

himalayan linguistics

A free refereed web journal and archive devoted to the study of the
languages of the Himalayas

Himalayan Linguistics

A geolinguistic study of directional prefixes in the Qiangic language area

Satoko Shirai

Tokyo University of Foreign Studies

ABSTRACT

This study examines directional prefixes of the languages spoken in the Qiangic language area from a geolinguistic perspective. Among these languages, the northern languages tend to have more directional prefixes. This fact suggests the areal development of directional prefixes. I discuss the following eight directional prefixes: (i) “upward”, (ii) “downward”, (iii) “inward”, (iv) “outward”, (v) “upriver”, (vi) “downriver”, (vii) “eastward” and (viii) “westward”. These directional categories are based on nature such as landforms or space and are relatively common in Qiangic. First, I show the geographical distribution of the forms of prefixes for each directional category. Then, I make hypotheses on the historical development of directional prefixes using a geolinguistic method. I conclude that among these directional categories, (i)–(iv) are basic in the Qiangic language area. In other words, the other categories, (v)–(viii), developed later in each local area. The following are the oldest types of initial of each directional prefix: dental plosive for the “upriver” prefixes; dental nasal for the “downward” prefixes; voiceless velar plosive for the “inward” and “upriver” prefixes; voiced velar plosive for the “outward” and “downriver” prefixes; velar plosive for the “eastward” prefixes; and dental nasal for the “westward” prefixes.

KEYWORDS

Directional prefix, Qiangic, Geolinguistics, language area, GIS

This is a contribution from *Himalayan Linguistics*, Vol. 19(1): 365–392.

ISSN 1544-7502

© 2020. All rights reserved.

This Portable Document Format (PDF) file may not be altered in any way.

Tables of contents, abstracts, and submission guidelines are available at
escholarship.org/uc/himalayanlinguistics

*A geolinguistic study of directional prefixes in the Qiangic language area**

Satoko Shirai
Tokyo University of Foreign Studies

1 Introduction

This study aims to examine the historical development of directional prefixes in Qiangic languages and their neighboring languages. The directional (or orientational) prefixes are a set of verbal prefixes that primarily indicate the direction of motion.¹ They are particularly found in Tibeto-Burman minority languages in western Sichuan and northwestern Yunnan, in China, an area known for its multiple ethnicities since Fei (1980).² Many such languages have been classified into the Qiangic group (or branch), although their genetic status has not been clearly defined. Moreover, some non-Qiangic languages spoken in this area, such as Pema, also have directional prefixes. This study tentatively calls the abovementioned multiethnic area the Qiangic language area to conduct a geolinguistic analysis on the directional prefixes in the languages spoken there.

Table 1 lists the directive categories that the Qiangic directional prefixes may indicate. The nonshaded categories—“upward”, “downward”, “upstream”, “downstream”, “inward”, “outward”, “eastward” and “westward”—are based on nature such as landforms or space and are relatively common in Qiangic. Thus, this study mainly focuses on the prefixes for these categories. The main part of this study (i) examines the classification of forms for each directive category, (ii) illustrates the geographical distribution of the types for each of the directive categories, and (iii) discusses their historical developments by focusing on the relative chronology among the forms and semantic shifts.

* Part of this study was presented at the 51st International Conference on Sino-Tibetan Languages and Linguistics (25–28 September 2018, Kyoto: Kyoto University). I deeply appreciate the valuable comments from the participants. This work was supported by JSPS Grants-in-Aid for Scientific Research (Kakenhi) #17J40087, 18H03577 and 19K00543. I would also like to thank Enago (www.enago.jp) for the English language review.

¹ In most Qiangic languages, directional prefixes also have other functions such as indicating aspect and mood. See Shirai (2009, 2018) for details.

² Other researchers have also named this area, for example, “the Western Sichuan Ethnic Corridor” (Sun 1983), “the Tibeto(-Qiang)-Lolo Corridor” (Shi ed. 2009; Zhang and Huang eds. 2015), or “Eastern Tibetosphere” (Roche and Suzuki 2017).

	Axis	Meaning	
Nature-based categories	vertical	“upward” (UPW)	“downward” (DWN)
	river	“upriver” (URV)	“downriver” (DRV)
	zone	“inward” (INW)	“outward” (OUT)
	solar	“eastward” (EST)	“westward” (WST)
		“southward”	“northward”
	riverbank	“to the left bank”	“to the right bank”
Speaker-based categories	inclination	“upslope”	“downslope”
		“uphill”/“toward the mountain”	“downhill”/“toward the river”
	side	“leftward” “forward”	“rightward” “backward”/“return”
	seat	“toward the higher seat”	“toward the lower seat”
	ego ³	“translocative”/“away from the deictic center”	“cislocative”/“toward the deictic center”
Neutral		“neutral”/“undefined”/“no direction”	

Table 1. Directive categories expressed by Qiangic directional prefixes

1.1 Target Languages

The target languages investigated in this paper are Qiangic (or Tangut-Qiang), Naic (or a part of Lolo-Burmese), and Tibetic (or Bodic), according to the genetic classification in the literature. This section first introduces the contentious point of language grouping, “Qiangic”, and then lists the target languages.

The Qiangic languages share plenty of typological characteristics in their phonology, morphology, and grammar. Having a set of directional prefixes is one such common characteristic. However, the genealogical details of the Qiangic group remain under discussion. Studies have posited that these languages belong to the Qiangic/Tangut-Qiang branch of the Tibeto-Burman subfamily (Sun 1982, 1983, 2001, 2016; Matisoff 2003, 2015). Other studies have classified rGyalrong (or

³ Ego-axis directive markers are found as part of directional prefixes in certain Qiangic languages including Rma (Qiang) (Evans 2004: 206–207; Chenglong Huang 2007: 132) and Prinmi (Lu 2001: 157; Ding 2014: 109–113; Daudey 2014: 105). However, in rGyalrongish languages, cislocative/translocative markers differ from other directive markers in position (slot of verbal complex) and are thus categorized distinctively, for example, associate motion markers (Shuya Zhang 2016: 200; Lin 2017: 73; Gong 2018: 202) from a synchronic viewpoint. This point requires careful discussions in further research. In this study, however, I tentatively include all such prefixes in directional prefixes (in a broad sense) for the purpose of comparison. Such directive notions may be indicated with verbal prefixes.

rGyalrongish) into a genetic group different from Qiangic (Thurgood 1985; Nishida 1987). More recently, Jacques and Michaud (2011: Online appendix, p. 6) formulate the Na-Qiangic branch, which includes the Qiangic languages, under the Burmo-Qiangic subfamily⁴ of the Sino-Tibetan language family. This view is also supported by recent Phylogenetic studies (Sagart et al. 2019; Zhang et al. 2019). Moreover, Chirkova (2012) casts doubt on Qiangic as a genetic unit, because it is difficult to find shared phonological innovation in these languages.⁵

