus lax) correlates with pitch in Jirel.
- The characteristic pitch (and voice quality) of a word is confined to the initial syllable.
- Voiced stops and affricates occur only in words with low pitch (lax voice quality).

PITCH

'ma	non-falling pitch pattern
ma	falling pitch pattern

- "The tone system may be thought of as the result of the combination and interplay of voice quality and pitch pattern. It is most clearly illustrated in terms of disyllabic, monomorphemic words. A plus sign (+) following a morpheme indicates a modification of the pitch pattern of that morpheme by an elided grammatical marker (see Strahm and Maibaum, 1971a.79)" (p. 23). The following illustration is from [AH-CSDPN] (p. 24).

	Nonfalling	*Falling*
High (Tense)	CV CV 'cyhimpakq 'liver' 'thakpaq 'rope'	CV | CV nyimaq 'ear of corn' phenggakq 'shirt'
Low (Lax)	CV_| CV 'cyhirbuk 'chicks' 'Thangka 'river'	CV_CV |___ nyima 'sun, day' pherka 'stick'

Interplay of voice quality and pitch pattern in Jirel

❖ ❖ ❖ ❖ ❖

TIBETAN

Khams: Dege

Data Source: Sun et al. 1991 [ZMYYC] #3

Kang [Khams] Dialect. Collected in Dege [Dêgê] County, Ganzi [Garzê] Prefecture, Sichuan.

Inventory: Sun et al. 1991 [ZMYYC] #3 (pages 156-159)

CONSONANTS

Initials

p	t	ts	tʂ	tɕ	k	ʔ
ph	th	tsh	tʂh	tɕh	kh	
b	d	dz	dʐ	dʑ	g	
nb	nd	ndz	ndʐ	ndʑ	ng	
		s	ʂ	ɕ	x	h
		sh		ɕh	xh	
		z		ʑ	ɣ	
m	n			ɳ	ŋ	
m̥	n̥			ɳ̊	ŋ̊	
w	l		r	j		
	ɬ					

Finals

-ŋ	-ʔ

- Velar fricatives /x xh ɣ/ are palatalized to [ç çh ʝ] before front vowels.
- /r/ is realized as [ɹ].
- Voiceless nasals often have voiced release; for instance, /m̥/ is often pronounced as [m̥m] etc.
- <n-> in clusters represents a nasal homorganic to the following consonant.
- [-n] (which occurs only after front vowels) and [-ŋ] (only after back vowels) are weak and may be realized as nasalization of the preceding vowel.

VOWELS

i		u
e , ø		o
ɛ	a	ɑ

- In certain words, /i u o/ before a glottal stop are realized as central variants [ɨ ʉ o].

TONES

ma^{55}	high level
ma^{53}	high falling
ma^{13}	low rising
ma^{31}	low falling

❖ ❖ ❖ ❖ ❖

TIBETAN

Ladakhi

Data Source: Koshal 1976 [KOS1976]
"Based mainly on the Central Ladakhi variety (as spoken in Leh), which is considered as the standard variety." Most data was collected from a thirty-year old male speaker, but was compared with speakers of other ages, classes and gender.

Inventory: Koshal 1976 [KOS1976] (phonemic charts: pages 18-19)
The transcription of the lexical data is phonetic, not phonemic.

SYLLABLE CANON

(C)(C)(C)V(C)(C)(C)

CONSONANTS

Simple Initials

Phonetic chart

p	t	ts	ṭ	č	k	k>	
ph	th	tsh	ṭh	čh	kh		
b	d	dz	ḍ	ǰ	g		
		s	ṣ	š			h
ƀ	đ	z		ž	ɠ		
m	n			ñ	ŋ		
w	l	r		y			
	ɬ						
	l̥	r̥					

Phonemic chart

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

- [k>] is a retracted variety of [k]. It is an allophone of /k/ which occurs in final position.
- [ƀ] is a voiced bilabial fricative. It is an allophone of /b/; it can occur (1) in initial clusters after [r], (2) after a vowel followed by a syllable boundary or (3) after [r l n ŋ] followed by a syllable boundary; in all these environments it is in free variation with [b].
- [đ] is a voiced alveolar fricative. It is an allophone of /d/; it can occur (1) in initial clusters after [r l], (2) after a vowel followed by a syllable boundary or (3) after [r l n ŋ] followed by a syllable boundary; in all these environments it is in free variation with [d].
- [ɠ] is a voiced velar fricative. It is an allophone of /g/; it can occur (1) in initial clusters after [r], (2) after a vowel followed by a syllable boundary, or (3) after [r l n ŋ] followed by a syllable boundary.

- [ts tsh dz] are transcribed with a bottom ligature which we do not reproduce here. On page 19 the voiceless alveolar affricate is written as <st>, but this is certainly a typographical error for <ts>.
- /l r/ are realized as [l̥ r̥] in clusters before voiceless consonants.
- [ɬ] is a voiced alveolar murmured lateral. It is produced at a lowered pitch and only occurs syllable-initially. The historical origin of this consonant is Old Tibetan /hl-/.

Cluster Initials

rg̱	rḇ	rḏ	rǰ	rdz	rts	rt
lg̱	lḏ	lǰ	lz	l̥p	l̥t	l̥č
sk	st	sp	sm	sn	sñ	sŋ
zb	zd	zg				
ṣt	ṣk	ṣm	ṣn	ṣñ	ṣŋ	
ky	khy	gy	ñy			
ks	ps	ŋs	ms			

Cluster Finals

ts ns rs ls

VOWELS

Phonetic chart

i		u
e		o
E	ə	ɔ
	ɐ	a

Phonemic chart

i		u
e		o
	ə	

- /e/ is realized as [e] in final position and [E] initially and medially.
- /ə/ varies freely between [ə] and[ɐ] in initial and medial position; it is realized as [a] in final position.
- /o/ is realized as [ɔ] in initial and medial position, and in syllable-final but not word-final position; it is realized as [o] in word-final position.

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TIBETAN

Lhasa: Weizang

Data Source: Sun et al. 1991 [ZMYYC] #2
Weizang Dialect. Collected in Lhasa, Tibet.

Inventory: Sun et al. 1991 [ZMYYC] #2 (pages 149-156)

CONSONANTS

Initials

p	t	ts	tʂ	tɕ	c	k	ʔ
ph	th	tsh	tʂh	tɕh	ch	kh	
		s	ʂ	ɕ	ç		h
m	n			ɳ		ŋ	
w	l		r		j		ɦ
	ɬ						

Finals

-p	-k	-ʔ
-m	-ŋ	
-r		

- /c/ and /ch/ are actually alveo-palatal stops [ʨ] and [ʨh] respectively.
- The initial /r/ is realized as a retroflexed semivowel [ɹ] or a retroflexed voiced fricative [ʐ̢].
- In the second syllable of a disyllabic word, /ɬ/ and /ʂ/ are voiced to [l] and [ʐ̢] (<r>) respectively, and aspirated sounds become unaspirated.
- Zero-inital is realized as [ʔ] in high tone syllables and [ɦ] in low tone syllables.
- Prenasalized stops are attested for some speakers. The dialect on which the present data are based does not have these prenasalized sounds.

VOWELS

Monophthongs			*Diphthongs*
i , y		u	iu
e , ø	ə	o	
ɛ	a	ɔ	au

- All vowels except /ɔ/ can occur nasalized. Nasalization is marked by <~> over the vowel.
- Most vowels can be either long or short. However, /ə ə̃/ are always short while /ɔ/ is always long. In "long tone" syllables and open syllables vowels are long (a diphthong is considered to be equivalent to a long vowel); in other cases vowels are short. Length distinctions are thus not transcribed.
- /o/ before consonants /-ʔ -k -p -r/ is realized as [ɔ].
- The nasal ending /-ŋ/ is often weakly pronounced. Stop endings /-k/ and /-p/ are unreleased.
- /-k/ is mostly found in the first syllable of disyllabic words. It is rarely found in monosyllabic words, and never occurs in the second syllable of disyllabic words.
- Nasal finals /-m -ŋ/ in short tone syllables are realized with a light final glottal stop.
- The glottal stop ending in the first syllable of disyllabic words (excluding verbs) is elided.

TONES

ma^{53} [^{53}]
ma^{13} [^{132}]
ma^{55} [^{44}]
ma^{15} [^{113}]

- In syllables with an oral vowel and a final consonant, tone /^{53}/ is realized as [^{43}] and tone /^{13}/ as [^{12}].
- Tones /^{55}/ and /^{15}/ are relatively longer than tones /^{53}/ and /^{13}/. The former two are called "long tones", and the latter two "short tones".

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TIBETAN

Sherpa: Helambu

Data Source: Bishop 1989 [B-ShrpaHQ]

STEDT Questionnaire. The data is from the Helambu dialect of Sherpa, spoken in Kagate, Nepal.

Inventory: Extracted from Bishop 1989 [B-ShrpaHQ]

CONSONANTS

Initials

p	t	ts	T	ch	k
ph	th			chh	kh
b	d	dz		j	g
		s		sh	h
		z		zh	
m	n				ŋ
w	l	r		y	

- /T/ is [ʈ].
- /ch chh zh j/ are [tʃ tʃh ʒ dʒ].
- Bishop uses a <ʒ> in the handwritten source. Based on analysis of the consonant system of Sherpa, this has been treated as a graphic variant of ordinary print <z> representing [z].

Medials

-y-	-l-	-r-

Finals

-p			-c	-k	
-ph					
				-g	
					-h
-m	-n			-ng	
	-l	-r	-y		

- Based on comparison with [AH-CSDPN], it seems that <-ng> has the same phonetic value as <ŋ->. We find <ŋ> only in initial position, and <ng> only in final position.

- Note the final palatal stop /~c/, rare in Tibeto-Burman.

VOWELS

Monophthongs		*Diphthongs*	
i , ī	u , ū		
e , ē	o , ō	ue	ow
a , aa		ai	oa

- <aa> appears in two words. It is assumed that this represents a long vowel.
- <ii> occurs in only one word (<chiimba> 'bile'). Elsewhere we find <ī>.
- Only /u a/ have nasalized variants (<ũ ã>), generally in the environment of a nasal consonant. Two words, however, appear to be exceptions to this rule: <yãi> 'itch (v.)/be itchy' and <loc kãi> 'cough'.

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TIBETAN

Sherpa

Data Source: Hale 1973 [AH-CSDPN]

Hale's wordlist is from Ang Nyima Lama, Burkhard and Heiderose Schoettelndreyer. The data is from the area around Phaphlu in Solu-Khumbu District.

Inventory: Hale 1973 [AH-CSDPN] (pages 24-26)

The phonological analysis follows that of [GOR1969], [GOR1970], [GS1970], [HS1971], [BS1971a], and [BS1971c].

CONSONANTS

p	t	T	c	č	k
(ph)	(th)	(Th)	(ch)	(čh)	(kh)
b	d	D	j	ǰ	g
m	n			ny	ng
	s			š	
	l	r			
	(lh)	(rh)			
w				y	

- /T Th D/ are retroflex consonants.

- The consonants in parentheses are generally interpreted as consonant clusters. Hale includes them here for comparison with other languages.

MEDIALS

-y- -w-

- Hale calls the medials /-y- -w-/ "co-vowels," since they modify the vowels with which they occur. These are distinct from the consonants /y w/. The co-vowels occur after stops, after the consonants /w y/ (i.e. ww-, yy-, yw-), or before the vowels /e o/, but never word-initially.

VOWELS

i į	u ų
e ę	o ǫ
ā ą̄	a ą

- "The vowels in Sherpa are especially tricky" (p. 25).
- Nasalization is contrastive for all Sherpa vowels and is marked by <˛> under the vowel.
- /ā/ is a low front vowel.
- In general, length is not contrastive for Sherpa vowels. However, /ā/ tends to be longer than /a/ in certain monosyllabic words.

TONES

maq	High pitch (tone 1-tense vowel), falling/level contour.
'maq	High pitch (tone 1-tense vowel), rising contour.
ma	Low pitch (tone 2-lax vowel), falling/level contour.
'ma	Low pitch (tone 2-lax vowel), rising contour.

- Pitch level, which is contrastive in Sherpa morphemes, may be either high or low. Hale refers to high pitch as tone 1 and to low pitch as tone 2. High pitch is indicated by <-q>.
- Words and morphemes of tone 1 are characterized by tense vowels and morphemes of tone 2 are characterized by lax vowels. It is often difficult to hear this distinction (tense/lax) in the low vowels /ā a/.
- In addition, Sherpa words and morphemes have either a rising pitch contour or a falling/level pitch contour. Stress is placed on the second syllable of a disyllabic morpheme if the contour is rising. A rising pitch contour is indicated by an apostrophe < ' > before the word.

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TIBETAN

Spiti

Data Source: S. R. Sharma 1981 [SRS-PSS]
Collected in the Spiti Valley, Lahul-Spiti District, Himachal Pradesh.

Inventory: S. R. Sharma 1981 [SRS-PSS]

CONSONANTS

Simple Initials

p	t	ts	ṭ	c	k	
ph	th	tsh	ṭh	ch	kh	
b	d	dz	ḍ	j	g	
		s	ṣ	š		h
		z		ž		
m	n			ñ	ŋ	
w	l	r	ṛ	y		

- /ṭ ṭh ḍ ṣ ṛ/ are [ʈ ʈh ɖ ʂ ɻ].
- /j š ž ñ/ are [ɟ ʃ ʒ ɲ].

Initial Clusters

py	ty	tsy	ṭy	cy	ky
phy	thy	chy	khy		
by	dy	ḍy	gy		
šy	hy				
my	ny	ñy	ŋy		
ly	ry	ṛy			

Finals

-p	-t			-k
-m	-n			-ŋ
	-l	-r		

- Word-medially, voiced stops may also be found as finals of initial syllables.

VOWELS

Monophthongs			*Diphthongs*	
i		u		ui
e		o	ei ea oe ue	oi uo
ɛ	a	ɔ	oɛ uɛ ai ae ao oa ua	

- Any non-initial vowel can be nasalized (p. 109). Nasalization is marked by <˜> over the vowel.

TONES

mà	falling
ma	level
má	rising

TIDDIM

Data Source: Henderson 1965 [EJAH-TC]

From work in the Northern Chin Hills (1954) for 4 weeks with 2 male informants: Vul Za Thang and Hao Go.

Inventory: Henderson 1965 [EJAH-TC] (pages 9-28)

Secondary Sources: [JAM-Ety], [JAM-GSTC]

SYLLABLE STRUCTURE

- Henderson identifies two types of syllable, stressed and unstressed. Unstressed syllables are "never differentiated by vowel length or pitch, and are never closed by a consonant" (p. 18). They have short vowels only.

CONSONANTS

Initials

p	t	c	k	
ph	th			
b	d		g	
	s		x	h
v	z			
m	n			ŋ
ʔw	l			

Finals

-p	-t	-k	-ʔ
-m	-n	-ŋ	
	-l		
	-lʔ		

- /c/ is an alveolar affricate.
- /b d/ may have very slight glottalization.
- /z/ may be palatalized, especially before front vowels with a strong palatal offglide.
- /-l/ has a slightly retroflex articulation and resonance.