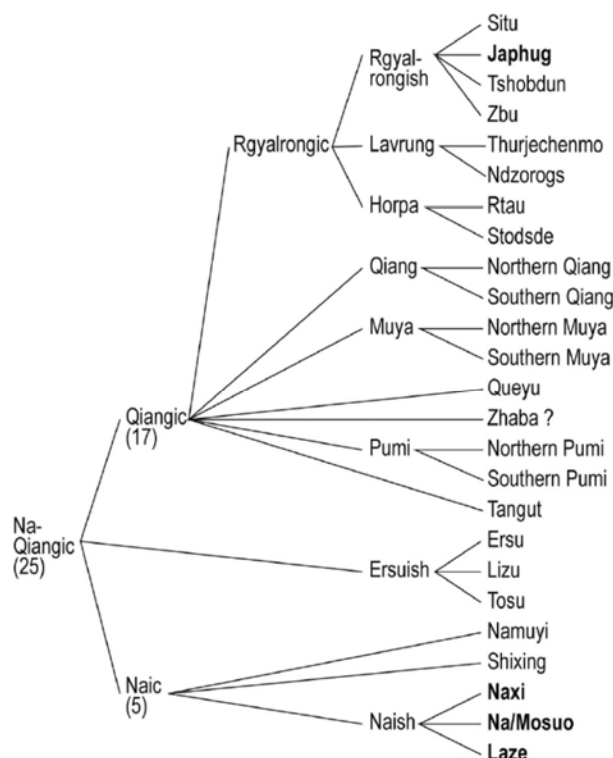


Figure 1. The Na-Qiangic part of Jacques and Michaud's (2011: Online Appendix p. 6) genealogical tree

The present paper tentatively follows Jacques and Michaud's (2011) subclassification of the Na-Qiangic languages (Figure 1) and mainly focuses on languages that may be included in their Qiangic subbranch. These languages are also included in Matisoff's (2015: xxxii, 1125) "Tangut-Qiang" and Sun's (2016: 4) "Qiangic".⁶ I do not provide further details of their genetic status but refer to them as Qiangic languages. This study also mentions their neighboring languages with a set of directional prefixes, that is, Namuyi, Shixing, Ersuish, Naic (Na-Qiangic) and Pema (Bodic). Table

⁴ The idea that groups the Burmo-Qiangic subfamily is similar to van Driem's (2001: 398–399) Southern Tibeto-Burman, but the latter is proposed as "the geographical dispersal".

⁵ Matisoff (2004) points out a quasi-common sound change in Qiangic, which he calls "brightening". Chirkova (2012: 138) mentions that brightening is "the only (phonological) innovation for the Qiangic subgroup proposed so far". Moreover, recent studies have revealed that brightening is completely different in certain Qiangic languages: for example, it has not occurred in some dialects of the rGyalrongish languages (Matisoff 2019).

⁶ Sun (2016) classifies the languages Namuyi, Shixing (or Xumi/Shixing), Gochang (or Guiqiong) and Ersuish subgroup into his "southern Qiangic" sub-branch. Matisoff's (2015) "Tangut-Qiang" also includes these languages. These languages are, however, excluded from Jacques and Michaud's (2011) "Qiangic".

2 lists the languages' names and subgroupings⁷ and mentions to the main sources of language data. In Table 2, language groups are underlined, languages and dialects are in italics, and sources are in Roman. Figure 2 depicts the geographical distribution of Qiangic languages and their neighboring languages mentioned in this paper. As observed in Table 2 and Figure 2,⁸ this paper includes data from geographically quite close spots, since even geographically close varieties may show different synchronic features. For example, Mawo Northehrn Rma and Zhaku Northern Rma are both spoken in (two regions of) the Mawo township but have different sets of directional prefixes. I referred to Roche and Suzuki (2017, 2018) and H. Suzuki (p.c., 2018) for the names of languages/dialects.

Na-Qiangic

Qiangic

rGyalrongic

rGyalrongish

Tshobdun (*Kakhyoris*, Sun 2000, 2017)

Japhug (*Ganmuniao*, Jacques 2008)

Zbu (*rGyaltsu [Lower]*, Gong 2018)

Situ (*Kyomkyo*, Prins 2017; *Bhola*, Nagano 2001; *Xisuo [lCogrtse]*, Lin 2002; *Jiada [Bragdbar]*, Shuya Zhang 2016)

Khroskyabs (*Guanyinqiao*, B. Huang 2007, 2009; *Mu'erzong*, Sun 2000; *Wobzi*, Lai 2017; *Yelong*, Yin 2007)

Horpa

sTodsde (*Puxi*, Sun 2000)

sTau (*Kongse*, Jacques et al. 2017; *Gexi*, Huang 2009; *Geshitsa*, Duoerji 1998)

Nyagrong Minyag (Suzuki 2012)

Other Qiangic

Rma⁹

Northern (*Marwo*, Liu 1998; *Zhaku [Marwo]*, Evans and Sun 2015; *Ronghong [Yadu]*, LaPolla with Huang 2003; *Yongbe*, Sims and Genetti 2017)

Southern (*Madeng [Longxi]*, Zheng 2017; *Shuitang*, *Longxi*, and *Miansi [Mianchi]*, Evans 2004; *Puxi*, C. Huang 2007; *Taoping*, Sun 1981)

Choyu (*Youlaxi*, Wang 1991)

nDrapa (*Mätro [Zhongni]*, my fieldnotes; *Southern*, Gong 2007; *Zhatuo*, Huang 2009)

Darmdo Minyag (Huang 1991, 2009)

Prinmi

Northern (*Wadu*, Daudey 2014; *Sanyanlong*, *Taoba*, *Tuoqi*, and *Zuosuo*, Lu 2001)

Central (*Xinyingpan*, Ding 2014¹⁰; *Ludian*, Lu 2001)

Western (*Qinghua*, Lu 2001)

⁷ Some of the language names in Figure 1 and Table 2 differ. The following is the correspondence between them ([the name in Figure 1] = [the name in Table 2]): Lavrung = Khroskyabs; Rtau = sTau; Qiang = Rma; Muya = Darmdo Minyak; Queyu = Choyu; Zhaba = nDrapa; Pumi = Prinmi; Shixing = Shihing. Nyagrong Minyag and Gochang are not included in Figure 1.

⁸ Figures 2, 4, 6, 7, and 15-20 are available as high resolution .pdf files as supplemental attachments to the article.

⁹ The subgrouping of the Rma (Qiang) language remains under discussion (Sims 2016). However, I tentatively divide the Rma dialects into Northern Rma and Southern Rma, in accordance with Evans (2004).

¹⁰ Classification of Prinmi dialects is based on Ding (2014: 8-9).