RHYMES

i iː u uː	iʔ uʔ
ɛ ɛː ɔ ɔː	ɛʔ ɔʔ
a aː	aʔ
im iːm um	ip iːp uːp
em om	ep op
ɛːm ɔːm	ɛːp ɔːp
iam am aːm uam	iap ap aːp
in iːn un uːn	it ut uːt
en	et ot
ɛːn ɔːn	ɛːt ɔːt
ian an aːn uan	iat at aːt uat
iŋ iːŋ uŋ uːŋ	iːk uk uːk
eŋ oŋ	ek ok
ɛːŋ ɔːŋ	ɛːk ɔːk
iaŋ aŋ aːŋ uaŋ	iak ak aːk uak
il ul uːl	ilʔ ulʔ
el ol	elʔ olʔ
ɛːl ɔːl	
ial al aːl ual	alʔ
iu iːu ui uːi	iuʔ uiʔ
ei eu oi ou	eiʔ euʔ oiʔ ouʔ
ɛːi ɛːu ɔːi	
ia ai aːi au aːu ua	iaʔ aiʔ auʔ uaʔ
iai iau uai uau	uaiʔ

- The five short open rhymes /i u ɛ ɔ a/ only occur in unstressed syllables. A short unstressed vowel is sometimes marked with <ˇ> over the vowel.
- A central glide is frequently heard after the long front vowels /iː ɛː/ before a following velar consonant.
- /o/ before a final lateral is commonly pronounced without lip-rounding.

TONES

ma[1] high

ma[2] mid

ma[3] low

- Generally, the high tone is rising in all open and long syllables, and level or rising in short syllables closed by a stop. The low tone is falling in open and long syllables, and level or falling in short syllables closed by a stop. The mid tone is always level. (p. 13.) However, other variations are possible, and Henderson also employs nine tone marks to indicate fine phonetic distinctions among the allotones.

NOTES

- There is a standard roman orthography in use for Tiddim. Henderson generally cites forms in both this common orthography and in the phonetic transcription described above. Longer examples and texts are given only in orthography. For more information about the orthography, see [EJAH-TC].

TOSU

Data Source: Nishida 1973 [NT-Tosu]

*There may still be Tosu speakers today in some part of Yunnan, but there is no hard evidence that the language has survived into the twentieth century. Nishida's data source is an 18th century Chinese wordlist (*Tosu Yi-Yu*) which records the language as spoken in Sichuan. The Tosu words are glossed in Chinese, and their pronunciation is rendered both in modified Tibetan script and in transliterated Chinese characters. Nishida has used this data to "reconstruct" the phonology of the language.*

Inventory: Nishida 1973 [NT-Tosu] (pages 40-116)

SYLLABLE CANON

T
CV(C)

CONSONANTS

Initials

p	t	ts	tś		tš	c	k	·
ph	th	tsh	tśh		tšh	ch	kh	
b	d	dz			dž	j	g	
		s	ś		sh			h
				zh			ɣ	ɦ
m	n				ň	ɲ	ŋ	
w	l	r				y		

- /tś tśh ś/ are palato-alveolars (apico-palatals).
- /tš tšh dž sh ň/ are alveolo-palatals (lamino-palatals).
- /c ch j/ are palatal stops.
- /zh/ is retroflex.
- The phonemic status of the voiced glottal fricative [ɦ] is uncertain; it is probably an allophone of /w/ (p. 96).
- The zero-initial /·/ only occurs before the vowel /a/.

Finals

-r	-N	-.

- Final /r/ is preserved in only a few words, all of which have main vowel /a/ (p. 102).

- <-N> is a nasal final with unspecified place of articulation. It may only represent nasalization of the preceding vowel.
- <-. > indicates constriction or glottalization, or a final glottal stop.

VOWELS

Monophthongs

Short		*Long*	
i	u	ii	uu
e , ö	o	ee , öö	oo
a		aa	

- Most occurrences of the long vowels are as allophones of their short counterparts.

Diphthongs

iu ui

ai au

TONES

¯ma	high level
_ma	low level
´ma	rising
`ma	falling

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TRUNG[1]

Dulonghe

Data Source: Sun Hongkai 1982 [JZ-Dulong]
Sun et al. 1991 [ZMYYC] #46

Collected in Longla Village, Town Three (Dulonghe Commune), District Four, Gongshan County, Nujiang Prefecture, Yunnan.

Inventory: Sun Hongkai 1982 [JZ-Dulong] (pages 3-21)
Sun et al. 1991 [ZMYYC] #46 (pages 325-330)

CONSONANTS

Simple Initials

p	t	ts	c	tɕ	k	ʔ
b	d	dz	ɟ	dʑ	g	
(f)		s	ç	ɕ	x	
		(z)				
m	n		ɲ	ɳ	ŋ	
w	l	ɹ	j			

- Voiceless stops and affricates may have aspirated variants; aspirated initials in Chinese loans may also be unaspirated. Thus no phonemic contrast of aspiration is attested here.
- /f z/ are found only in Chinese loans, representing Chinese /f r/ respectively.
- In a few Chinese loans with alveopalatal initials [tɕ dʑ ɕ] there is free variation with the corresponding retroflexes [tʂ dʐ ʂ].
- Velars are actually close to uvulars.
- Zero-initial is realized as [ʔ].
- In certain words, voiced stop and lateral initials are preceded by a glottal element [ʔ]. This glottalized feature is elided in connected speech. In certain other words, voiced stops may also be preceded by homorganic nasals.
- Alveolar initials /t d n l/ before high vowels have retroflex coloring, articulated more or less between retroflex and alveopalatal sounds.
- /ɹ/ is fricated as an initial, close to [ʐ]; it is flapped [ɾ] as second element of a cluster; and represents vowel rhotacization as a final.
- /-ɹ/ appears as <-ʴ> in [ZMYYC].

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[1]Called *Dulong* in [JZ-Dulong], [ZMYYC].

Initial Clusters

(tw)	(lw)	(tsw)	(sw)	kw	gw	xw	ŋw
pl	bl	ml	kl	gl			
pɹ	bɹ	mɹ	kɹ	gɹ	xɹ		
pj	(tj)	bj	mj	(lj)			

- /tj lj tw lw tsw sw/ occur only in Chinese loans.

Finals

-p	-t		-k	-ʔ
-m	-n		-ŋ	
-mʔ	-nʔ		-ŋʔ	
	-l	-ɹ		

VOWELS

Monophthongs

ĭ i , (y)	ŭ ɯ	ŭ u
ĕ e		ŏ ɔ
	ă ɑ	

Diphthongs

(ye)	ɯi	ui
		ɔi
	ɑi	

- All monophthongs (except /y/, which occurs only in Chinese loanwords) show length contrast. Short vowels are marked by <˘> over the vowel. The length distinction is neutralized in open syllables.
- Only short vowels may precede glottalized nasal finals. With all other finals, the vowel may be short or long.
- Diphthongs only occur in open syllables.
- /i/ after bilabials is [Ii]; /e/ after velars is [Ei]; /ɑ/ before /i/ is [a]; /ɔ/ before /ɹ/ is [ɒ]; and /u/ before consonantal endings is between [u] and [ʉ].
- /ɯ/ is [ɻ] after alveopalatal initials; between [ɨ] and [ɯ] after bilabials; and [ə] when occurring in the initial syllable of disyllabic words. It is realized as [ɯɤ] when occurring in an open syllable with the high falling tone; and close to [ɯx] when occurring word-finally.
- /ye/ is found only in Chinese loans.

TONES

mɑ^{55}	high level
mɑ^{53}	high falling
mɑ^{31}	low falling

- In [JZ-Dulong], tones are represented by Chao tone letters, not numbers.
- Syllables with stop endings only occur with high level tone.

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TRUNG

Nujiang

Data Source: Sun Hongkai 1982 [JZ-Dulong]
Collected in Bingzhongluo, District One, Gongshan County, Nujiang Prefecture, Yunnan.

Inventory: Sun Hongkai 1982 [JZ-Dulong] (pages 190-194)

INITIALS

p	t	ts	tʂ	tɕ	k	ʔ
ph	th	tsh	tʂh	tɕh	kh	
b	d	dz	dʐ	dʑ	g	
f		s	ʂ	ɕ	x	
		z	ʐ	ʑ		
m	n			ɳ	ŋ	
w	l		ɹ	j		

TONES

mɑ^{55}	high level
mɑ^{53}	high falling
mɑ^{31}	low falling
mɑ^{35}	high rising

- In [JZ-Dulong], tones are represented by Chao tone letters, not numbers.
- Syllables with stop endings only occur with high level tone.

NOTES

- Rhyme inventories are more or less the same as those of Dulonghe (q.v.), except that Nujiang does not have a lateral final /-l/.

TUJIA

Northern/Longshan

Data Source: Tian et al. 1986 [JZ-Tujia]
Collected in Dianfang Town, Longshan County, Xiangxi Prefecture, Hunan.

Inventory: Tian et al. 1986 [JZ-Tujia] (pages 3-27)

CONSONANTS

Initials

p	t	ts	tɕ	k
ph	th	tsh	tɕh	kh
		s	ɕ	x
		z		ɣ
m	n			ŋ
(w)	l		(j)	

- /n/ is realized as [ȵ] before /i/.
- /n/ can constitute a tone-bearing syllable. In such cases, syllabic /n/ is phonetically preceded by a glottal stop. It is pronounced homorganic to the following sound, and may voice following unaspirated obstruents.
- Under the influence of the local Chinese dialect, /n/ and /l/ are confused in young people's speech.
- /x/ is realized as [xɸ] before /u/, and as [ç] before /ɨ/.
- Zero-initial is realized as [ʔ].

VOWELS

Monophthongs

i ĩ	ɨ	u ũ
e ẽ		o
	a ã	

Diphthongs

On-glides	*Off-glides*
iu ĩũ ɨu	
ɨe ũẽ	ei
ia ĩã ua ũã	ai au

Triphthongs

uei

iau uai

- /i/ is realized as the apical vowel [ɿ] after dental fricatives and affricates.
- When /e/ is preceded by any initial but the zero-initial, it is realized as [ie].
- /u/ is realized as [ʊ]; /a/ as [ʌ].
- /o/ is somewhat closed. Due to the influence of Chinese, young people now pronounce the /io/ rhyme in Chinese loans as [io], while older people pronounce it as [iau].
- /ɨe/ is pronounced as [ɨə] after velar initials.
- /ã/ and /ũ/ are realized as [ɐ̃] and [ʊ̃] respectively when preceded by any initials but the zero-initial.

TONES

ma^{55}	high level
ma^{35}	high rising
ma^{21}	low falling

- The high level tone /^{55}/ may be realized as [^{54}], [^{53}], or [^{51}] in final position.
- The low falling tone /^{21}/ may be realized as [^{22}] or [^{11}], especially in non-medial position in a sentence.

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TUJIA

Southern/Luxi

Data Source: Tian et al. 1986 [JZ-Tujia]
Collected in Zexi Town, Luxi County, Xiangxi Prefecture, Hunan.

Inventory: Tian et al. 1986 [JZ-Tujia] (pages 113-118)

CONSONANTS

Initials

p	t	ts	tɕ		k	ʔ
ph	th	tsh	tɕh		kh	
b	d	dz	dʑ		g	
f		s	ɕ	ç	ħ	
		z			ɣ	
m	n				ŋ	
w	l			j		

- /ħ/ corresponds to the Northern dialect [x].

VOWELS

Monophthongs

i ĩ , y	ɨ , ũ	u
e ẽ		o õ
	a ã	

Diphthongs

On-glides	*Off-glides*
yi ỹĩ iũ	
ie,ye ɨe ũẽ io	ei
ia ĩã,ya ỹã ua ũã	ai aɨ

Triphthongs

uei

iaɨ

- All vowels with on-glide /y-/ are found only in Chinese loans.
- The /ai iaɨ iũ õ/ rhymes correspond to the /au iau iu ũ/ rhymes in Northern dialects respectively.

TONES

ma^{55}	high level
ma^{35}	high rising
ma^{21}	low falling
ma^{33}	mid level
ma^{13}	low rising

- The high level tone /^{55}/ in the Northern dialect may correspond to tones /^{55}/, /^{33}/, or /^{13}/ in the Southern dialect.
- Northern tones /^{35}/ and /^{21}/ correspond to Southern tones /^{21}/ and /^{35}/ respectively.

UGONG

Data Source: Bradley 1993 [DB-Ugong]
STEDT Questionnaire. Kok Chiang District, Kanchanaburi Province, Thailand.

Inventory: Bradley 1993 [DB-Ugong]

CONSONANTS

Initials

p	t	c	k	ʔ
ph	th		kh	
b	d		g	
	s			h
m	n	ɲ	ŋ	
w	l	y		
	(ʔl)			

- /ʔl/ has now been replaced by /ʔ/ for most speakers.

Medials

(-l-)	-y-

- /-l-/ has now been lost or replaced by /-y-/.
- Medials occur only after labial and velar stops.

Finals

-k	-ʔ
-ŋ	

VOWELS

Monophthongs

i	ɨ	ɯ , u
ɪ	ɘ	ʉ , ʊ
e̞	ə , ɵ	ɤ , o̞
ɛ	ɵ̞	ʌ , ɔ
	ɑ	

- The vowel transcription is phonetic, not phonemic.
- The symbol < ˛ > appears in the handwritten original as a subscript hook. This symbol evidently indicates a lower or more open variety of the main symbol. Note the three varieties of the vowel symbol <ɵ>, one with a subscript dot, one with a single hook, and one with a double hook.

Diphthongs

oa ɯa uo

TONES

má	[55]
mâ	[53]
mǎ	[35]
ma	[33]
mà	[21]

- Nearly all instances of tone [53] are underlyingly /21/ when they occur word-finally.

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WANANG

Data Source: Burling 1959 [RB-PB]
Collected on the western border of the Garo Hills, Garobadha.

Inventory: Burling 1959 [RB-PB] (page 438)

CONSONANTS

Initials

p	t	c	k	
	t‘			
ɸ		s		h
m	n		ŋ	
w	l	r		

- /t‘/ is a strongly aspirated stop.
- /c/ is an alveolar affricate.
- /ɸ/ is a very breathy bilabial fricative.
- /r/ is a flap.

Finals

-p	-t	-k
-m	-n	-ŋ
	-r	

VOWELS

Monophthongs			*Diphthongs*	
i		u		
e	ə	o	əi	əu
	a		ai	au

- The author stated that his recording was somewhat inconsistent as regards the distinction between /a/ and /ə/, and that there might be no distinction between /ai/ and /əi/.

❖

WANCHO

Data Source: Marrison 1967 [GEM-CNL]

Spoken in the extreme northeastern part of the Tuensang District of Nagaland and the adjacent western end of the Tirap Division of N.E.F.A. Marrison takes his lexical data from [PEA1873] and [PEA1874].

Inventory: Marrison 1967 [GEM-CNL] (page 371)

Secondary Sources: [WTF-PNN]

SYLLABLE CANON

(C)V(V)(C)

CONSONANTS

Initials

p	t		ch	k	
b	d	tz	j	g	
		s	sh		h
m	n		ny	ng	
v	l	r			

Finals

-p	-t	-k
-m	-n	-ng

- Marrison indicates that <ch sh tz ny> correspond to /c ʃ j ñ/ respectively.

VOWELS

Monophthongs		*Diphthongs*
i	u	
e	o	
a		ia wa ai au

- <wa> represents /ua/.
- It appears that final consonants do not occur with the diphthongs /ai au/.

❖

XIXIA[1]

Data Source: Nishida 1964, 1966 [NT-SGK]

The data come from a number of textual sources, including Xixia rhyme books and transcriptions of Xixia sounds in Tibetan and Chinese. An explanation of these sources is given in English on pages 525-533. A few of the symbols have been modified in the STEDT database.

Inventory: Nishida 1964, 1966 [NT-SGK] (rhymes: pages 40-68; vowel charts: pages 68-69; initials: pages 71-149; consonants: page 149; explanation of the phonemic reconstruction (in English): pages 525-537)

Note: Transcription normalized in STEDT database.

CONSONANTS

Simple Initials

p		t	ts	ʈ	tš	k	ʔ
ph		th	tsh	ʈh	tšh	kh	
					ňtšh		
mb	mv	nd	ndz	ɳɖ	ňdž	ŋg	
	f	lh	s		š	x	
	v	ɬ				ɣ	
					ňž	ŋɣ	
m		n		ɳ	ň	ŋ	
		nh				ŋh	
w		l	r				ʁ
ʔw					ʔy		

Cluster Initials

nr stsh tshl ɣk ŋz ʁz

- <ɬ> is a voiced lateral fricative [ɮ] (p. 140).
- <lh> is a voiceless lateral fricative [ɬ] (p. 141).
- <ʔ ndz ɬ ʔw ʔy> are transcribed <ʔ ⁿdz ɬ ʔw ʔy> in [NT-SGK].
- In addition, Nishida uses the cover symbols <B F T G C č H L> to represent initials that are not fully reconstructible. (The set of phonemes covered by each symbol is determined by the traditional Chinese place-of-articulation term—in Nishida's translation 'bilabial', 'labiodental', 'dental', 'velar', 'alveolar', 'alveopalatal', 'velar

[1]Called *Hsi-Hsia* in [NT-SGK], *Tangut* in [EG-Tangut].

fricative', 'retroflex and liquid'—which does not correspond exactly to the actual place of articulation of the reconstructed Xixia initials.)

Medials

-ĭ- -^{w}- -ĭ^{w}-

Finals

-w -ĕ -˜ -ɦ

- <ĕ> is a palatal off-glide, described by Nishida as equivalent to <y> (p. 69).
- <˜> is written over the vowel and represents nasalization. It is treated systemically as a final by Nishida (p. 69).

VOWELS

i	ɨ , ʉ	ɯ
ɪ		ʊ
e		o
ɛ	ə	ɔ
a		ɑ

- There is a three-way contrast among vowels: lax (unmarked), tense (marked by <̣> under the vowel), and retroflexed (marked by <-r> following the vowel), but [ụ] and [ə] do not occur. (Nasalization of the vowel is analyzed by Nishida as a final.) There are tentative reconstructions of three rhymes with vowels that are both tense and retroflexed /-ɪ̣r -ɨ̣r -ĭə̣r/, marked by Nishida with a question mark (p. 67).

TONES

- Nishida believes that Xixia was not tonal.

❖ ❖ ❖ ❖ ❖

XIXIA

Data Source: Sofronov c1978 [MVS-Grin]

Sofronov added his handwritten reconstructions to the glossary of Xixia characters in [EG-Tangut]. The intended phonetic values are unclear.

Inventory: Extracted from Sofronov c1978 [MVS-Grin]

CONSONANTS

Simple Initials

p	t	ts	tś	k	ˑ
ph	th	tsh	tśh	kh	
		s	ś	x	
v			ż		
m	n			ng	
mb	nd	ndz	ndź		
w	l	r			
	lh				

- <ˑ> represents glottal stop [ʔ].
- There seems to be a pre-initial <h-> that occurs in a few words.

Initial Clusters

ld rng rm

Medials

-i̯- -ɪ̯- -i̯w- -ɪ̯w-

Finals

-n -ɯ

VOWELS

Monophthongs

i		u ụ		û
ɪ ị				
e ẹ	ə ə̣	o ọ	ê	ə̂
	a ạ	ɑ ɑ̣		â

- There is a three-way contrast among vowels. Those with a subscribed dot are presumably tense. The phonetic value of the circumflex is unclear.
- <ɑ> may just be an allograph of <a>.

Diphthongs

uo ụo

ei ẹi ou

ai ại

TONES

ma[1] ma[2]

- A few of the syllables in the STEDT database lack tone marks. The value of the two tones is unclear.

❖

YACHAM-TENGSA

Data Source: Marrison 1967 [GEM-CNL]

Yacham-Tengsa is spoken east of the Dikhu River in what is now mostly Phom country. Marrison takes his lexical data from [JPM-Ao].

Inventory: Marrison 1967 [GEM-CNL] (page 372)

SYLLABLE CANON

(C)V(C)

CONSONANTS

Initials

p	t	ch	k
ph	th	chh	kh
b		j	
	s	sh	
m	n	ny	ng
w	l	y	

Finals

-p	-t	-k
-m	-n	-ng

- "In this, as in other Ao dialects, there is no phonemic distinction between aspirate and non-aspirate initial plosives" (p. 372).
- Marrison indicates that <p> and <ph> correspond to /p/; <t> and <th> correspond to /t/; <ch> and <chh> correspond to /c/; <k> and <kh> correspond to /k/. It is not clear whether this represents allophonic or merely orthographic variation.
- No phonemic equivalent is provided for <sh>, but it probably corresponds to /ʃ/, which Marrison lists in his phoneme chart.
- <ny> corresponds to /ñ/.

VOWELS

i		u
e	ə	o
	a	

- No phonemic equivalent is provided for <ü>, but it probably corresponds to /ə/, which Marrison lists in his phoneme chart.

❖

YAKHA

Data Source: Kohn 1990 [TK-Yakha]
STEDT Questionnaire.

Inventory: Extracted from Kohn 1990 [TK-Yakha]

CONSONANTS

Initials

p	t	c		k	ʔ
ph	th	ch		kh	
b	d	dz	ḍ	g	
		s			h
m	n			ŋ	
w	l	r	y		

- The phonetic values of /c ch/ are unclear.

Finals

-p	-t		-k	-ʔ
				-h
-m	-n		-ŋ	
	-l	-r		

VOWELS

Monophthongs

i	iː					u	uː	
e	eː					o	oː	
ɛ	ɛː			ə		ɔ	ɔː	
				a	aː			

Diphthongs

ai							iu	

- There is one instance of a nasalized vowel: <õ> in <gõda> ‘knee’.

❖

YI

Dafang

Data Source: Sun et al. 1991 [ZMYYC] #22
Chen et al. 1985 [JZ-Yi]

[ZMYYC]: Eastern Dialect. Collected in Chengguan Hamlet, Dafang County, Guizhou.
[JZ-Yi]: Eastern Dialect. Collected in Dafang County, Guizhou.

Inventory: Sun et al. 1991 [ZMYYC] #22 (pages 258-261)
Chen et al. 1985 [JZ-Yi] (There is no specific information on this dialect, but there is a general discussion of the phonology of Eastern Yi dialects on pages 180-182)

CONSONANTS

Initials

p	t	ts	ʈ	tɕ	k	
ph	th	tsh	ʈh	tɕh	kh	
b	d	dz	ɖ	dʑ	g	
mb	nd	ndz	nɖ	ndʑ	ŋg	
f		s		ɕ	x	h
v		z		ʑ	ɣ	
m	n		ɳ	ȵ	ŋ	
	l					
	ɬ					

- /ȵ/ may be realized as [n] before /i/ in weakened syllables.
- When /m/ and /u/ combine in a syllable, the sequence is often realized as a syllabic nasal. Such syllables occur with relatively high frequency. Examples are <m̩(u)^{55}> 'old', <m̩(u)^{33}> 'horse', and <m̩(u)^{21}> 'make'.
- When /ni/ or /ȵi/ are pronounced quickly as weakened syllables, they are realized as syllabic nasals. Such syllables occur only rarely. Examples are <n̩(i)^{21} dʑy^{33}> 'day', <n̩(i)^{21} tsɯ^{33}> 'twenty'.

VOWELS

ɿ		
i , y		ɯ , u
e	ə	o
		ɔ
a		ɑ

- /ɿ/ is realized as [ɿ] after alveolars /ts tsh dz ndz s z/, and as [ʅ] after retroflexes /ʈ ʈh ɖ nɖ ɳ/.
- /e a ɔ o/ are realized as [ɛ ᴀ o ᴜ].
- The vowel /ɯ/ can occur without an initial consonant.
- There are sixteen rhymes containing diphthongs or final consonants; these rhymes mostly occur in Chinese loanwords.

TONES

ma^{55}	high level
ma^{33}	mid level
ma^{13}	low rising
ma^{21}	low falling

- In [JZ-Yi], tones are represented by Chao tone letters, not numbers.
- Some occurrences of the /^{13}/ tone are in polysyllabic Chinese loanwords.

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YI

Mile

Data Source: Sun et al. 1991 [ZMYYC] #25
Southeastern Dialect. Collected in Dapingdi, Xiyi Town, Mile County, Yunnan.

Inventory: Sun et al. 1991 [ZMYYC] #25 (pages 256-258)

CONSONANTS

Initials

p	t	ts	ʈ	tʂ	tɕ	k
ph	th	tsh	ʈʰ	tʂh	tɕh	kh
b	d	dz	ɖ	dʐ	dʑ	g
f		s		ʂ	ɕ	x
v		z		ʐ	ʑ	ɣ
m	n					ŋ
	l					
	ɬ					

- Voiced stops and affricates are slightly prenasalized when occurring in individual words pronounced slowly.
- "When bilabial stops /p ph b/ combine with vowels /u u̱/, there is a slight vibration of the lips, so that they are realized as [pɸ pɸh bɸ]." (Note: The text here has the Greek symbol psi <ψ> (which is not in the IPA) rather than phi <ɸ>. Presumably a bilabial affricate or 'attrillate' is indicated. IPA has no symbol for a voiceless bilabial trill; the authors here may be inventing their own or, more likely, the typesetter has simply confused two similar Greek letters.)
- When /n/ combines with vowels /i i̱ e/, it is realized as [ȵ].
- When the velar fricative /x/ combines with vowels /i i̱ e/, it is realized as [ç].
- When /m/ combines with vowels /u u̱/, the vowel is weakened and drops out, and the initial becomes syllabic.

VOWELS

Monophthongs

Unconstricted			*Constricted*		
i		ɯ , u	i̱		ɯ̱ , u̱
e		o	e̱		o̱
ɛ	ʌ		ɛ̱	ʌ̱	

Diphthongs

uʌ

- When the high vowels /i i̱/ combine with dental affricates and fricatives, they are realized as [ɿ ɿ̄]; when they combine with retroflexes, they are realized as [ʅ ʅ̄].

- /e e̲/ are realized as [ie ie̲].
- /ɛ ɛ̲/ are pronounced with the mouth more open; their phonetic value is close to [æ æ̲].
- /o o̲/ are realized as [ʊ ʊ̲].
- /u u̲/ are articulated front, their phonetic value is [~~ʉ~~ ~~ʉ̲~~].
- When the vowels /i ᴀ o ɯ/ appear without an initial consonant, there is an automatic glottal onset, which is not transcribed.
- Aside from /uᴀ/, there are also diphthongs /oe oᴀ/ etc., but these generally appear only in Chinese loanwords and in certain grammatical words when they occur in running speech.

TONES

mᴀ^{55} high level
mᴀ^{33} mid level
mᴀ^{21} low falling

- Words in the low falling tone with constricted vowels are realized with a [^{31}] tone and a final glottal stop [ʔ].
- Some words occur with tone [^{22}], but in speech they are in free variation with other tones. Since there is no contrast, [^{22}] is not considered a toneme.

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YI

Mojiang

Data Source: Sun et al. 1991 [ZMYYC] #26
Southern Dialect. Collected in Jingxing, Mojiang County, Yunnan.

Inventory: Sun et al. 1991 [ZMYYC] #26 (pages 253-255)

CONSONANTS

Initials

p	t	ts	tɕ	k	
ph	th	tsh	tɕh	kh	
b	d	dz	dʑ	g	
f		s	ɕ	x	h
v		z	ʑ	ɣ	
m	n		ɳ	ŋ	
	l				

- When /m ŋ/ combine with vowels /u u̲/, the vowel usually drops out; when /n/ combines with vowels /i i̲/, the vowel usually drops out. Lateral /l/ can occur syllabically.
- When /ts tsh dz s z/ combine with vowels /i i̲/, they are realized as [tʃ tʃh dʒ ʃ ʒ].
- [ɳ] and [h] occur only rarely, but they do contrast with the other consonants.

VOWELS

Monophthongs

Unconstricted			*Constricted*		
i		ɯ , u	i̲		ɯ̲ , u̲
e		o	e̲		o̲
ɛ	ʌ	ɒ	(ɛ̲)	ʌ̲	(ɒ̲)

- When /i i̲/ combine with dental affricates and fricatives, they are realized as [ɿ ɻ̄].
- /e/ is pronounced [ɪ].
- /u u̲/ are realized as [ʉ ʉ̲], and are slightly dentalized.
- Tense vowels /ɛ̲ ɒ̲/ occur mostly in loanwords.

Diphthongs

ui		iu
ie ue		io
uɛ	iʌ uʌ	iɒ

- Diphthongs /ie iʌ iɒ io iu ue uɛ uʌ ui/ also occur, but only in Chinese loanwords.

TONES

mA^{55}	high level
mA^{33}	mid level
mA^{21}	low falling

- In the high level tone /o/ and /o̱/ are not generally distinguished. The single exception is <mo̱^{55}> 'high' and <mo^{55}> 'bamboo'; in the former the vowel is realized as [ʊ].
- No words in the low falling tone have constricted vowels, and the abrupt [^{32}] tone does not occur in syllables that can take the low falling tone. Therefore the [^{32}] tone can be considered an allotone of the low falling toneme: all words with the low falling toneme with constricted vowels are realized with tone [^{32}].
- Editor's note: The author, basing his analysis on the fact that no constricted syllables occur under the low falling tone, considers this tone to be in complementary distribution with the abrupt tone [$^{3\circ2}$]. He therefore writes constricted syllables under [^{32}] with the symbol <◌̱^{32}>. This has the great disadvantage of obscuring the historical difference in the origin of [^{32}] (from PLB *low checked) and [^{21}] (from PLB Tone *1).
- Chinese loanwords enter the high level tone category.

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YI

Nanhua

Data Source: Sun et al. 1991 [ZMYYC] #24
Central Dialect. Collected in Yangjiatian Village, Xijian Town, Nanhua County, Yunnan.

Inventory: Sun et al. 1991 [ZMYYC] #24 (pages 251-253)

CONSONANTS

Initials

p	t	ts	tʂ	tɕ	k	
ph	th	tsh	tʂh	tɕh	kh	
b	d	dz	dʐ	dʑ	g	
f		s	ʂ	ɕ	x	h
v		z	ʐ	ʑ	ɣ	
m	n			ȵ	ŋ	
	l					

- The glottal fricative /h/ is usually nasalized and should properly be written <ħ>; but since there is no contrast, the tilde has been left off in transcription.

VOWELS

Monophthongs

Unconstricted		*Constricted*	
i	ɯ , u	i̱	ɯ̱ , u̱
e	o	e̱	o̱
ɛ	ʌ	ɛ̱	ʌ̱

Diphthongs

iu

io i̱o̱

iʌ uʌ

- When /i i̱/ combine with dental affricates and fricatives, they are realized as [ɿ ɿ̱]; when they combine with retroflexes, they are realized as [ʅ ʅ̱].
- When /ɯ ɯ̱/ combine with velars, they are realized as [ɤ ɤ̱].

TONES

mʌ^{55}	high level
mʌ^{33}	mid level
mʌ^{21}	low falling

❖ ❖ ❖ ❖ ❖

YI

Nanjian

Data Source: Sun et al. 1991 [ZMYYC] #23
Chen et al. 1985 [JZ-Yi]

[ZMYYC]: Western Dialect. Collected in Wuju Village, Zhonghua Town, Nanjian County, Yunnan.

[JZ-Yi]: Western Dialect. Collected in Nanjian County, Yunnan.