{Tangut (Arakawa forthcoming)}¹¹

Naic

Na (Yongning, Michaud 2015)

Naxi (*A-she*, Michaud et al. 2015)

Namuyi (Luobo, Huang 2009; Dzolo, Nishida 2019)

Shihing (*Upper Shuiluo*, Huang 2009; *Lanman-Shuiluo*, Chirkova 2015; *Lower Shuiluo*, Sun et al. 2014)

Other Na-Qiangic

Ersuish

Ersu (Shihong Zhang 2016)

Lizu (Huang 2009)

Gochang (Yutong, Song 2011; Qianxi, Jiang 2015)

Tibetic

Pema (Pingwu, Sun et al. 2007)

Table 2. The main sources of language data with subgrouping

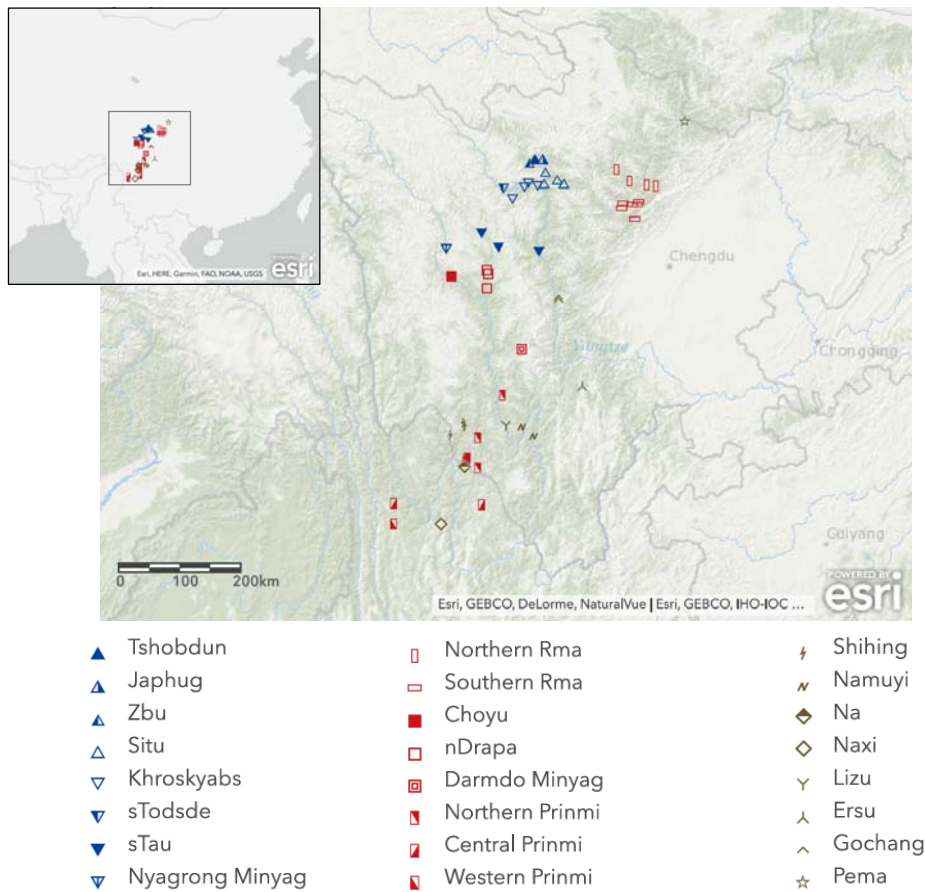


Figure 2. Points where the target languages are spoken

¹¹ I refer to the Tangut data not for the geolinguistic discussion but for the historical discussion because Tangut is an extinct language.

1.2 Previous Studies

Directional prefixes have attracted considerable attention in research on Qiangic languages. For example, Huang (2003 [1991]) devotes much space to a description of Qiangic directional prefixes. Her standpoint suggests that most directional prefixes are cognates. She mentions the following: “Most directional prefixes have a common origin” because “they appear to have a somewhat common manner or place of articulation” (Huang 2003 [1991]: 251). Moreover, Post (2019: 250) mentions, from a typological viewpoint, that the directive markings of the Qiangic area are analogous to those in certain subgroups of Sino-Tibetan such as Kiranti and Tani.

However, comparative approaches to Qiangic directional prefixes have not been successful. For example, Nagano (1984: 30–44) compares directional prefixes of Situ (rGyalrongish) dialects to establish the proto-forms. He also shows their correspondence with Proto-Tibeto-Burman motion verbs. However, in his attempt to compare them with Rma (Qiang), he asserts that the forms of most prefixes, except for “upward” and “downward”, do not clearly correspond. Moreover, they do not show good correspondences even between the dialects of Rma. Thus, tracing Qiangic directional prefixes back to cognates is difficult even though the systems of directional prefixes are typologically similar. Nishi (1985: 31) compares the directional prefixes in Rma, Prinmi, Ersu, and rGyalrongish and concludes that it is difficult to reconstruct their proto-forms or original forms because prefixes tend to show irregular correspondence and, notably, rhymes strongly tend to be reduced. Evans (2004: 205) also points out that “at the level of Proto-Qiangic, it is difficult to reconstruct more than one of these [orientational/directional] markers”. These studies suggest that a comparative method is not fully efficient to solve the history of Qiangic directional prefixes.

Some significant comparative studies have been conducted in a narrower range, such as within a closely related language subgroup. Nagano (1984: 30–44) on Situ, as mentioned above, is a good example of the earlier studies. He reconstructs the following six proto-forms (the glosses in brackets are added by the present author): **kV* (‘upstream, upper seat’), *tV* (‘upward’), **nV* (‘downward’), **rV* (‘forward, backward’), **yi* (‘neutral’), and **ne* (‘lower seat’). More recently, Evans (2004) compares the verbal inflectional morphology of the Rma/Qiang language subgroup, including the directional prefixes. He reconstructs the Proto-Rma forms (including Proto-Southern Rma [PSR] and Proto-Northern Rma [PNR]) as follows (Evans 205–208): **tə-* ‘upward’, *ɦa-* ‘downward 1’, PSR **ə-* ‘downward 2’, **u-* ‘inward 1, upstream’, PSR **ji-(L)* ‘inward 2, upstream’, **kuə-* ‘inward 3, toward mountains’, **ha-/*χa-* ‘outward’, PNR **nu-* ‘upstream’, **sə-/PSR *sə-* ‘downstream, outward’, **dzə-/PSR *dzi-(L)* ‘from ego/center, counterclockwise, leftward’, **da-* ‘from ego/center, clockwise, rightward’ and **rgə-* ‘backward/behind’. He also mentions that “within the relatively short time-depth of the Qiang [Rma] language itself, there is innovation both of forms and of codified categories of orientation” (Evans 2004: 208). Moreover, Jacques (2014: 233–235) conducts a comparative analysis of directional prefixes in Tangut, Japhug, and Prinmi.

Another perspective, which this study supports, is to regard at least a part of the present status of directional prefixes as later developments under areal contexts. A few studies have suggested support for this perspective. For example, LaPolla (1994: 68–69) mentions that directional marking in Tibeto-Burman is an example of Sapir’s “drift”. Shirai (2009) and Thurgood (2017: 16–17) regard Qiangic directional prefixes as an areal feature. However, according to my review of the literature, no detailed geolinguistic or areal linguistic study of Qiangic directional prefixes has been conducted.

1.3 Methodology

Geolinguistics (or linguistic geography) is a method of historical linguistics (Sibata 1969: 11). The geolinguistic notion has been successfully applied to the Sino-Tibetan linguistic area, even under other terminologies.¹² For example, Mantaro J. Hashimoto's series of work, including Hashimoto (1976), provides insights on the significance of a geolinguistic approach (which he termed "typo-geography") in Sino-Tibetan linguistic studies. Matisoff (1991) also introduces geolinguistic notions termed "Sinosphere" and "Indosphere".