Inventory: Sun et al. 1991 [ZMYYC] #23 (pages 248-2651)
Chen et al. 1985 [JZ-Yi] (There is no specific information on this dialect, but there is a general discussion of the phonology of Western Yi dialects on pages 195-198)

CONSONANTS

Initials

p	t	ts	tʂ	tɕ	k	
ph	th	tsh	tʂh	tɕh	kh	
b	d	dz	dʐ	dʑ	g	
f	s		ʂ	ɕ	x	h
v	z		ʐ	ʑ	ɣ	
m	n				ŋ	
	l					

Finals

-ŋ

- When /m/ combines with /u̯ ɯ̯/, or when /n l/ combine with /ɿ ɿ̄/, they are unreleased and the vowels are weakened; they are transcribed <m̩(u̯) m̩(ɯ̯) n̩(ɿ) n̩(ɿ̄) l̩(ɿ) l̩(ɿ̄)> respectively.
- After /h/, all vowels become nasalized; this is not marked in the transcription.
- /-ŋ/ occurs only with the vowel /ɑ/.

VOWELS

Monophthongs

Unconstricted		*Constricted*	
ɿ	u̯	ɿ̄	ɯ̯
i , y	ɯ , u	i̱ , ȳ	ɯ̱
e	o		
a	ɑ		

Diphthongs

ɑi ɑo

- /u̯ ɯ̯/ are dentalized vowels.
- There are also twenty-odd diphthongs and nasalized vowels that are used when spelling Chinese loanwords, but their use is infrequent and inconsistent.

TONES

ma[55] high level
ma[33] mid level
ma[21] low falling
ma[13] low rising

- In [JZ-Yi], tones are represented by Chao tone letters, not numbers.
- The low rising tone occurs mostly in Chinese loanwords.
- Four allotones [[51] [53] [15] [31]] can occur in compounded syllables.

❖ ❖ ❖ ❖ ❖

YI

Xide

Data Source: Sun et al. 1991 [ZMYYC] #21
Chen et al. 1985 [JZ-Yi]

[ZMYYC]: Northern Dialect. Collected in Lizi Town, Hongma District, Xide County, Liangshan Prefecture, Sichuan.
[JZ-Yi]: Northern Dialect. Collected in Xide County, Sichuan.

Inventory: Sun et al. 1991 [ZMYYC] #21 (pages 245-248)
Chen et al. 1985 [JZ-Yi] (pages 3-29)

CONSONANTS

Initials

p	t	ts	tʂ	tɕ	k	
ph	th	tsh	tʂh	tɕh	kh	
b	d	dz	dʐ	dʑ	g	
mb	nd	ndz	ndʐ	ndʑ	ŋg	
f		s	ʂ	ɕ	x	h
v		z	ʐ	ʑ	ɣ	
m	n			ɳ	ŋ	
m̥	n̥					
	l					
	ɬ					

- In this dialect, original /ŋ̍/ has merged with /ŋ/. ([JZ-Yi] lists a parenthesized (ŋ̍) in the consonant chart; it is absent in [ZMYYC].)
- When consonants /m̥ m n̥ n ɬ l /combine with /ɿ ɿ̄ u u̲,/ they are unreleased and the vowels are weakened; these syllables are transcribed as <ṃ(u) ṃ(u̲) ṇ(ɿ) ṇ(ɿ̄)>, etc. Syllabicity marks are not written under the voiceless nasals.

VOWELS

Unconstricted		*Constricted*	
ɿ		ɿ̄	
i	ɯ , u		u̲
	o	e	ɔ
		a	

- Constricted vowels /e a ɔ/ are not marked with an underline since there is no contrast with unconstricted vowels.
- The constricted vowel [u̲ɯ] occurs in the suffix of some words, but is considered an allophone of /ɯ/.
- /ɿ ɿ̄/ are realized as [ɻ ɻ̄] after retroflexes; /u u̲/ are realized as dentalized [u̪ u̪̲] after labiodentals and velars, as [ɥ ɥ̄] after alveolar fricatives and affricates, and as [ɥ̟ ɥ̟̄] after retroflexes. /e/ is realized as [ɛ] or [ɪ̆ɛ] ([ZMYYC]); or as [jɛ̲] ([JZ-Yi]).

TONES

ma^{55}	high level
ma^{44}	mid high level
ma^{33}	mid level
ma^{21}	low falling

- In [JZ-Yi], tones are represented by Chao tone letters, not numbers.
- /^{44}/ is a basic toneme, but [^{44}] is also a sandhi form of /^{33}/ and /^{21}/,which are always transcribed in their original tone.
- Some syllables in this dialect, in addition to their tone, have emphatic length. This, however, has not been transcribed.

❖

YIMCHUNGRÜ

Data Source: Marrison 1967 [GEM-CNL]

Spoken in the south-central and southeastern parts of the Tuensang District of Nagaland. Marrison takes his lexical data from [GEM-Yimch].

Inventory: Marrison 1967 [GEM-CNL] (page 373)

SYLLABLE CANON

(C)(r)V(V)(C)

CONSONANTS

Initials

p	t	tr	ts/ch	k
ph	th	thr	tsh/chh	kh
b	d		j	
	s		sh	h
m	n			ng
w	l	r	y	

Finals

-p	-t	-k
-m	-n	-ng

- Marrison indicates that <ts> and <ch> correspond to /c/. It is not clear whether this represents allophonic or merely orthographic variation.
- <sh> corresponds to /ʃ/.
- Marrison indicates that <tsh> and <chh> correspond to /ch/, but does not list /ch/ in his phoneme chart. The omission is probably a typographical error.

VOWELS

Monophthongs			*Diphthongs*	
i		u		
e	ü	o	ie	ou
	a			

- Marrison indicates that <ü> represents /ə/.

❖

ZAIWA[1]

Data Source: Burling 1967 [RB-PLB]
"I collected all the data myself or at least checked it personally with speakers of the various languages, largely with students at the University of Rangoon in 1959-60" (p. 4).

Inventory: Burling 1967 [RB-PLB] (pages 16-19)

CONSONANTS

Initials

ph	phy	th		tsh	ch	khy	kh	
pʔ	pʔy	tʔ		tsʔ	cʔ	kʔy	kʔ	
p	py	t		ts	c	ky	k	
				s	š			h
m	my	n	ny				ŋ	
mʔ	mʔy	nʔ	nʔy				ŋʔ	
v		l		(r)	y			
		lʔ						

- /p py t ts c ky k/ are all fully voiced consonants.
- The "glottalized" consonants impose creaky vocalization on the following vowel.
- /v/ is realized as [β] after [e a] when in a high tone syllable. Otherwise there is free variation ranging from [β]- to [w]-like sounds.
- /r/ is retroflex and fricative; it probably only occurs in borrowings.

Finals

-p	-t	-k	-ʔ
-m	-n	-ŋ	

VOWELS

Monophthongs

i	u
e	o
a	

[1]Called *Atsi* in [RB-PLB], [JAM-TSR], [JAM-GSTC], [JAM-VSTB].

Diphthongs

ui

ai au

- /i/ is high front when following initial or medial /-y-/. Otherwise it is backed toward high central.
- Diphthongs occur only in open syllables.

TONES

mà	low falling
mâ	mid level; short falling
má	high falling
mā	high level
mak	checked
mă	toneless, with reduced schwa-like vowel

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ZAIWA

Data Source: Sun et al. 1991 [ZMYYC] #42
Xu and Xu 1984 [JZ-Zaiwa]

[ZMYYC]: Collected in Xishan, Luxi County, Dehong Prefecture, Yunnan.
[JZ-Zaiwa]: Spoken in Xishan, Luxi County, Zhanxi of Yunjiang County, and Bangwa of Longchuan County, Yunnan.

Inventory: Sun et al. 1991 [ZMYYC] #42 (pages 313-317)
Xu and Xu 1984 [JZ-Zaiwa] (pages 6-20)

CONSONANTS

Initials

p	pj	t	ts	tʃ	k	kj
ph	phj	th	tsh	tʃh	kh	khj
(f)			s	ʃ	x	xj
v				ʒ		
m	mj	n			ŋ	ŋj
		l		j		

Finals

-p	-t	-k	-ʔ
-m	-n	-ŋ	

- /f/ is found only in Chinese loans.
- Dentals are palatalized before front vowels (e.g. [tji], [lje]) but this is not indicated in the transcription.
- Nasals can be syllabic in a few cases.

VOWELS

Monophthongs		*Diphthongs*	
i i̱	u u̱		ui u̱i
e e̱	o o̱		oi o̱i
a a̱		ai a̱i au a̱u	

- All ten monophthongs occur with all seven final consonants, except that /i/ does not combine with /-p/, and /i̱/ does not combine with /-m/. Diphthongs occur only in open syllables.
- /e/ is realized as [ə]; /e̱/ is realized as [e̱] except after dental affricates, bilabials, velars, and /v/, where it is realized as [ə̱].
- After velars, or after dental affricates, bilabials, /v/, and before a velar coda, /i i̱/ are realized as [ɤ ɤ̱].
- In the speech of youngsters and cadres, four more rhymes are found under influence from Chinese: /ɿ ua iu iau/.

TONES

ma^{21} ma^{55} ma^{51}

- In [JZ-Zaiwa], tones are represented by Chao tone letters, not numbers.
- The high level tone /^{55}/ is realized as high rising [^{15}] when the syllable contains an unaspirated initial plus a lax vowel nucleus.
- In weakened syllables, all three tones become reduced; /^{51}/ and /^{55}/ become a weak high tone, while /^{21}/ becomes a weak low tone.

❖ ❖ ❖ ❖ ❖

ZAIWA

Sadon

Data Source: Yabu 1982 [YS-Zaiwa]

The Zaiwa language is called "Atsi-ga" in Jinghpo, but "/tsaiwâ taŋ/" by the people themselves. It is spoken in a number of scattered villages in northern Burma, from the east bank of the "Nmaihka" River in Kachin State to northern Shan State and in the southwestern part of Yunnan Province in China.

Sadon is located about 53 miles across the Irrawaddy River from Myitkyina, capital of Kachin State, and about 40 miles from Waimaw, where the township office has been shifted.

Although the author made several short trips to Mandalay and Myitkyina off and on since 1972, in the end he failed to get to this area. The fieldwork for this book was done primarily during a short stay at Mandalay in 1978 and 1979, with a student at the Teacher Training Institute, Mandalay (U Hpakawn Yaw, then age 27), who was born and had lived in Sadon and a nearby town, excluding the period of four years of education in the plains of Burma.

Inventory: Yabu 1982 [YS-Zaiwa] (pages 7-12)

SYLLABLE CANON

T
C(C)V(V)(C)

CONSONANTS

Initials

p	py	t	ts	c	k	ky		ʔ
ph	phy	th	tsh	ch	kh	khy	(kr)	
				š	x			
m	my	n		ň	ŋ			
w		l	r	y				

Finals

-p	-t	-k	-ʔ	
-m	-n	-ŋ		

- /p t ts c k/ are pronounced [p t ts tɕ k] when combined with constricted vowels, but are realized as [b̥ d̥ d̥z̥ d̥ʑ̥ g̊] when combined with non-glottalized vowels. In the latter case, these are actually semi-voiced sounds that begin with a voiceless onset but become fully voiced as they are released. In the medial position of words and phrases, the voiceless onset portion completely disappears.

- /c/, /ch/, and /ň/ are phonetically [tɕ ~ d͡ʑ], [tɕh], [ȵ ~ ŋj], respectively.
- /w/ is realized as a weakly fricated [v] before the back vowels /o u/, and as [w] elsewhere.
- /r/ is realized as [z̬ ~ ɹ ~ ɾ]. In the post-verbal particle /-rá ~ -râ/ it is pronounced as [ɾ] at normal speed.
- /š/ is phonetically [ɕ].
- /x/ is pronounced [ç ~ χ] before /i/, and [x] otherwise.
- /ʔ/ is phonemic as a syllable onset.
- There are only two examples of /r/ in loanwords from Jingpho.

VOWELS

Monophthongs

i i̱	u u̱
e e̱	o o̱
a a̱	

Diphthongs

ui u̱i̱	
oi o̱i̱	
ai a̱i̱	au a̱u̱

- There is a contrast between glottalized and non-glottalized vowels. The glottalized vowels are pronounced with a strong constriction of the larynx. When pronounced emphatically, the initial consonants preceding constricted vowels are also glottalized, but otherwise they are not.
- The following initial consonants combine with glottalized vowels:
  /p t ts c k m n ň ŋ w l š y x ʔ/
- Glottalized vowels do not combine with the aspirated series of consonants, and no examples of glottalized vowels combining with /r/ have been observed. The initial nasals /m n ñ y/ are realized as preglottalized [ʔm ʔn ʔň ʔŋ] when combined with constricted vowels.
- /e e̱/ never combine with finals /-p -t -k -m/, and combine with finals /-n -ŋ/ only in loanwords.
- /i i̱/ never combine with final /-m/, and combine with finals /-p -k/ only in loanwords.
- Diphthongs only occur in open syllables.

TONES

ma	low level (I)	[^{22}]
má	high level (II)	[^{44}]
mâ	high falling (III)	[^{41}]

- When a vowel occurs in an open prefixal syllable, there are cases where it is weakened and shortened. Even here, however, a two-way contrast between high and

low is strictly preserved. This may be regarded as the contrast between tones I and II. Although it is a subphonemic detail, weakened vowels are written with a superscript breve; e.g. the tone of <mă> is [^{22}], and the tone of <mắ> is [^{44}].

ZEME

Data Source: Marrison 1967 [GEM-CNL]

Spoken in the eastern part of the North Cachar Hills and the contiguous tract in the Zeliang sub-district of the Kohima District of Nagaland. Marrison takes his lexical data from [GEM-Zeme].

Inventory: Marrison 1967 [GEM-CNL] (page 374)

SYLLABLE CANON

(C)(C)V(V)(C)

CONSONANTS

Initials

p	t	ch	k	
mp	nt	nch	ngk	
b	d		g	
mb	nd		ngg	
	s			h
	ns			
	z			
	nz			
m	n		ng	
mm	nn		ngng	
w	l	r		
		nr		

Finals

-p	-t	-k
-m	-n	-ng

- Marrison indicates that <ch j> correspond to /c z/ respectively.

VOWELS

Monophthongs			*Diphthongs*		
i		u			ui
e			ei	eu	
	a			ai au ua	

- /ua/ is the only diphthong which co-occurs with final consonants.

ZHABA[1]

Data Source: Sun et al. 1991 [ZMYYC] #16
Collected in Tuanjie Town, Yajiang County, Ganzi Prefecture, Sichuan.

Inventory: Sun et al. 1991 [ZMYYC] #16 (pages 223-226)

CONSONANTS

Initials

p	pr	t	ts	tʂ	tɕ	k	q	
ph	phr	th	tsh	tʂh	tɕh	kh	qh	
b	br	d	dz	dʐ	dʑ	g		
nb		nd	ndz	ndʐ	ndʑ	ng		
(f)			s	ʂ	ɕ	x		h
			z	ʐ	ʑ	ɣ		ɦ
m		n			ɲ	ŋ		
m̥		n̥			ɲ̊	ŋ̊		
w		l	r		j			
		ɬ						

- /f/ occurs only in Chinese loans.
- /s ɕ/ can be pronounced with aspiration in certain words.
- /l/ and /ɬ/ can freely interchange in native vocabulary, but since they must be differentiated in Tibetan loanwords, /ɬ/ is considered a separate phoneme.
- The /ʐ/ and /r/ may interchange word-initially; but they are contrastive when occurring in the second syllable of words.
- Zero-initial is realized as [ʔ].
- <n-> in prenasalized initials represents a homorganic nasal.

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[1] *Zhābā*, the language treated here, should be distinguished from *Zhābà*, spoken in Daofu County, Sichuan. The Zhaba treated here has been identified with Queyu (Yajiang) by Jackson Sun (J. Sun 1992).

VOWELS

Monophthongs

Oral			*Nasal*		
i , y	ɯ	u	ĩ , ỹ		ũ
e , ø	ə	o	ẽ , ø̃	ə̃	õ
ɛ	ɐ	a	ɛ̃		ã

Diphthongs

On-glides			*Off-glides*		
ui					
ue uɛ̃			ei	əu	
uɛ yɛ	uɐ	ua	ɛi		ai au

Triphthongs

uei iau

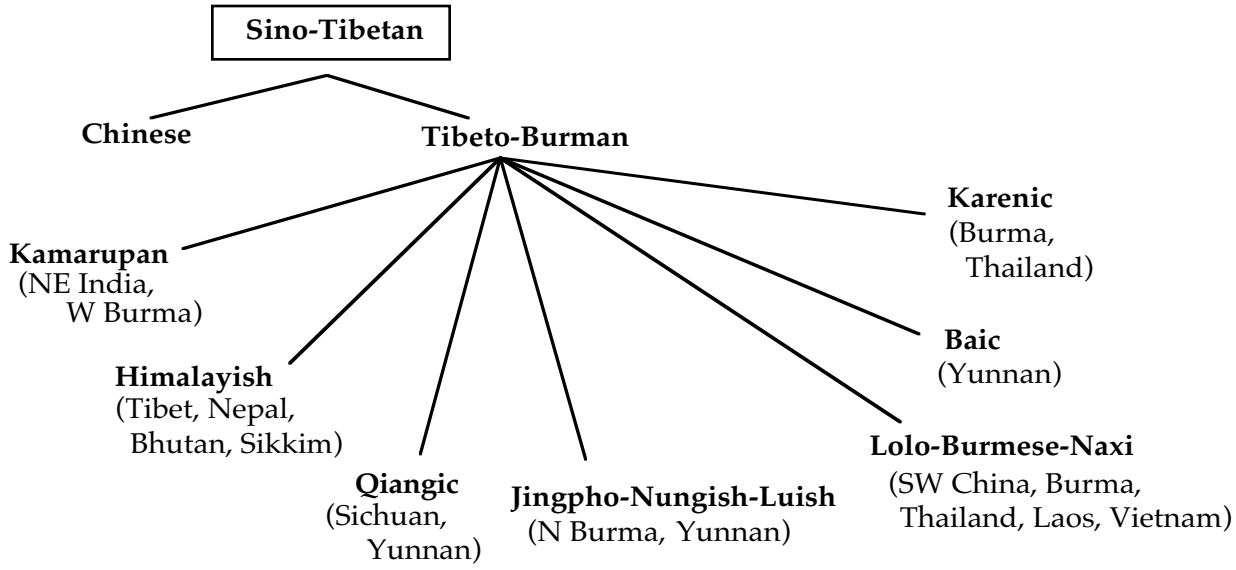
- /i/ is realized as [ɨ] after alveopalatals, as [ɻ] after alveolar fricatives and affricates, and as [ɻ] after retroflexed fricatives and affricates.
- /a/ represents [ᴀ].
- Nasalized vowels are lower than their plain counterparts.

TONES

ma^{55} high level
ma^{53} high falling
ma^{35} high rising
ma^{33} mid level

❖

MAJOR BRANCHES OF TIBETO-BURMAN



KAMARUPAN
- Kuki-Chin
- Meithei
- Mikir
- Mru
- Naga
  - -Angamoid
  - -Central
  - -Eastern
  - -Southern
  - -Southwestern
- Northern Naga
- Bodo-Garo
- Abor-Miri-Dafla

HIMALAYISH
- Bodic
- Western Himalayish
- TGTM
- Central Nepal Group
- Kiranti
- Newari
- Lepcha
- Dhimalish

QIANGIC
- rGyalrong/Ergong
- Xixia/Tosu
- Qiang, Northern and Southern
- Other Qiangic

JINGPHO-NUNGISH-LUISH

LOLO-BURMESE-NAXI
- Northern Loloish
- Central Loloish
- Southern Loloish
- Burmish
- Naxi

BAIC

KARENIC

UNCLASSIFIED
- Tujia
- Jinuo

INDEX BY SUBGROUP

COMPLETE INDEX OF LANGUAGES AND DIALECTS: STANDARD AND ALTERNATE NAMES

Dialect names are in italics

H

I

J

K

L

M

N

P

Q

R

S

T

INDEX BY SOURCE ABBREVIATION AND *STEDT* LANGUAGE NAME

LIST OF *STEDT* SOURCE ABBREVIATIONS

AAK-SSM	Abbi, Anvita and Awadhesh K. Mishra. 1985. Consonant clusters and syllable structure of Meitei. LTBA. 8.2:81-92.
ABR1985	Abraham, P.T. 1985. Apatani grammar. Mysore: Central Institute of Indian Languages.
ACH1975	Acharya, K.P. 1975. Lotha phonetic reader. (Phonetic Reader Series, 14). Mysore: CIIL.
ACK-DTE	Csoma de Körös, Alexander. 1934. Essay towards a dictionary, Tibetan and English, prepared with the assistance of Bandé Sangs-Rgyas Phun-ts'ogs. Calcutta.
ACK-GTL	Csoma de Körös, Alexander. 1834. A grammar of the Tibetan language in English. Calcutta.
ACST	Chou Fa-kao. 1972. Archaic Chinese and Sino-Tibetan. Journal of the Institute of Chinese Studies of the Chinese University of Hong Kong. 5.1:159-237.
AH-CSDPN	Hale, Austin. 1973. Clause, sentence, and discourse patterns in selected languages of Nepal IV: word lists. (Summer Institute of Linguistics Publications in Linguistics and Related Fields 40). Kathmandu, Nepal: SIL and Tribhuvan University Press.
AJ-BED	Judson, Adoniram. 1893. Burmese-English dictionary. Rangoon: Baptist Board of Publications.
Anony1959	Anonymous. 1959. Lisuyu yufa gangyao [An outline of Lisu grammar]. Beijing: Scientific Publishing Company.
AO-diss	Osburne, Andrea. 1975. A transformational analysis of tone in the verb system of Zahao (Laizo) Chin. Ph.D. Dissertation, Cornell University.
ARO1980	Arokianathan. 1980. Tangkhul phonetic reader. (Phonetic reader series, 20.) Mysore: CIIL.
AT-MPB	Tayeng, Aduk. 1976. Milang phrase book. Shillong: The Director of Information and Public Relations, Gov't of Arunachal Pradesh.
AT-Padam	Tayeng, Aduk. 1983. A phrase book in Padam. Shillong: Director of Research, Arunachal Pradesh.
AW-TBT	Weidert, Alfons K. 1987. Tibeto-Burman tonology: A comparative account. (Current Issues in Linguistic Theory, Vol. 54.) Amsterdam and Philadelphia: John Benjamins Publishing Co.
B-ShrpaHQ	Bishop, Naomi. 1989. Questionnaire (Sherpa Helambu). (unpublished).
BAI1909	Bailey, Thomas Grahame. 1909. A brief grammar of the Kanauri language. ZDMG 63:661-87.
BAI1911	Bailey, Thomas Grahame. 1911. Kanauri vocabulary in two parts: English-Kanauri and Kanauri-English. (RAS Monograph 13.) London: Royal Asiatic Society.
BDHH1971	Bandhu, Chuda Mani, B. N. Dahal, A. Holzhausen and A. Hale. 1971. Nepali segmental phonology. Kirtipur: Summer Institute of Linguistics, Institute of Nepal and Asiatic Studies, Tribhuvan University, mimeographed.

BER1965	Bernot, Denise. 1965. The vowel systems of Arakanese and Tavoyan. IPLS. II:463-74.
Bhat-Boro	Bhat, D. N. Shankara. 1968. Boro vocabulary (with a grammatical sketch). (Deccan College Building Centenary and Silver Jubilee Series 59.) Poona: Deccan College Postgraduate and Research Institute.
Bhat-TNL	Bhat, D. N. Shankara. 1968. The Tankhur Naga language. Linguistic Survey Bulletin (Indian Deccan College, Poona, India). 3:6-11.
Bhat-TNV	Bhat, D. N. Shankara. 1969. Tankhur Naga vocabulary. (Deccan College Building Centenary and Silver Jubilee Series 67.) Poona: Deccan College Postgraduate and Research Institute.
BK-AD	Karlgren, Bernhard. 1923. Analytic dictionary of Chinese and Sino-Japanese. Paris: P. Geuthner.
BLBC-Khonom	Blankenship, Barbara et al. 1993. Phonetic structures of Khonoma Angami. LTBA. 16.2:69-88.
BM-Bah	Michailovsky, Boyd. 1989. Bahing. ms. (electronic).
BM-Bbp	Michailovsky, Boyd. 1989. Bantawa body parts. ms.
BM-Hay	Michailovsky, Boyd. 1989. Hayu. ms. (electronic).
BM-Hbp	Michailovsky, Boyd. 1974. Hayu body parts, in phonemic notation. ms.
BM-Htvm	Michailovsky, Boyd. 1974. Hayu typology and verbal morphology. LTBA. 1.1:1-26.
BM-LH	Michailovsky, Boyd. 1988. La langue hayu [The Hayu language]. Paris: Editions du Centre National de la Recherche Scientifique.
BM-Lim	Michailovsky, Boyd. 1989. Limbu. electronic (unpublished).
BM-PK7	Michailovsky, Boyd. 1991. Big black notebook of Kiranti, proto-Kiranti forms, ms. (unpublished).
BM-PTNL	Michailovsky, Boyd. 1988. Phonological typology of Nepal languages. LTBA. 11.2:25-50.
BMMM-Bbp	Michailovsky, Boyd and Martine Mazaudon. 1974. Bahing body parts: Rangadip village. ms.
BON1930-31	Bonnerjea, B. 1930-31. Contribution to Garo linguistics and ethnology. Anthropos. 30:509-32, 837-50, 31:141-57, 456-69.
BOR-Sema	Bor, N.L. and C.R. Pawsey. 1938. English-Sema vocabulary. JASB-Letters. 4:309-349.
BOR1938	Bor, N.L. 1938. Yano Dafla grammar and vocabulary. JASB-Let. 4:217-81.
BRO1920	Brown, George Eustace Riou Grant. 1920. The Kadus of Burma. Bulletin of the School of Oriental Studies, London. 1.3:1-28.
BRO1951	Brown, N. 1851. Specimens of the Naga Language of Assam Journal of the American Oriental Society. 2:157-165.
BS1971b	Bieri, Dora and Marlene Schulze. 1971. Sunwar phonemic summary, revised version Tibeto-Burman Phonemic Summaries IX. Kirtipur: Summer Institute of Linguistics, Institute of Nepal and Asiatic Studies, Tribhuvan University, mimeographed.
BS1971c	Bieri, Dora and Marlene Schulze. 1971. A guide to Sunwar tone. A guide to tone in Nepal IV. Kirtipur: Summer Institute of Linguistics, Institute of Nepal and Asiatic Studies, Tribhuvan University, mimeographed.

BSCH1971a	Schoettelndreyer, Burkhard. 1971. Glides in Sherpa.. Kirtipur: Summer Institute of Linguistics, Institute of Nepal and Asiatic Studies, Tribhuvan University, mimeographed.
BSCH1971c	Schoettelndreyer, Burkhard. 1971. Vowels and tone patterns in the Sherpa verb. Kirtipur: Summer Institute of Linguistics, Institute of Nepal and Asiatic Studies, Tribhuvan University, mimeographed.
BSTL	Shafer, Robert. 1957/63. Bibliography of Sino-Tibetan languages. Wiesbaden: Otto Harrassowitz. Vol. 1, 1975; Vol. 2, 1963.
BUT1875	Butler, J. 1875. A rough comparative vocabulary of the two more of the dialects spoken in the Naga Hills. JASB. 44.1:216-227.
CAU1969	Caughley, Ross. 1969. Chepang phonemic summary. Tibeto-Burman phonemic summaries IV. Kirtipur: SIL, Tribhuvan University.
CB-SpitiQ	Bodh, Sri Chhimed. 1991. Questionnaire (Spiti). (unpublished).
CG-Diss	Genetti, Carol. 1990. A Descriptive and Historical Account of the Dolakha Newari Dialect. Ph.D. Dissertation, University of Oregon.
CG-Dolak	Genetti, Carol. 1990?. Dolakhali (Newari) word list. (unpublished).
CG-Kath	Genetti, Carol. 1990?. Kathmandu word list. (unpublished.).
CHE1990	Chelliah, Shobhana L. 1990. Level ordered morphology and phonology in Manipuri. LTBA. 13.2:27-72.
CHU1867	Chuckerbutty, R.N. 1867. English, Bengali, and Garrow vocabulary. Calcutta.
CK-pGd	Chang Kun. 1968. The phonology of the Gyarong dialect. (Academia Sinica/ Bulletin of the Institute of History and Philology.) 38:251-75.
CK-TujBQ	Chen Kang. 1986. Questionnaire. (unpublished).
CK-TujMQ	Chen Kang. 1986. Questionnaire. (unpublished).
CK-YiQ	Chen Kang. 1986. Questionnaire. (unpublished).
CLA1911	Clark, Ephraim W. 1911. Ao-Naga dictionary. Calcutta: Baptist Mission Press.
CSL-YIzd	Chen Shilin, Li Min, et al., eds. 1979. Yihan zidian [Yi-Chinese dictionary]. Yi Language Work Unit, People's Committee of Sichuan.
CYS-Meithei	Singh, Ch. Yashwanta. 1991. Questionnaire (Meithei). (unpublished).
DB-Bisu	Bradley, David. Bisu dialect vocabulary. (unpublished).
DB-Lahu	Bradley, David. 1979. Lahu dialects. (Oriental Monograph Series, No. 23) Canberra: Australian National University.
DB-Lisu	Bradley, David. 1994. A dictionary of the northern dialect of Lisu (China and southeast Asia) [Based on Xu, Mu et al. 1985]. (Pacific Linguistics Series C-126.) Canberra: Australian National University.
DB-Ph	Bradley, David. 1977. Phunoi or Côông. PSEAL 4. 5:67-98.
DB-PLolo	Bradley, David. 1979. Proto-Loloish. (Scandinavian Institute of Asian Studies Monograph Series, no. 39.) London and Malmo: Curzon Press.
DB-Ugong	Bradley, David. 1993. Questionnaire (Ugong). (unpublished).
DBK-ECD	Van Bik, David 1986. English-Chin (Haka) dictionary. Haka.