Recent technological developments¹³ enable the use of the geolinguistic method at a more detailed level. This study attempts to examine the history of directional prefixes in Qiangic and neighboring languages using a geolinguistic method.¹⁴

The most distinguishing part of present-day geolinguistic studies is the drawing of linguistic maps. One map is drawn for one item (e.g., "upward"). Each map shows the geographical distribution of the linguistic features (e.g., the forms) for each item. Such linguistic features are indicated by colors and/or shapes on the map, in accordance with the linguistic classification. Thus, drawing maps requires linguistic analysis. Before drawing the maps, we must collect linguistic data and classify the data into types mostly based on the comparative analysis. The types are indicated with different marks on each map. Such geolinguistic maps have also been the subject of the scholarly interpretation of historical developments.

Compared with the comparative linguistic method, based on a premise that a language changes as a whole system, geolinguistics assumes that a certain part of the linguistic system (e.g., one lexical item) may change first (Sibata 1969: 159). Nevertheless, these two methods may be mutually beneficial: comparative studies must be referenced when drawing a geolinguistic map, and the hypotheses from a geolinguistic study may resolve the limitations of comparative studies.

In the following sections, I draw maps to show the geographical distribution of the forms of the directional prefixes for each directional category. Primary and secondary data are included. Consequently, the quality of the data may vary among the original researchers, depending on their morphophonological interpretations of directional prefixes. Thus, I examine the roughly classified types of forms and exclude the detailed phonetic/phonological variations. I use a geographic information system (GIS) through *ArcGIS Online* (www.arcgis.com) to draw language maps. Next, I analyze the language maps by using the geolinguistic method.

2 Geolinguistic Analysis of Directional Prefixes

The present study supports the hypothesis that the directional prefixes are not purely inherited features but have been developed in the areal context to a certain extent. For example, the number of distinct directional prefixes varies among languages/dialects—even among the languages that have been classified as Qiangic. In other words, certain directional categories can be indicated

¹² Areal linguistics includes a notion that partially overlaps with Geolinguistics. Campbell's (2017) notion of "trait-sprawl area" is of historical interest, an interest shared with geolinguistic studies. Moreover, works by Mantaro J. Hashimoto (Hashimoto 1976, among others) have often been categorized into areal linguistics (cf. LaPolla ed. 2019, Volume II "Language contact and areal features"), but they model geolinguistic studies.

¹³ Lai, Wu and List (2018) provide another approach to directional/orientational markers using both geographic information and statistical method.

¹⁴ Fukushima (2010, 2017) provides detailed introductions for recent geolinguistic methods.

or distinguished by directional prefixes in one language but not in another language. For example, Mawo Northern Rma has ten directional prefixes to indicate different directional categories: “upward”, “downward”, “inward, toward mountains”, “toward river”, “outward”, “upstream”, “downstream”, “to ego/center”, “from ego/center” and “backward” (Evans 2004: 205–206), whereas Youlaxi Choyu has four: “upward”, “downward”, “inward/upriver” and “outward/downriver” (Wang 1991). Figure 3 is a map of the number of directional prefixes of each dialect, including directional prefixes other than those mentioned in the present study.¹⁵ The geographical distribution is apparently different from the distribution of genetic groups indicated in Figure 2. That is, Figure 3 shows a tendency for northern languages to have a higher number of directional prefixes and for southern languages to have a lower number of directional prefixes. This distribution suggests that certain directional prefixes are not inherited from the common proto-language but have developed in the areal context.

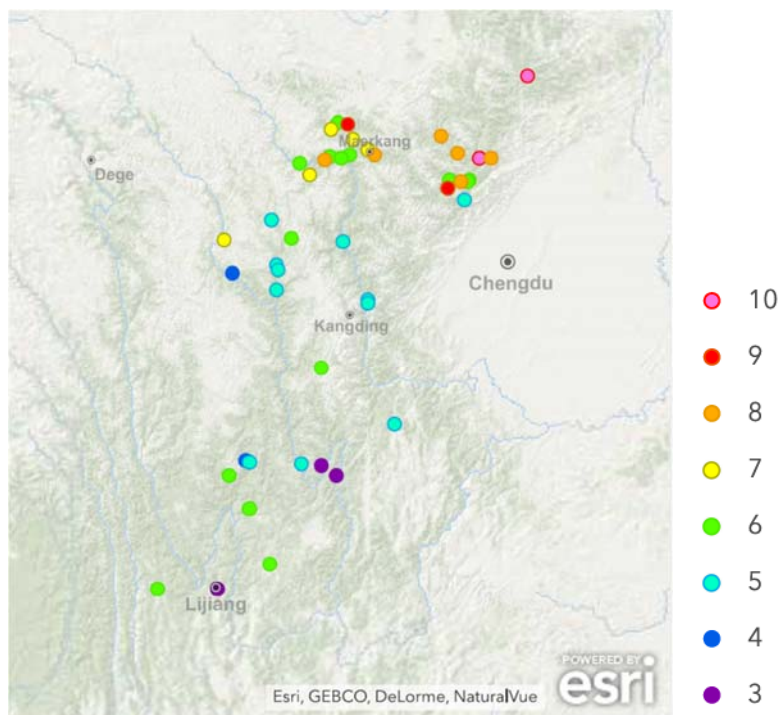


Figure 3. Number of directional prefixes in each linguistic variety

The next part of this section presents an analysis of Qiangic directional prefixes from a geolinguistic perspective. Table 3 lists the forms of directional prefixes involved in the discussion. The languages are divided in accordance with the genetic subgroups: rGyalrongic languages are in the light blue columns; other Qiangic languages are in the pink columns, other Na-Qiangic languages are in the light green columns; and Pema, a Tibetic language, is in the colorless column. If a certain form can indicate more than one direction in a certain dialect, the form(s) in the right-hand column(s) are shown in parentheses.

¹⁵ The number counts the distinct directional categories indicated by different prefixes. See also Footnote 3.

Language	‘UPW’	‘DWN’	‘INW’	‘OUT’	‘URV’	‘DRV’	‘EST’	‘WST’
Kakhyoris Tshobdun	<i>tə-</i>	<i>nɐ-</i>	<i>lɐ</i> ¹⁶	<i>tʰɐ-</i>	<i>(lɐ-)</i>	<i>(tʰɐ-)</i>	<i>kə-</i>	<i>nə-</i>
Ganmuniao Japhug	<i>ɬɻ-</i>	<i>pɯ-</i>	---	---	<i>lɻ-</i>	<i>thɯ-</i>	<i>kɻ-</i>	<i>nu-</i>
rGyaltsu Lower Zbu	<i>tə</i> ^{←17}	<i>nɐ-</i>	---	---	<i>ɛɐ</i> [←]	<i>(nɐ-)</i>	<i>rə-</i>	<i>nə</i> [←]
Kyomkyo Situ	<i>to-</i>	<i>na-</i>	---	---	<i>kə-</i>	<i>nə-</i>	---	---
Bhola Situ	<i>to-</i>	<i>no-</i>	---	---	<i>ko-</i>	<i>(no-)</i>	---	---
Xisuo Situ	<i>to-</i>	<i>na-</i>	---	---	<i>ro-</i>	<i>rə-</i>	<i>ko-</i>	<i>nə-</i>
Jiada Situ	<i>rɐ-</i>	<i>na-</i>	---	---	<i>u-</i>	<i>nə-</i>	<i>(u-)</i>	<i>(nə-)</i>
Mu'erzong Khroskyabs	<i>ɬ-</i>	<i>ɬɬ-</i>	---	---	<i>lɬ-</i>	<i>və-</i>	<i>kɬ-</i>	<i>nə-</i>
Yelong Khroskyabs	<i>o-</i>	<i>na-</i>	<i>ko-</i>	<i>ni-</i>	<i>la-</i>	<i>vo-</i>	<i>(ko-)</i>	<i>(ni-)</i>
Guanyinqiao Khroskyabs	<i>æ</i> ³³	<i>nɛ</i> ³³	<i>kɛ</i> ³³	<i>rə</i> ³³	<i>(kɛ</i> ³³ <i>-)</i>	<i>nə</i> ³³	---	---
Wobzi Khroskyabs	<i>æ-</i>	<i>næ-</i>	---	---	<i>kə-</i>	<i>nə-</i>	---	---
Puxi sTodsde	<i>rə-</i>	<i>nə-</i>	---	---	<i>ldə-</i>	<i>və-</i>	<i>ɣə-</i>	<i>gə-</i>
Kongse sTau	<i>rə-</i>	<i>nə-</i>	---	---	---	---	---	---
Gexi sTau	<i>rə-</i>	<i>nə-</i>	<i>ɣə-</i>	<i>gə-</i>	<i>(ɣə-)</i>	---	---	---
Geshitsa sTau	<i>rə</i>	<i>na</i>	---	---	---	---	<i>wə</i>	<i>ga</i>
Nyagrong Minyag	<i>rə</i>	<i>nə</i>	<i>wə</i>	<i>kə / ɣə</i>	---	---	---	---
Ronghong N. Rma	<i>tə-</i>	<i>ɦa-</i>	<i>ə-</i>	<i>ɦa-</i>	<i>nə-</i>	<i>sə-</i>	---	---
Zhaku N. Rma	<i>tə-</i>	<i>a-</i>	<i>ni-</i>	<i>sə-</i>	<i>(ni-)</i>	<i>(sə-)</i>	<i>tʰi</i> ¹⁹	<i>kwə-</i>
Mawo N. Rma	<i>tə-</i>	<i>a-</i>	---	---	<i>ŋu-</i>	<i>sə-</i>	---	---
Yonghe N. Rma ²⁰	<i>tV-</i>	<i>ɦV-</i>	<i>V-</i>	<i>hV-</i>	<i>nV-</i>	<i>sV-</i>	---	---
Shuitang S. Rma	<i>tə-</i>	<i>a- / ə</i> ⁴	<i>wu-</i>	<i>ɣɻ-</i>	<i>wu-</i>	<i>(ɣɻ-)</i>	---	---
Madeng S. Rma	<i>tə̀-</i>	<i>à-</i>	<i>jì-</i>	<i>ɣə̀-</i>	---	---	---	---
Longxi S. Rma	<i>tə̀-</i>	<i>à-</i>	<i>jì-</i>	<i>ɣə̀-</i>	---	---	---	---
Taoping S. Rma	<i>tə</i> ³¹	<i>ə</i> ³¹	<i>u</i> ⁵⁵	<i>xə</i> ³¹	<i>(u</i> ⁵⁵ <i>)</i>	<i>sɻ</i> ³¹	---	---

¹⁶ According to Sun (2017: 563), the riverline subsystem in Tshobdun has acquired an inside–outside opposition by virtue of metaphorical extension.

¹⁷ Gong’s (2018) left-pointing arrow over a vowel indicates “préfixes rétractant” and is indicated as a superscript arrow at the right of the vowel in the present study.

¹⁸ In Geshitsa, directions such as “inward”, “outward”, “forward” and “backward” are expressed by adding a location word (Duoerji 1998: 70).

¹⁹ Correspondent prefixes in another variety of Mawo Qiang, *tʰiu-* and *kuə-*, are interpreted as ‘toward river’ and ‘toward mountains’ respectively (Evans 2004).

²⁰ “V” in Yonghe Rma indicates that the vowel assimilates with the vowel of the host verb stem. The parallel vowels (or reduced vowels) may be indicated with /ə/ or /ɬ/ in other language varieties.

²¹ “Directional markers in the Longxi dialect don’t include direction upwards or downwards along a stream” (Zheng 2017: 182).

Puxi S. Rma	<i>te-</i>	<i>aʼ-</i>	<i>kue-</i>	<i>χa-</i>	<i>y-</i>	<i>ʒe-</i>	---	---
Miansi S. Rma	<i>tè-</i>	<i>hà-</i>	<i>ì-</i>	<i>ʒè-</i>	---	---	---	---
Mätro nDrapa	<i>ɬ-</i>	<i>a-</i>	<i>kɬ-</i>	<i>ŋɬ-</i>	<i>(kɬ-)</i>	<i>(ŋɬ-)</i>	---	---
Zhatuo nDrapa	<i>ə-</i>	<i>a-</i>	<i>kə-</i>	<i>ŋə-</i>	<i>(kə-)</i>	<i>(ŋə-)</i>	---	---
Southern nDrapa	<i>r⁵⁵-</i>	<i>a⁵⁵-</i>	<i>kə⁵⁵-</i>	<i>ŋə⁵⁵-</i>	<i>(kə⁵⁵-)</i>	<i>(ŋə⁵⁵-)</i>	---	---
Youlaxi Choyu	<i>rə¹³-</i>	<i>lə⁵⁵-</i>	<i>kə⁵⁵-</i>	<i>ɣu¹³-</i>	<i>(rə¹³-)</i>	---	---	---
Darmdo Minyag	<i>tə-</i>	<i>nɛ-</i>	<i>ɣə-</i>	<i>hæ-</i>	<i>(ɣə-)</i>	<i>(hæ-)</i>	---	---
Wadu N. Prinmi	<i>tə-</i>	<i>ně-</i>	<i>ě-</i>	<i>q^hə-/k^hə-</i>	<i>(ě-)²²</i>	<i>(q^hə-/k^hə-)</i>	---	---
Xinyingpan C. Prinmi	<i>tʂ^H-</i>	<i>nʂ-</i>	<i>ʂ-/xʂ²³</i>	<i>gə-/khə-</i>	---	---	---	---
Qinghua W. Prinmi	<i>tə⁵⁵-</i>	<i>nə¹³-</i>	<i>xə¹³-</i>	<i>khə¹³-</i>	---	---	---	---
Tangut	<i>¹aʔ-</i>	<i>¹na:-</i>	--- ²⁴	---	---	---	---	---
Yutong Gochang	<i>thu³³</i>	<i>mi³³</i>	---	---	---	<i>(mi³³)</i>	---	---
Qianxi Gochang	<i>thu</i>	<i>mi</i>	--- ²⁵	<i>wu-</i>	<i>ji-</i>	---	---	---
Ersu	<i>də-/dzi-</i>	<i>nə-/ŋi-</i>	<i>k^hə-</i>	<i>ŋə-</i>	---	---	---	---
Upper Shihing	<i>dzi³³-</i>	<i>miə³³-</i>	<i>khū³³-</i>	<i>bə³³-</i>	<i>(dzi³³-)</i>	---	---	---
Shihing	<i>dzi³³-</i>	<i>miɛ³³-</i>	<i>qho³³-</i>	<i>by³³-</i>	<i>(dzi³³-)</i>	<i>(miɛ³³-)</i>	---	---
Lizu	<i>de³⁵-</i>	<i>ne³⁵-</i>	<i>khe³⁵-</i>	<i>ŋe³⁵-</i>	<i>(khe³⁵-)</i>	<i>(ŋe³⁵-)</i>	---	---
Luobo Namuyi	<i>luo³³-</i>	<i>mi³³-</i>	<i>(luo³³-)</i>	<i>(mi³³-)</i>	<i>(luo³³-)</i>	<i>(mi³³-)</i>	---	---
Dzolo Namuyi	<i>luo-</i>	<i>mi-</i>	---	---	---	---	---	---
Yongning Na	<i>gɾ -</i>	--- ²⁶	---	---	---	---	---	---
Pema	<i>khɛ⁵³-</i>	<i>ʒə³⁴¹-</i>	<i>nɔ¹³-</i>	<i>dʒə³⁴¹-</i>	<i>tɛɛ⁵³-</i>	<i>mə⁵³-</i>	---	---