DHFRL	Dai Qingxia et al., eds. 1991. Zangmianyu shiwuzhong [Fifteen Tibeto-Burman languages]. Beijing: Yanshan Chubanshe.
DHR-IBWS	Roop, D. Haigh. 1972. An introduction to the Burmese writing system. New Haven and London: Yale University Press.
DK-Moyon	Kosha, Donald. 1990. Questionnaire (Moyon). (unpublished).
DLF-Gazhuo	Dai Qingxia, Liu Juhuang, and Fu Ailan. 1987. On the Gazhuo language of the Mongolian people of the Yunnan Province. (Yuyan Yanjiu, No. 1.)
DNW-Gloss	Watters, David and Nancy Watters. 1973. An English-Kham Kham-English glossary. Kirtipur, Nepal: SIL and Institute of Nepal and Asian Studies, Tribhuvan University.
DNW-KhamQ	Watters, David and Nancy Watters. 1989. Questionnaire (Kham). (unpublished computer file).
DQ-AL	Dai Qingxia and Cui Zhichao. 1983. A brief description of the Achang language. MZYW. 1983.3:69-80.
DQ-Amdo	Dai Qingxia. 1989. Field Notebook. (unpublished).
DQ-Bai	Dai Qingxia 1989. Questionnaire (Bai). (unpublished).
DQ-Batang	Dai Qingxia. 1989. Questionnaire (Batang). (unpublished).
DQ-Bola	Dai Qingxia. 1989. Field Notebook. (unpublished).
DQ-Dafang	Dai Qingxia. 1989. Questionnaire (Dafang). (unpublished).
DQ-Daofu	Dai Qingxia. 1989. Questionnaire (Daofu). (unpublished).
DQ-Gazhuo	Dai Qingxia. 1989. Questionnaire (Gazhuo). (unpublished).
DQ-Hani	Dai Qingxia. 1989. Questionnaire (Hani). (unpublished).
DQ-Haoni	Dai Qingxia. 1989. Questionnaire (Haoni). (unpublished).
DQ-Jiarong	Dai Qingxia. 1989. Questionnaire (Jiarong). (unpublished).
DQ-JinA	Dai Qingxia. 1989. Field Notebook. (unpublished).
DQ-JinB	Dai Qingxia. 1989. Field Notebook. (unpublished).
DQ-KarenA	Dai Qingxia. 1989. Field Notebook. (unpublished).
DQ-KarenB	Dai Qingxia. 1989. Field Notebook. (unpublished).
DQ-Langsu	Dai Qingxia. 1989. Field Notebook. (unpublished).
DQ-Lashi	Dai Qingxia. 1989. Field Notebook. (unpublished).
DQ-Lolopho	Dai Qingxia. 1989. Field Notebook. (unpublished).
DQ-Naxi	Dai Qingxia. 1989. Questionnaire (Naxi). (unpublished).
DQ-Nusu	Dai Qingxia. 1989. Questionnaire (Nusu). (unpublished).
DQ-NusuA	Dai Qingxia. 1989. Field Notebook. (unpublished).
DQ-NusuB	Dai Qingxia. 1989. Field Notebook. (unpublished).
DQ-QiangN	Dai Qingxia. 1989. Field Notebook. (unpublished).
DQ-Tujia	Dai Qingxia. 1989. Questionnaire (Tujia). (unpublished).
DQ-Xiandao	Dai Qingxia. 1989. Field Notebook. (unpublished).
DQ-Xixia	Dai Qingxia. 1989. Questionnaire (Xixia). (unpublished).
DQ-Yi (Axi)	Dai Qingxia. 1989. Questionnaire (Yi: Axi). (unpublished).

DQ-Zaiwa	Dai Qingxia. 1989. Questionnaire (Zaiwa). (unpublished).
DS-Kan	Sharma, D.D. 1988. A descriptive grammar of Kinnauri. Delhi: Mittal Publications (Studies in Tibeto-Himalayan languages 1).
DS-Kayah	Solnit, David. 1986. A grammatical sketch of Eastern Kayah (Red Karen). Ph.D. Dissertation, University of California, Berkeley.
DS-PAO	Solnit, David. 1989. Pa-O word list. ms. (electronic).
DS-Patt	Sharma, D.D. 1982. Studies in Tibeto-Himalayan linguistics: A descriptive analysis of Pattani (a dialect of Lahaul). Hoshiarpur: Vishveshvaranand Vishva Bandhu Institute of Sanskrit and Indological Studies, Panjab University.
DUN1908	Dundas W.C.M. 1908. An outline grammar of the Kachari (Dimasa) language. Shillong.
DW1971a	Watters, David E. 1971. Kham phonemic summary. Tibeto-Burman Phonemic Summaries X. Kirtipur: Summer Institute of Linguistics, Institute of Nepal and Asiatic Studies, Tribhuvan University, mimeographed
DW1971b	Watters, David E. 1971. A guide to Kham tone. A guide to tone in Nepal III. Kirtipur: Summer Institute of Linguistics, Institute of Nepal and Asiatic Studies, Tribhuvan University, mimeographed
EA-Tsh	Andvik, Eric. 1993. Tshangla verb inflections. LTBA. 16.1:75-136.
EDG1932	Edgar, J. Huston. 1932. An English-Giarung vocabulary. Journal of the West China Border Research Society. 5. Supplement.
EG-Tangut	Grinstead, Eric. 1972. Analysis of the Tangut script. (Scandinavian Institute of Asian Studies Monograph Series, no. 10.) Lund: Studentlitteratur.
EJAH-BKD	Henderson, Eugénie J. A. forthcoming. Bwe Karen dictionary. School of Oriental and African Studies, University of London.
EJAH-Hpun	Henderson, Eugénie J. A. 1986. Some hitherto unpublished material on Northern (Megyaw) Hpun. Contributions to Sino-Tibetan studies, ed. by John McCoy and Timothy Light, 101-34. Leiden: E.J. Brill.
EJAH-TC	Henderson, Eugénie J. A. 1965. Tiddim Chin: A descriptive analysis of two texts. (London oriental series 15.) London and New York: Oxford University Press.
ELS-CLL	Evans, Jonathan P., John B. Lowe, Jackson T. S. Sun. 1991. Comparative Loloish lexicon. (unpublished.)
ERH-DSLS	Hope, Edward R. 1972. The deep syntax of Lisu sentences; a transformational case grammar Ph.D. Dissertation, Australian National University.
EWC-Ao	Clarke, E.W. 1893 Ao Naga Grammar with Illustrative Phrases and Vocabulary Shillong.
FD-Bai	Dell, François. 1981. La langue Bai: phonologie et lexique [The Bai language: phonology and lexicon]. Paris: Centre de Recherches Linguistiques sur l'Asie Orientale de l'Ecole des Hautes Etudes en Sciences Sociales.
GAO1952	Gao Huanian. 1952. Yangwu Haniyu chutan [Preliminary investigation of the Yangwu Hani language]. Scholarly reports of Chung-shan University. 2:175ff.
GAO1958	Gao Huanian. 1958. Yiyu yufa yanjiu [A study of Yi grammar]. Peking: Scientific Publishing Co.

GBM-Lepcha	Mainwaring, G.B. 1898. Dictionary of the Lepcha language. Berlin: Unger Brothers.
GBS1971	Shepherd, Gary and Barbara Shepherd. 1971. Magar phonemic summary. Tibeto-Burman Phonemic Summaries VIII. Kirtipur: Summer Institute of Linguistics, Institute of Nepal and Asiatic Studies, Tribhuvan University, mimeographed
GDW-DML	Walker, George David. 1925. A dictionary of the Mikir language, Mikir-English and English-Mikir. Shillong: Assam Gov't. Press.
GEM-Ao	Marrison, G.E. 1962. Ao-English vocabulary. ms.
GEM-Chok	Marrison, G.E. 1962. English-Chokri vocabulary. ms.
GEM-CNL	Marrison, G.E. 1967. The classification of the Naga languages of north-east India. Ph.D. Dissertation, School of Oriental and African Studies, University of London. 2 volumes.
GEM-Kon	Marrison, G.E. 1962. Konyak-English vocabulary. ms.
GEM-Liang	Marrison, G.E. 1964. English-Liangmai vocabulary. ms.
GEM-Mao	Marrison, G.E. 1965. English-Mao vocabulary. ms.
GEM-Mzieme	Marrison, G.E. 1965. English-Mzieme vocabulary. ms.
GEM-Nruan	Marrison, G.E. 1965. English-Nruanghmei vocabulary. ms.
GEM-Phom	Marrison, G.E. 1965. English-Phom vocabulary. ms.
GEM-Sang	Marrison, G.E. 1963. Sangtam-English vocabulary. ms.
GEM-Yimch	Marrison, G.E. 1965. English-Yimchungrü vocabulary. ms.
GEM-Zeme	Marrison, G.E. 1965. English-Zeme vocabulary. ms.
GHL-PPB	Luce, G. H. 1985. Phases of Pre-Pagán Burma languages and history, Vol. 2. School of Oriental and African Studies. Oxford: Oxford University Press.
GJ-Batang	Jumian, Gesang. 1989. Phonological analysis of Batang Tibetan. Budapest: Acta Orientalia Scientiarum. 43.2-3:331-358.
GLO1969	Glover, Warren W. 1969. Gurung phonemic summary. Tibeto-Burman phonemic summaries I. Kirtipur: SIL, Tribhuvan University.
GLO1970b	Glover, Warren W. 1970. Gurung texts. OPWSTBL 3, ed. by Hale and Pike III.1-31. Urbana, IL: University of Illinois.
GLO1970c	Glover, Warren W. 1970. Gurung segmental synopsis. OPWSTBL 3, ed. by Hale and Pike, I.211-236. Urbana, IL: University of Illinois.
GOR1969	Gordon, Kent. 1969. Sherpa phonemic summary. Tibeto-Burman Phonemic Summaries II. Kirtipur: Summer Institute of Linguistics, Institute of Nepal and Asiatic Studies, Tribhuvan University, mimeographed
GOR1970	Gordon, Kent. 1970. Sherpa tone and higher levels. OPWSTBL 3, ed. by Hale and Pike I.186-206. Urbana, IL: University of Illinois.
GOW1972	Gowda, K.S. Gurubasave. 1972. Ao Naga phonetic reader. (Phonetic Reader Series, 7.) Mysore: CIIL.
GS1970	Gordon, Kent and Burkhard Schoettelndreyer. 1970. Sherpa segmental synopsis. HP I.345-367.
GSR	Karlgren, Bernhard. 1957. Grammata serica recensa. (reprinted from Museum of Far Eastern Antiquities, Bulletin 29.) Göteborg, Sweden: Elanders Boktryckeri Aktiebolag.

HAJ-TED Jäschke, Heinrich August. 1881. A Tibetan-English dictionary, with special reference to the prevailing dialects. London: Routledge and Kegan Paul.

HAM1900 Hamilton, Robert Clifton. 1900. An outline grammar of the Dafla langague as spoken by the tribes immedieately south of the Apa Tanang country. Shillong.

HAR1969 Hari, Maria. 1969. Thakali phonemic summary. Tibeto-Burman phonemic summaries III. Kirtipur: SIL, Tribhuvan University.

HAR1970c Hari, Maria. 1970. A guide to Tamang tone. A guide to tone in Nepal I. Kirtipur: Summer Institute of Linguistics, Institute of Nepal and Asiatic Studies, Tribhuvan University, mimeographed

HAR1971c Hari, Maria. 1971 A guide to Thakali tone. Pacific Linguistics A 29:23-78

HG1970 Hale, Austin and Warren W. Glover. 1970. A note on glides and syllabicity and tone in Gurung. OPWSTBL 3, ed. by Hale and Pike I.45-51. Urbana, IL: University of Illinois.

HM-Prak Hoshi Michiyo. 1984. A Prakaa vocabulary - a dialect of the Manang language. Anthropological and Linguistic Studies of the Gandaki Area in Nepal II. (Monumenta Serindica No. 12.) Tokyo: ILCAA.

HOD1847a Hodgson, Brian Houghton. 1847a. On the aborigines of the sub-Himalayas. JASB. 16:1235-44.

HOD1848 Hodgson, Brian Houghton. 1848. On the Chépáng and Kúsúnda tribes of Nepal. JASB. 17.2:650-8.

HOD1857 Hodgson, Brian Houghton. 1857. Comparative vocabulary of the several languages (dialects) of the celebrated people called Kirântis. JASB. 26.5:333-71.

HOU1895 Houghton, Bernhard. 1895. Southern Chin vocabulary (Minbu district). JRAS. (1895):727-37.

HP1970 Hale, Austin and Kenneth L. Pike (eds.) 1970. Tone systems of Tibeto-Burman languages of Nepal Parts I-IV. (OPWSTBL 3.) Urbana, IL: University of Illinois.

HS1972 Hale, Austin and Iswaranand Sresthacharya. 1972. Toward a revision of Hale's roman Newari orthography. ms.

HSCH1970 Schoettelndreyer, Heiderose. 1970. A guide to Sherpa tone. A guide to tone in Nepal V. Kirtipur: Summer Institute of Linguistics, Institute of Nepal and Asiatic Studies, Tribhuvan University, mimeographed

HTP1970 Hari, Maria, Doreen Taylor, and Kenneth L. Pike. 1970. Tamang tone and higher levels. OPWSTBL 3, ed. by Hale and Pike I.82-124. Urbana, IL: University of Illinois.

HU-Hani Hu Tan and Dai Qingxia. 1964. Haniyu yuanyin de songjin [Tense and lax vowels in Hani]. Zhongguo Yuwen [Chinese language and writing], Beijing. 128.1:76-87.

HUT1929 Hutton, John Henry. 1929. Outline of Chang grammar. JASB n.s. 15:1-101.

ILH-PCAH Hansson, Inga-Lill. 1982. A phonological comparison of Akha and Hani. LTBA. 7.1:63-115.

ILH-PL Hansson, Inga-Lill. 1989. A comparison of Akha, Hani, Khatu, and Pijo. LTBA. 12.1:1-91.

IMS-Aka	Simon, Ivan Martin. 1970. Aka language guide. Shillong: North-East Frontier Agency.
IMS-Apatani	Simon, Ivan Martin. 1972. An Introduction to Apatani. Shillong: Research Department, Arunachal Pradesh.
IMS-HMLG	Simon, Ivan Martin. 1976. Hill Miri language guide. Shillong: Philological Section, Research Dept., Government of Arunachal Pradesh.
IMS-Miji	Simon, Ivan Martin. 1979. Miji language guide. Shillong: Directorate of Research (Philological Section) Government of Arunachal Pradesh.
INT	Xu Lin and Mu Yuzhang et al., eds. 1985. Lisu-Chinese dictionary. Kunming: Yunnan Nationalities Publishing House.
ISC-LNED	Chemjong, Imam Singh. 1962. Limbu-Nepali-English dictionary. Kathmandu: Royal Nepal Academy.
JAM-AHWST	Matisoff, James A. 1985. Out on a limb: arm, hand and wing in Sino-Tibetan. Linguistics of the Sino-Tibetan area: The state of the art, ed. by Graham Thurgood et al., 421-425. (Pacific Linguistics Series C, No.87). Canberra: Australian National University.
JAM-DL	Matisoff, James A. 1988. The dictionary of Lahu. (University of California Publications in Linguistics, v. 111.) Berkeley, Los Angeles, London: University of California Press.
JAM-Ety	Matisoff, James A. 1987. Body Part Card File. (unpublished.)
JAM-GSTC	Matisoff, James A. 1985. God and the Sino-Tibetan copula, with some good news concerning selected Tibeto-Burman rhymes. Journal of Asian and African Studies (Tokyo Foreign Languages University). 29:1-81.
JAM-IWBRD	Matisoff, James A. 1976. Introduction to the Written Burmese rhyming dictionary. LTBA. 3.1:iii-x.
JAM-Lbh	Matisoff, James A. 1969. Lahu bilingual humor. ALH. 12.2:171-206.
JAM-LDTB	Matisoff, James A. 1986. The languages and dialects of Tibeto-Burman: and alphabetic/genetic listing, with some prefatory remarks on ethnonymic and glossonymic complications. Contributions to Sino-Tibetan studies, ed. by John McCoy and Timothy Light, 1-75. Leiden: E.J. Brill.
JAM-LPLB	Matisoff, James A. 1969. Lahu and Proto-Lolo-Burmese. OPWSTBL 1, ed. by Alton L. Becker, 117-221. Ann Arbor, MI: University of Michigan.
JAM-MLBM	Matisoff, James A. 1978. Mpi and Lolo-Burmese microlinguistics. Monumenta Serindica (ILCAA, Tokyo). 4:1-36.
JAM-Quo	Matisoff, James A. 1979. Problems and progress in Lolo-Burmese: quo vadimus? LTBA. 4.2:11-43.
JAM-Rong	Matisoff, James A. 1994. Rongmei elicitation. (unpublished).
JAM-SK	Matisoff, James A. 1993. Sangkong of Yunnan: secondary "verb pronominalization" in Southern Loloish. LTBA. 16.2:123-142.
JAM-TIL	Matisoff, James A. 1983. Translucent insights: a look at Proto-Sino-Tibetan through Gordon H. Luce's comparative word-list. Bulletin of the School of Oriental and African Studies, University of London. 46.3:462-76.
JAM-TJLB	Matisoff, James A. 1974. The tones of Jinghpaw and Lolo-Burmese: Common origin vs. independent development. ALH. 15.2:153-212.

JAM-TSR	Matisoff, James A. 1972. The Loloish tonal split revisited. (Research Monograph No. 7.) Berkeley: Center for South and Southeast Asian Studies, University of California, Berkeley.
JAM-VCIL	Matisoff, James A. 1969. Verb concatenation in Lahu: the syntax and semantics of 'simple' juxtaposition. ALH. 12.1:69-120.
JAM-VSTB	Matisoff, James A. 1978. Variational semantics in Tibeto-Burman: The 'organic' approach to linguistic comparison. (OPWSTBL 6.) Philadelphia: Institute for the Study of Human Issues.
JCD	Dai Qingxia, Xu Xigen, Shao Jiacheng, Qiu Xiangkun. 1983. Jing-Han Cidian -- Jinghpo Miwa Ga Ginsi Chyum -- Jinghpo-Chinese Dictionary. Yunnan Nationalities Press.
JDS-Lahauli	Singh, J. D. 1989. Lahauli verb inflection. LTBA. 12.2:41-50.
JF-HLL	Fraser, James Outram. 1922. Handbook of Lisu (Yawyin) language. Rangoon: Superintendent Government Printing.
JFN-DMT	Needham, Jack Francis. 1886. A few Digaro (Taroan), Miju (M'ju) and Tibetan words.... Shillong.
JHL-AM	Lorrain, J. Herbert. 1907. A dictionary of the Abor-Miri language, with illustrative sentences and notes. Shillong: Eastern Bengal and Assam Secretariat Printing Office.
JHL-Lu	Lorrain, J. Herbert. 1940. Dictionary of the Lushai language. (Bibliotheca Indica 261.) Calcutta: Royal Asiatic Society of Bengal.
JHN-Moshang	Needham, J.H. 1897. A collection of a few Moshang Naga words. Shillong.
JK-Dh	King, John. 1994. Dhimal body parts. (personal communication).
JK-Dhimal	King, John. 1994. Picking up where Hodgson left off: further notes on Dhimal. LTBA. 17.2:121-132.
JML-Lushai	Lloyd, J.M. 1956. English-Lushai Dictionary. Aijal.
JO-PB	Okell, John. 1971. K clusters in Proto-Burmese. STC 4.
JP-Idu	Pulu, Jatan. 1978. Idu phrase book. Shillong: The Director of Information and Public Relations, Arunachal Pradesh.
JPM-Ao	Mills, J.P. 1926. The Ao Nagas. London.
JPM-Mong	Mills, J.P. n.d. Mongsen Ao Word List Typescript.
JPM-Reng	Mills, J.P. 1937. The Rengma Nagas. London.
JS-Amdo	Sun, Jackson. 1985. Amdo Tibetan. M.A. Thesis. ms.
JS-Ch	Sun, Jackson. 1985. Chinese Glosses, excerpted. M.A. Thesis. ms.
JS-HCST	Sun, Jackson. 1993a. A historical-comparative study of the Tani (Mirish) branch in Tibeto-Burman. Ph.D. Dissertation, University of California, Berkeley.
JS-Mawo	Sun, Jackson. 1986?. Qiang Mawo. ms.
JS-Tani	Sun, Jackson. 1993b. Tani synonym sets. ms. (electronic).
JS-Tib	Sun, Jackson. 1985. Tibetan glosses, excerpted. M.A. Thesis. ms.
JTR-GDK	Joshi, Tika Ram. 1909. A grammar and dictionary of Kanawari. JASB n.s. 5, extra no. 2.

JUI1948	Jui, I-fu. 1948. Ji Lisu yuyin jian lun suowei Lisuwen [On the sounds of the Lisu language with remarks on the Lisu script]. AS/BIHP. 17:303-26.
JZ-Achang	Dai Qingxia and Cui Zhizhao, eds. 1985. Achangyu jianzhi [Brief description of the Achang language]. Beijing: Nationalities Press.
JZ-Bai	Xu Lin and Zhao Yansun, eds. 1984. Baiyu jianzhi [Brief description of the Bai language]. Beijing: Nationalities Press.
JZ-CLMenba	Zhang Jichuan, ed. 1986. Cangluo Menbayu jianzhi [Brief description of the Cangluo Menba language]. Beijing: Nationalities Press.
JZ-CNMenba	Lu Shaozun, ed. 1986. Cuona Menbayu jianzhi [Brief description of the Cuona Menba language]. Beijing: Nationalities Press.
JZ-Dulong	Sun Hongkai, ed. 1982. Dulongyu jianzhi [Brief description of the Dulong language]. Beijing: Nationalities Press.
JZ-Hani	Li Yongsui and Wang Ersong, eds. 1986. Haniyu jianzhi [Brief description of the Hani language]. Beijing: Nationalities Press.
JZ-Jingpo	Liu Lu, ed. 1984. Jingpozu yuyan jianzhi (Jingpoyu) [Brief description of the Jingpo language of the Jingpo people]. Beijing: Nationalities Press.
JZ-Jinuo	Gai Xingzhi, ed. 1986. Jinuoyu jianzhi [Brief description of the Jinuo language]. Beijing: Nationalities Press.
JZ-Lahu	Chang Hong'en et al., eds. 1986. Lahuyu jianzhi [Brief description of the Lahu language]. Beijing: Nationalities Press.
JZ-Lisu	Xu Lin, Mu Yuzhang, Gai Xingzhi, eds. 1986. Lisuyu jianzhi [Brief description of the Lisu language]. Beijing: Nationalities Press.
JZ-Luoba	Ouyang Jueya, ed. 1985. Luobayu jianzhi [Brief description of the Luoba language]. Beijing: Nationalities Press.
JZ-Naxi	He Jiren and Jiang Zhuyi, eds. 1985. Naxiyu jianzhi [Brief description of the Naxi language]. Beijing: Nationalities Press.
JZ-Nusu	Sun Hongkai and Liu Lu, eds. 1986. Nuzu yuyan jianzhi (Nusuyu) [Brief description of the Nusu language of the Nu people]. Beijing: Nationalities Press.
JZ-Pumi	Lu Shaozun, ed. 1983. Pumiyu jianzhi [Brief description of the Pumi language]. Beijing: Nationalities Press.
JZ-Qiang	Sun Hongkai, ed. 1981. Qiangyu jianzhi [Brief description of the Qiang language]. Beijing: Nationalities Press.
JZ-Tujia	Tian Desheng, He Tianzhen et al., eds. 1986. Tujiayu jianzhi [Brief description of the Tujia language]. Beijing: Nationalities Press.
JZ-Yi	Chen Shilin, Bian Shiming, Li Xiuqing, eds. 1985. Yiyu jianzhi [Brief description of the Yi language]. Beijing: Nationalities Press.
JZ-Zaiwa	Xu Xijian and Xu Guizhen, eds. 1984. Jingpozu yuyan jianzhi (Zaiwayu) [Brief description of the Zaiwa language of the Jingpo people]. Beijing: Nationalities Press.
KAR1972	Karapurkar, Pushpa. 1972. Tripuri phonetic reader. (Phonetic Reader Series, 5.) Mysore: CIIL.
KDG-Daf	Das Gupta, K. 1969. Dafla language guide. Shillong: Research Department, North-East Frontier Agency.

KDG-ICM	Das Gupta, K. 1968. An introduction to Central Monpa. Shillong: Philology Section, Research Department, North-East Frontier Agency.
KDG-IGL	Das Gupta, K. 1963. An introduction to the Gallong language. Shillong: Philological Section, Research Department, North-East Frontier Agency.
KDG-INL	Das Gupta, K. 1971. An introduction to the Nocte language. Shillong: Philological Section, Research Department, North-East Frontier Agency.
KDG-Tag	Das Gupta, K. 1983. An outline on Tagin language. Directorate of Research, Govt. of Arunachal Pradesh.
KE-Cham(2)	Ebert, Karen. 1989?. Questionnaire (Chamling). (unpublished).
KEI1873	Keith, T.J. 1873. Dictionary of the Garo language, Garo and Bengali-English. Jalpaiguri.
KHG-Mikir	Grüssner, Karl-Heinz. 1978. Arleng Alam, die Sprache der Mikir: Grammatik und Texte. Wiesbaden: Franz Steiner.
KOS1976	Koshal, Sanyukta. 1976. Ladakhi phonetic reader. (Phonetic Reader Series, 18.) Mysore: CIIL.
KRI1980	Krishan, Shree. 1980. Thadou: a grammatical sketch. Calcutta: Anthropological Survey of India, Gov't. of India.
LB-LC	Bernot, Lucien. 1967. Les Çak. Paris: Centre National de la Recherche Scientifique.
LCP-Trung	Lo Ch'ang-p'ei. 1945. A preliminary study of the Trung language of Kung Shan. Harvard Journal of Asiatic Studies. 8: 343-8.
LI1980	Li Fangkuei. 1980. Shanggu yin yanjiu [Studies on Old Chinese pronunciation]. Beijing: Shangwu Yinshuguan.
LI1981	Li Min and Ma Ming. 1981. Liangshan Yiyu yufa [Grammar of Liangshan Yi]. Sichuan People's Press.
LL-AAM	Löffler, Lorenz G. 1966. L'alliance asymétrique chez les Mru (Pakistan orientale). Homme 6.3:68-80.
LL-CMST	Löffler, Lorenz G. 1966. The contribution of Mru to Sino-Tibetan linguistics. ZDMG 116.1:118-59.
LL-CS	Löffler, Lorenz G. 1964. Chakma und Sak: ethnolinguistische Beiträge sur Geschichte eines Volkes. Internationale Archive der Ethnographie. 50.1:72-115.
LL-MSTC	Li Lin-ts'an, Chang K'un and Ho Ts'ai. 1967. Moso sound and tone charts. Symposium on Historical, Archeological and Linguistic Studies on Southern China, Southeast Asia and the Hong Kong Region, F.S. Drake, ed., 90-100. Hong Kong: Hong Kong University Press.
LL-PRPL	Löffler, Lorenz G. 1985. A preliminary report on the Paangkhua language. Linguistics of the Sino-Tibetan Area: The state of the art, ed. by Thurgood, Graham et al., 279-286. (Pacific Linguistics Series C, No. 87.) Canberra: Australian National University.
LMZ-AhiQ	Luo Meizhen. 1990?. Questionnaire (Yi: Ahi). (unpublished).
LNC-DTL	Chakravarty, L.N. et al. 1963. A dictionary of the Taraon language. Shillong: Philology Section, Research Department, North-East Frontier Agency.
LSI	Grierson, Sir George Abraham (ed.) 1903-28. Linguistic survey of India. Calcutta: Office of the Superintendent of Government Printing.

LSTA	Thurgood, Graham, James A. Matisoff, and David Bradley, eds. 1985. Linguistics of the Sino-Tibetan area: The state of the art. Papers presented to Paul K. Benedict for his 71st birthday. (Pacific Linguistics Series C, No. 87.) Canberra: Australian National University.
LXR-Jiarong	Lin Xiangrong. 1993. Jiarongyu yanjiu [Research on rGyarong]. Chengdu: Sichuan Nationalities Press.
LYS-Sangkon	Li Yongsui. 1991. Mian-Yi yuyan diaocha de xin shouhuo: Sangkongyu [A new harvest from research into Burmese-Yi: the Sangkong language]. Presented at the Fifth International Yi-Burmese Conference. Xichang Sichuan. Beijing: Institute of Nationality Studies, Chinese Academy of Social Sciences.
MAH1969	Hale, Margrit and Austin Hale. 1969. Newari phonemic summary. Tibeto-Burman Phonemic Summaries V. Kirtipur: Summer Institute of Linguistics, Institute of Nepal and Asiatic Studies, Tribhuvan University, mimeographed.
MAL	Malla, Kamal P. 1985. The Newari language: A working outline. (Monumenta Serindica No. 14.) Tokyo: ILCAA.
MB-Lal	Balawan, M., S.D.B., M.Sc. 1965. A first Lalung dictionary, with the corresponding words in English and Khasi. Shillong.
MCC1887	McCabe, Robert Blair. 1887. Outline grammar of the Angami Naga language, with a vocabulary and illustrative sentences. Calcutta.
MEG1988	Megu, Arak. 1988. Bori phrase book. Itanagar: Directorate of Research, Government of Arunachal Pradesh.
MEG1990	Megu, Arak. 1990. Bokar language guide. Itanagar: Directorate of Research, Government of Arunachal Pradesh.
MF-PhnQ	Ferlus, Michel. 1991. Questionnaire (Phunoi). (unpublished).
MIS1905	Mason, M.C. et al. 1905. English-Garo dictionary. Shillong.
MM-Dzong	Mazaudon, Martine. 1985. Dzongkha number systems. Southeast Asian Linguistic Studies Presented to A-G. Haudricourt, ed. by Suriya Ratanakul et al. Bangkok: Mahidol University.
MM-K78	Mazaudon, Martine. 1978. Consonantal mutation and tonal split in the Tamang sub-family of Tibeto-Burman. Kailash. 6.3:157-79.
MM-PTPK	Mazaudon, Martine. 1985. Proto-Tibeto Burman as a two-tone language? Some evidence from Proto-Tamang and Proto-Karen. Linguistics of the Sino-Tibetan area: The state of the art, ed. by Graham Thurgood, et al., 201-229. (Pacific Linguistics, Series C, No. 87). Canberra: Australian National University.
MM-TamRisQ	Mazaudon, Martine. 1991. Questionnaire (Tamang: Risiangku). (unpublished).
MM-Thesis	Mazaudon, Martine. 1994. Problèmes de comparatisme et de reconstruction dans quelques langages de la famille tibéto-birmane. Ph.D. Dissertation, Université de la Sorbonne Nouvelle.
MM1973	Mazaudon, Martine. 1973. Tibeto-Burman tonogenetics. LTBA. 3.2:1-123.
MOR1963	Morse, Robert H. 1963. Phonology of Rawang. Anthropological Linguistics. 5.4:17-41.
MVS-Grin	Sofronov, M.V. c1978. Annotations to analysis of the Tangut script. Personally entered into glossary of Grinstead 1972 [EG-Tangut].