Legend: ---, no data or no mention; (), same as another directional prefix in the given language.

Table 3. List of directional prefixes of Qiangic and neighboring languages examined in this study

²² In Wadu Prinmi, “inwards” and “outwards” also indicate “up the valley” and “down the valley”, respectively (Daudey 2014: 267).

²³ “The original voiceless consonant of the prefix for ‘inward’ probably undergone lenition, [...] [k] > [x] > ø” (Ding 2014: 110).

²⁴ Arakawa (forthcoming) mentions that even though certain studies including Nishida (1989) have offered a different opinion that the prefixes ²da:- and ²rI:r- indicate the inward/upstream and outward/downstream motions, respectively, such directive functions are not clearly certified based on the materials he investigated.

²⁵ Jiang (2015: 129) glosses the Gochang prefix *ji-* as ‘inward’, whereas Huang (2003: 249) and Song (2011: 116) gloss the correspondent forms as ‘toward center’ and ‘toward the speaker’, respectively.

²⁶ Yongning Na has a directional expression with initial *m-*, although it is not a verbal prefix: *mvltəo1* ‘downward’ (adverb(ial)) (Michaud 2015: 116).

2.1 Vertical Directives

2.1.1 “Upward”

Directional prefixes that indicate upward movement (UPW) are observed in all languages/dialects with a set of directional prefixes. Figure 4 illustrates their distribution. The forms are roughly classified into three types: [A] with a coronal-consonant initial, [B] with vowel initial (vowel type, i.e., without consonant initial), and [C] with a dorsal-consonant initial (G-type). In Figure 4, [A] coronal type is marked with red, [B] vowel type is marked with blue, and [C] G-type is marked with black.

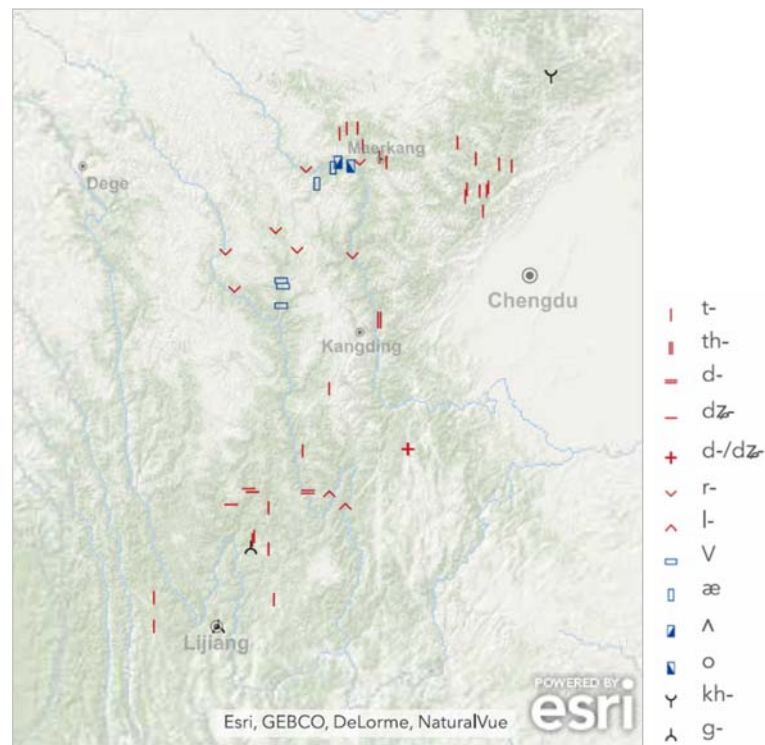


Figure 4. “Upward” prefixes

Moreover, [A] can be divided into two subtypes: [A-1] plosive/affricative initial type (T-type) and [A-2] liquid initial type (R-type). From a comparative viewpoint, lenition $t > r/l$ is frequently found in west rGyalrongic languages (Yunfan Lai p.c., 2018; see also Lai 2017: 227-228, 320 for Khroskyabs, one of such languages). Notably, [A-2] is also found around the spots of west rGyalrongic, such as Jiada Situ²⁷ and Choyu.

Similarly, [A-1] and [B] are also both found in the rGyalrongic and non-rGyalrongic subgroups of Qiangic, although the rGyalrongic group is a confirmed genetic unit from a comparative viewpoint (Sun 2000). For example, Tshobdun (rGyalrongic) and Prinmi (non-rGyalrongic) have [A-1], and Khroskyabs (rGyalrongic) and nDrapa (non-rGyalrongic) have [B]. This distribution proves that these forms were spread after the languages diverged from one another.

²⁷ Zhang (2016: 166) and Gong (2018: 22) mention the lenition in Jiada (Brag-dbar) Situ.

Regarding their geographical distribution, the [A] coronal type is distributed most widely. Among the spots of [A], the [A-2] R-type is concentrated in the northwestern peripheral area. [B] is limited to a part of the northwestern area and divided into two areas in the north and south by [A-2].

This distribution suggests the following hypothesis of their relative chronology. First, [A] spread across the whole area (Figure 5a). Second, [B] emerged in the northwestern area (Figure 5b). Third, after [A-1] and [A-2] were divided, [A-2] diffused again in the northwestern peripheral area (Figure 5c). Thus, from a geolinguistic perspective, the chronological order is [A-1] > [B] > [A-2].