MXL-Lolo	Ma Xueliang. 1948. Luowen "Zuoji, xianyao, gongshengjing" yizhu [Annotated translation of the Lolo book of rites, cures, and sacrifices]. AS/BIHP. 20:577-666.
MXL-Sani	Ma Xueliang. 1951. Sani Yiyu yanjiu [Researches in the Yi language of Sani]. (Chinese Academy of Sciences linguistics monographs 2.) Shanghai.
MXL-SaniQ	Ma Xueliang. 1989?. Field Notebook. (unpublished).
NEFA-PBI	Anonymous. 1962. A phrase book in Idu. Shillong: Philological Section, Research Dept., North-East Frontier Agency.
NJA-Thulung	Allen, N.J. 1975. Sketch of Thulung grammar. (East Asian Papers no.6.) Ithaca: Cornell University China-Japan Program.
NKR-Bant	Rai, Novel Kishore. 1985. A descriptive study of Bantawa. Poona: Deccan College Post-Graduate and Research Institute.
NM-PTChin	Mundhenk, N.A. 1968. Words and reconstructions: Proto Lushai-Chin. ms.
NPB-ChanQ	Noonan, M., W. Pagliuca, and R. Bhulanja. 1992. Questionnaire (Chantyal). (unpublished).
NT-Bisu	Nishida, Tatsuo. 1966. Bisugo no kenkyu: Taikoku okeru Bisu-zoku no gengo no yobiteki ni kenkyu [A preliminary study of the Bisu language -- a language of Northern Thailand discovered by us]. TAK. 4.1:65-87.
NT-CS	Nishida, Tatsuo. 1966-67. A comparative study of the Bisu, Akha, and Burmese languages, Parts I and II. TAK. 4.3 (1966):42-68; 4.5 (1967):52-68.
NT-SGK	Nishida, Tatsuo. 1964, 1966. Seikago no kenkyu [A study of the Hsi-Hsia language: reconstruction of the Hsi-Hsia language and decipherment of the Hsi-Hsia script]. Japan: Zauho Kaukokai. 2 volumes.
NT-Tosu	Nishida, Tatsuo. 1973. Tosu yakugo no kenkyu [A study of the Tosu-Chinese vocabulary Tosu I-Yu]. Kyoto: Shokado.
OH-DKL	Hanson, Ola. 1906. A dictionary of the Kachin language. Rangoon. (Reprint 1954, 1966, Rangoon, Baptist Board of Publications).
OH-GKL	Hanson, Ola. 1896. A grammar of the Kachin language. Rangoon: American Baptist Mission Press.
OT-KnsI	Ono, Toru. 1965. Kyotsu-kuki-chin-go no saikosei I: Goto shi in [The reconstruction of Proto-Kuki-Chin I: initial consonants]. Gengo Kenkyu. 47.8-20.
PB-Bisu	Beaudouin, Patrick. 1988. Glossary English-French-Bisu; Bisu-English-French. Nice, France: Section de Linguistique. U.E.R. Lettres. Université de Nice.
PB-MB	Beaudouin, Patrick. 1991. Une monographie du Bisu. Nouveau Doctorat es Sciences du Langage, Universite de Nice-Sophia Antipolis.
PB-TCV	Bhaskararao, Peri. 1994. Tiddim Chin verbs and their alternants. Journal of Asian and African Studies Nos. 46-47.
PE1933	Pe Maung Tien. 1933. The dialect of Tavoy. JBRS. 23:31-2.
PEA1872	Peal, S.E. 1872. Vocabulary of the Banpara Nagas. JASB. 41:29-30.
PEA1873	Peal, S.E. 1873. Vocabulary of the Banpara Nagas. JASB. 42, Appendix:xxx-xxxvi.
PHI1904	Phillips, Elnathan Gooding. 1904. Outline grammar of the Garo language. Shillong.

PKB-KLH	Benedict, Paul K. 1979. Four forays into Karen linguistic history. LTBA. 5.1:1-35.
PKB-WBRD	Benedict, Paul K. 1976. Rhyming dictionary of Written Burmese. LTBA. 3.1:1-93.
PL-AED	Lewis, Paul. 1968. Akha-English dictionary. (Data Paper 70, Linguistics series III.) Ithaca, NY: Cornell U. Southeast Asia Program.
PL-AETD	Lewis, Paul. 1989. Akha-English-Thai dictionary. Chiang Rai: Development & Agricultural Project for Akha.
PT-Kok	Tripuri, Prashanta and Dan Jurafsky. 1988. Kokborok dictionary. ms.
RAL-GDL	Lorrain, Reginald Arthur. 1951. Grammar and dictionary of the Lakher or Mara language. Gauhati: Department of Historical and Antiquarian Studies, Government of Assam.
RAN1975	Rangan, K. 1975. Balti phonetic reader. (Phonetic Reader Series, 17.) Mysore: CIIL.
RASD-TRB	Rai, Agam Simg Devasa. 1944. Thulung Rai bhasa [Thulung Rai language]. Darjeeling.
RAV1974	Ravindran, N. 1974. Angami phonetic reader. (Phonetic Reader Series, 10.) Mysore: CIIL.
RB-GB	Burling, Robbins. 1992. Garo (Bangladesh dialect) semantic dictionary. (unpublished).
RB-GG	Burling, Robbins. 1961. A Garo grammar. (Deccan College Monograph Series 25.) Poona: Deccan College Postgraduate and Research Institute.
RB-PB	Burling, Robbins. 1959. Proto-Bodo. Language. 35:433-53.
RB-PKR	Burling, Robbins. 1969. Proto-Karen: a reanalysis. OPWSTBL 1, ed. by Alton L. Becker, 1-116. Ann Arbor, MI: University of Michigan.
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RJL-DPTB	LaPolla, Randy J. 1987. Dulong and Proto-Tibeto-Burman. LTBA. 10.1:1-43.
RLS-PDMN	Schmidt, Ruth Laila, ed. 1993. A practical dictionary of modern Nepali. Delhi: Ratna Sagar.
RLT-IAD	Turner, R.L. 1966. A comparative dictionary of the Indo-Aryan languages. London: Oxford University Press.
ROB1849	Robinson, W. 1849. Notes on the languages spoken by various tribes inhabiting the valley of Assam JASB. 18:323-330 and 342-349.
ROC1937	Rock, Joseph F. 1937. Studies in Na-khi literature. Bulletin de l'Ecole Français d'Extrême-Orient. 37:1-119.
ROC1963	Rock, Joseph F. 1963. A Na-khi English encyclopedic dictionary. (Serie Orientale Roma, XXVII.) Rome: Istituto Italiano per il Medio ed Estremo Oriente.

ROE1933	Roerich, Georges de. 1933. The Tibetan dialect of Lahul. Journal of Urusvati Himalayan Research Institute. 3:219.
RPHH-Kul	Rai, Krishna Prasad, Anna Holzhausen, and Andreas Holzhausen. 1975. Kulung body part index from: Kulung-Nepali-English glossary. Kathmandu: SIL and Institute of Nepal and Asian Studies, Tribhuvan University.
SAV1908	Savidge, Fred W. 1908. A grammar and dictionary of the Lakher languages. Allahabad.
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SD-MPD	Srinuan Duanghom. 1976. An Mpi dictionary. ed. by Woranoot Pantupong, (Working papers in phonetics and phonology 1). Bangkok: Indigenous Languages of Thailand Research Project, Central Institute of English Language.
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SHA1966-73	Shafer, Robert. 1966-73. Introduction to Sino-Tibetan. 5 parts. Wiesbaden: Otto Harrassowitz.
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SHK-ErgNQ	Sun Hongkai. 1991. Questionnaire (Ergong: Northern). (unpublished).
SHK-ErsCQ	Sun Hongkai. 1991. Questionnaire (Ersu). (unpublished).
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SHK-rGNQ	Sun Hongkai. 1991. Questionnaire (rGyarong: Northern). (unpublished).
SHK-rGNWQ	Sun Hongkai. 1991. Questionnaire (rGyarong: Northwest). (unpublished).
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SRE1976	Sreedhar, M.V. 1976. Sema phonetic reader. (Phonetic Reader Series, 15.) Mysore: CIIL.
SRS-PSS	Sharma, S.R. 1979. Phonological structure of Spiti. LTBA. 4.2:83 110.
STC	Benedict, Paul K. 1972. Sino-Tibetan : A conspectus. (Princeton-Cambridge Series in Chinese Linguistics, #2.) New York: Cambridge University Press.
STE-Ashö	Stern, Theodore. n.d. Ashö (Sandoway) paradigms, texts, vocabulary, and tape recordings of texts. Eugene, Oregon: BSTL.
STE-Lente	Stern, Theodore. n.d. Lente paradigms, texts, and vocabulary; Laizo word lists and some additional data; Zanniat paradigms, one text, vocabulary, and tape recordings. Eugene, Oregon: BSTL.
STE-Zo	Stern, Theodore. n.d. Zo paradigms, texts, vocabulary, and tape recordings of texts. Eugene, Oregon: BSTL.
STE1955	Stern, Theodore. 1955. A provisional sketch of Sizang (Siyin) Chin. Eugene, Oregon: State Museum of Anthropology.
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STI1866	Stilson, Lyman. 1866. Brief notice of the Kemi language spoken by a tribe in Arakan, farther India. JAOS. 8:213-26.
STP-ManQ	Sharma, S.R. 1991b. Questionnaire (Manchati). (unpublished).

SVD-Dum	Driem, Sjors van. 1993. A grammar of Dumi. (Mouton Grammar Library 10.) Berlin, New York: Mouton de Gruyter.
SVD-Lim	Driem, Sjors van. 1987. A grammar of Limbu. (Mouton Grammar Library 4.) Berlin, New York, Amsterdam: Mouton de Gruyter.
SY-KhözhaQ	Yabu, Shiro. 1994. Questionnaire (Khözha). (unpublished).
T-KomRQ	Toba, Sueyoshi and Allen Kom. 1991. Questionnaire (Kom Rem). (unpublished).
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TBL	Dai Qingxia et al. 1992. A Tibeto-Burman lexicon. Beijing: Central Institute of Minorities.
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TC-list	Chhangte, Thangi. 1992. Nishi (Dafla) word list. ms.
TC-phon	Chhangte, Thangi. 1992. Phonology of some Nishi (Dafla) dialects. Berkeley: Paper presented to the 25th international conference on Sino-Tibetan languages and linguistics.
THI1972	Thirumalai, M.S. 1972. Thaadou phonetic reader. (Phonetic reader series, 6.) Mysore: CIIL.
THO1980	Thoudam, Purna C. 1980. Grammaticality and non-meaning phrases in Meiteiron. STC 13.
TK-Yakha	Kohn, Tamara. 1990?. Questionnaire (Yakha). (unpublished).
TT-Mising	Taid, Tabu. 1987. Mising morphophonemics LTBA. 10.1:138-46.
VIA1909	Vial, Paul. 1909. Dictionnaire français-lolo, dialecte gni.... Hong Kong.
VN-AngQ	Nienu, Vikuosa. 1990. Questionnaire (Angami Naga). (unpublished).
VN-ChkQ	Nienu, Vikuosa. 1990. Questionnaire (Chokri). (unpublished).
VN-LothQ	Nienu, Vikuosa. 1990. Questionnaire (Lotha). (unpublished).
VS-GBL	Schwerli, Verena. 1979. A grammar of the Bawm language. ms.
WAH-Sani	Wu Zili, Ang Zhiling, Huang Jianmin. 1984. Yi-Han jianming cidian [Abridged Yi-Chinese dictionary]. Yunnan Nationalities Press.
WAL1948	Walker, G.E.D. 1948. Outline grammar of a few Moshang Naga words Shillong.
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WHB-OC	Baxter, William. 1992. A handbook of Old Chinese phonology. (Trends in Linguistics. Studies and Monographs 64.) Berlin, New York: Mouton de Gruyter.
WIL1869	Williamson, W.J. 1869. A vocabulary of the Garo and Konch dialects. JASB. 38.1:14-20.
WIT-Lotha	Witter, W.E. 1888. Outline Grammar of the Lotha Naga Language Calcutta.

WM-Cha	McCulloch, W. 1859. Account of the Valley of Munnipore and of the hill tribes, with a comparative vocabulary of the Munnipore and other languages. (Selections from the records of the Gov't of India (Foreign Department) 27.) Calcutta: Bengal Printing Co.
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WP-Mg	Pettigrew, William. 1912. Manipuri (Mitei) grammar with illustrative sentences... Allahabad: Pioneer Press.
WP-TNgd	Pettigrew, William. 1918. Tangkhul Naga grammar and dictionary (Ukhrul dialect) with illustrative sentences. Shillong: Assam Secretariat Printing Office.
WSC-SH	Coblin, Weldon South. 1986. A sinologist's handbook of Sino-Tibetan lexical comparisons. (Monumenta Serica Monograph Series, Vol. 18.) Nettetal: Steyler Verlag.
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WU1993	Wu Zili. 1993. Yunnan Funing Mo'anghua chutan [A preliminary study of Mo'ang speech in Funing County, Yunnan Province]. MZYW. 1993.2:53-63.
WW-Bant	Rai, Novel Kishore, Tikka Ram Rai, and Werner Winter. 1984. A tentative Bantawa dictionary. ms.
WW-Cham	Winter, Werner. 1985. Materials towards a dictionary of Chamling: I. Chamling-English; II. English-Chamling. Based on data collected by Dhan Prasad Rai. Preliminary Version. Kiel: Linguistic Survey of Nepal.
WZL-Gasu	Wu Zili. 1994. Yunnansheng Guangnanxian Gasuhua chutan [A preliminary study of Gasu speech in Guangnan County, Yunnan Province]. MZYW. 1994.2.
YC-FAPL	Yüan Chia-hua. 1953. Axi minzuge ji qi yuyan [The folksongs of the Ahi people and their language]. Peking: Chinese Scientific Institute, Linguistics Research Department.
YC-Woni	Yüan Chia-hua. 1947. Ershan Woniyu chutan [Preliminary investigation of the Woni language of Erh-shan]. Tianjin: Publ. of the Frontier People's Culture Department, vol. 4.
YHJC-Sani	Wu Zili, Ang Zhiling, Huang Jianmin. 1984. Yi-Han jianming cidian [Abridged Yi-Chinese dictionary]. Yunnan Nationalities Press.
YN-Gyar	Nagano, Yasuhiko. 1978. Body Part terms of the rGyarong Tsangla dialect. ms.
YN-HSJIP	Nagano, Yasuhiko. 1979. A historical study of rGyarong initials and prefixes. LTBA. 4.2:44-68.
YN-HSJR	Nagano, Yasuhiko. 1979. A historical study of rGyarong rhymes. LTBA. 5.1:37-47.
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YN-Man	Nagano, Yasuhiko. 1984. A Manang glossary. Anthropological and Linguistic Studies of the Gandaki Area in Nepal II. (Monumenta Serindica No. 12.) Tokyo: ILCAA.

YS-Lash	Yabu, Shiro. 1987. The Lashi language of Burma: a brief description. Burma and Japan; Basic Studies on their Cultural and Social Structure. The Burma Research Group, (ed.) Tokyo: Tokyo University of Foreign Studies.
YS-Zaiwa	Yabu, Shiro. 1982. Atsuigo kiso goi shuu [A classified dictionary of the Atsi or Zaiwa language (Sadon dialect) with Atsi, Japanese and English indexes]. (Asian & African Lexicon, 13.) Tokyo: ILCAA.
ZJH-Lisu	Handel, Zev. 1994. Review of *A Dictionary of the Northern Dialect of Lisu (China and Southeast Asia)*. LTBA. 17.1:141-154.
ZMYYC	Sun Hongkai et al. 1991. Zangmianyu yuyin he cihui [Tibeto-Burman phonology and lexicon]. Chinese Social Sciences Press.
ZYS-Bai	Zhao Yansun. 1990. Questionnaire (Bai). (unpublished).

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Abbreviations used in the bibliography

ALH	Acta Linguistica Hafniensia, Copenhagen.
BSTL	Shafer, Robert, et al. eds., Bibliography of Sino-Tibetan languages, Wiesbaden, Otto Harrassowitz, Vol. 1, 1957, Vol. 2, 1963.
CIIL	Central Institute of Indian Languages, Mysore, India.
IPLS	Milner, G. B., and Eugénie J. A. Henderson, eds., Indo-Pacific linguistic studies (Lingua 14-15), Vol. 1: Historical linguistics, Vol. 2: Descriptive linguistics, Amsterdam, North Holland Publishing Co., 1965.
JAOS	Journal of the American Oriental Society, New Haven, CT.
JASB	Journal of the Asiatic Society of Bengal, Calcutta.
LTBA	Linguistics of the Tibeto-Burman Area, University of California, Berkeley.
OPWSTBL	Occasional Papers of the Wolfenden Society on Tibeto-Burman Linguistics.
PSEAL	Papers in South East Asian Linguistics.
SIL	Summer Institute of Linguistics.
STC	Sino-Tibetan Conference.
TAK	Tonan Ajia Kenkyu (Southeast Asian Studies), Tokyo.
ZDMG	Zeitschrift der deutschen morgenländischen Gesellschaft, Wiesbaden.

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