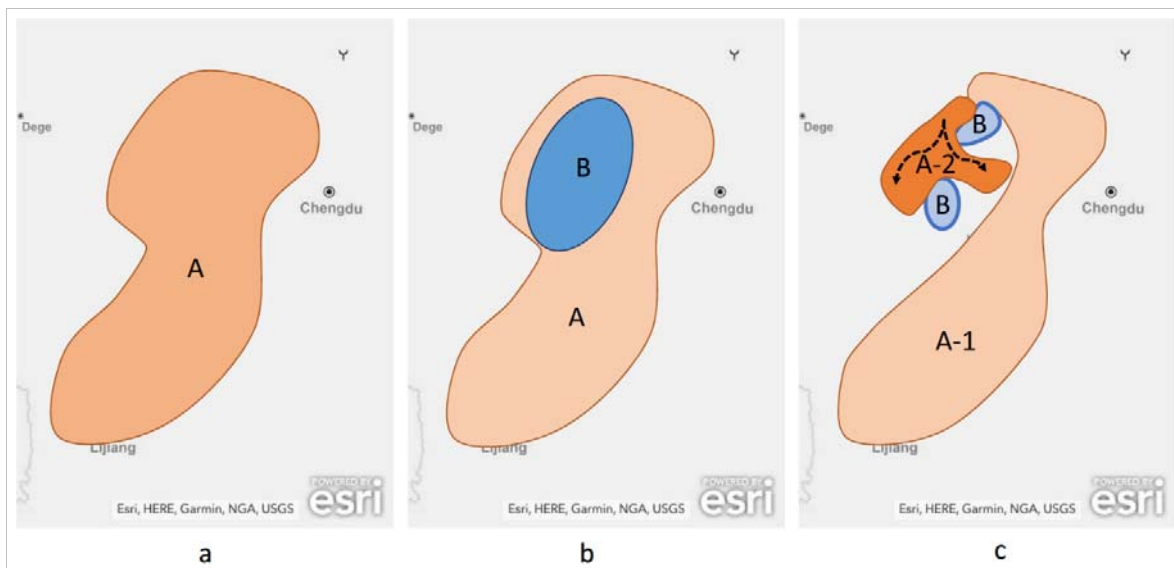


Figure 5. A provisional chronological order of Qiangic “upward” directional prefixes

[C] is observed in non-Qiangic languages including Pema and Na, which are located in peripheral regions of the Qiangic area. Na has an equiform morpheme that means ‘top, upper part’: *grɿ* in such words as *grɿdzrɿ* ‘at the top part’ (Michaud 2015: 51). Thus, I tentatively conclude that the Na UPW prefix *grɿ-* is a type of calque from the surrounding Qiangic languages. Therefore, I conclude that [C] is relatively new. The relative chronology of the UPW prefixes can be summarized as follows: [A-1] T-type > [B] vowel type > [A-2] R-type > [C] G-type.

2.1.2 “Downward”

Figure 6 illustrates the geographical distribution of directional prefixes for downward movement (DWN). Marks on the map are composed of two distinct layers for initials and rhymes. The forms are, with a few exceptions, roughly divided into the following three types: [A] with a dental nasal (or liquid) initial (marked with red circles), [B] with a vowel or glottal initial (marked with blue triangles), which can be divided into two subtypes, and [C] with a bilabial nasal initial (marked with black rhombuses) and a rhyme with a front vowel (marked with black crosses). [A] and [B] are further divided into the following subtypes based on the rhymes: [A-1] rhymes with a mid-undrounded vowel (marked with blue lines), [A-2] rhymes with a low vowel (marked with red lines), [A-3] rhymes with a vowel of another type (marked with black or brown lines), [B-1] low vowel, and

[B-2] mid-unrounded vowel. The exceptional forms are *pu-* in Japhug and *ʒø-* in Pema, which can be regarded as a later development because of their limited distributions. Jacques (2008: 245) mentions that *pu-* in Japhug is apparently an original innovation, which was developed from a directive noun *u-pa* ‘bottom’.

Based on the initials, [A] N-type has a wider distribution than [B] vowel type and [C] M-type. [B] is distributed in the northeast and mid-north regions. [C] is found in non-Qiangic languages, namely, Naic, Ersuish and Gochang, which are mainly distributed in the southern region. The distribution suggests that [A] is older than [B] and [C].

I now compare subtypes. [A-1] *nə*-type (red circles with blue lines) is widely spread, whereas [A-2] *na*-type (red circles with red lines) is concentrated in the mid-northern region. This distribution suggests that [A-1] is older than [A-2]. By contrast, [B-1] *a*-type (blue triangles with red lines) is more widely distributed than [B-2] *ə*-type (blue triangles with blue lines). Moreover, [B-2] is found only in Rma dialects. This distribution suggests that [B-1] is older than [B-2].

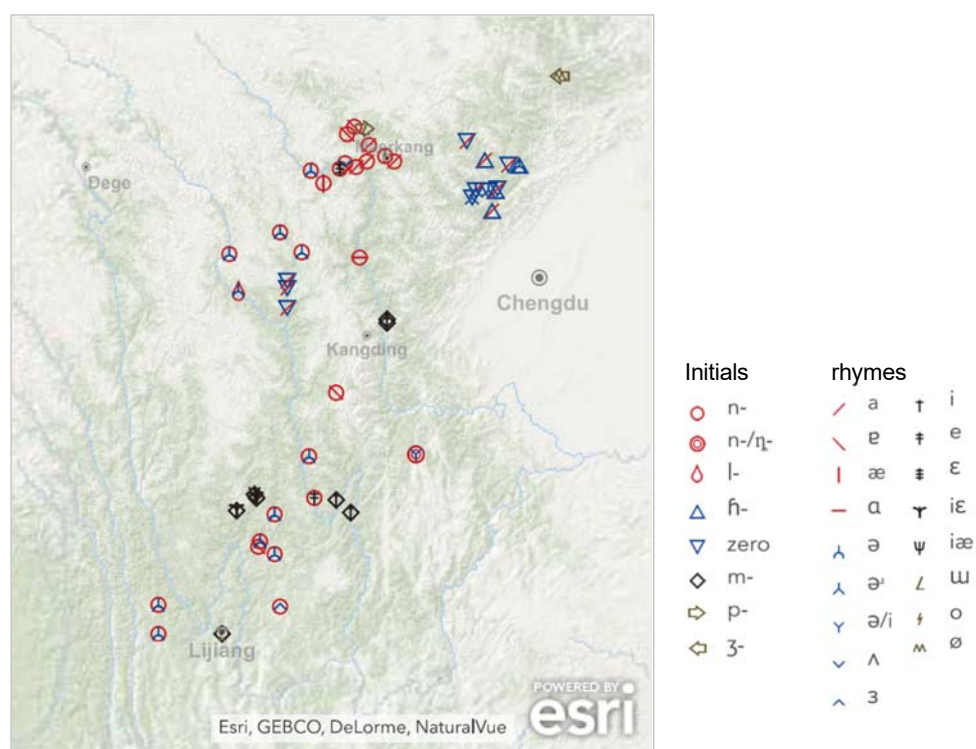


Figure 6. “Downward” prefixes

The idea that [A-2], with a low vowel, is newer than [A-1], with a mid-unrounded vowel, might be considered out of the ordinary because rhymes of directional prefixes tend to be reduced (Nishi 1985: 31, mentioned in Section 1.2). I now discuss the issue of vowels of DWN prefixes. The DWN prefixes in certain languages including Kyomkyo Situ ([A-2]), Mätro nDrapa and Miansi Southern Rma (both [B-1]) have a characteristic low vowel that the other directional prefixes in the language variety do not have. In Mätro nDrapa, for example, the DWN prefix is specified with an invariable low vowel, whereas the other directional prefixes show phonological assimilation of the vowel. Figure 7 illustrates the distribution of the vowels of Qiangic DWN prefixes, which is abstracted from Figure 6, and demonstrates that low vowels (marked with red lines) are distributed

relatively widely in the northern region, but mid-unrounded vowels (marked with blue lines) are distributed the most widely in the whole area. These distributions apparently suggest that those with a low vowel were spread later than those with a mid-unrounded vowel.

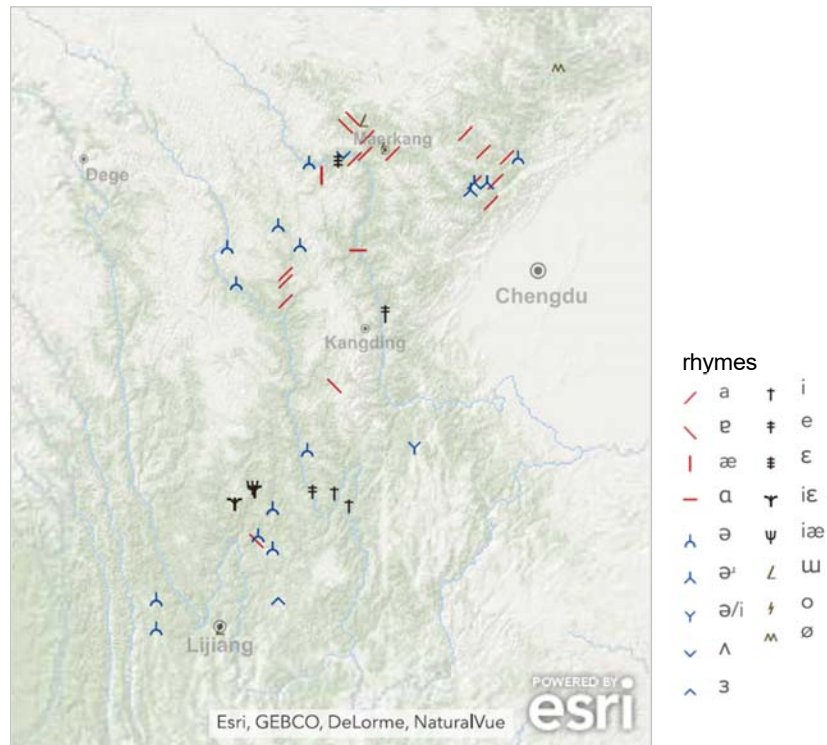


Figure 7. Rhymes of “downward” prefixes

I tentatively conclude that [A-2] was secondarily developed by combining two morphemes, $nV-$, composed of n -initial and underspecified rhyme, and $a-$. For example, Kyomkyo Situ has two distinct directional prefixes for the vertically downward movement and for the downstream movement, $na-$ and $nə-$, respectively (Prins 2017: 407). Thus, a reasonable hypothesis might be that $na-$ was secondarily developed to distinguish these two directions.²⁸ This hypothesis is also supported by the geographic distribution: [A-2] is distributed at the border between [A-1] and [B-2].

Thus, I propose the following hypothetical history. First, [A-1] $nə$ -type spread widely in the whole area. Next, [B-1] a -type originated from the northeast and spread to the mid-northern area (Figure 8a). Subsequently, a compounded type of $n-$ and $a-$, that is, na -type ([A-2]), formed in the area where the former two types met (Figure 8b). Other types developed later in each language subgroup. Consequently, the provisional chronological order of the DWN prefix is [A-1] $nə$ -type > [B-1] a -type > [A-2] na -type > [B-2]/[C] > others.

²⁸ Fossilized combinations of affixes are found in certain languages in the Qiangic area such as Japhug. Jacques (2008: 295) analyzes one of the Japhug negative prefixes, $ma-$, as a compound form of $mɿ-$ ‘NEG.NPST’ and $a-$ ‘IRR’.

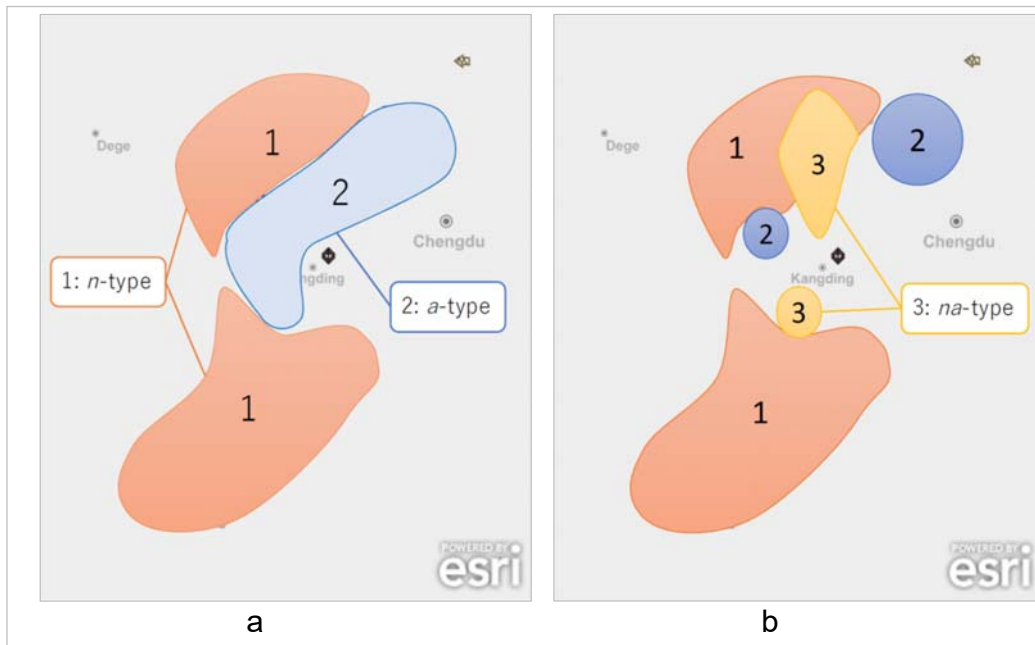


Figure 8. Provisional chronological order of the Qiangic “downward” prefixes

2.2 Nonvertical Directives

This section examines a group of nonvertical directional prefixes of nature-based categories, including “inward (INW)”–“outward (OUT)”, “upriver (URV)”–“downriver (DRV)” and “eastward (EST)”–“westward (WST)”. As seen in Table 3, some languages such as sTau and nDrapa have an identical set for certain directions among these categories, whereas other languages such as Tshobdun and Ronghong Rma have two sets; however, no language/dialect has three full sets of these categories.

Previous research on these categories have been divided. Huang (2003 [1991]: 249) regards river-based directions (URV – DRV) as the main category probably because this category is related to the natural geography, and are coded characteristically in the languages of the Qiangic area among Tibeto-Burman languages. By contrast, Thurgood (2017: 16) lists “upstream” (URV) and “inward” in the same column (as well as “downstream” (DRV) and “outward”).

Among the studies on specific subgroups, Sun (2000: 180) proposes three distinct sets of directional categories that are basic in the rGyalrongish languages: solar, river, and vertical. Moreover, Lin (2002) discusses the relation between the river-based directives (URV–DRV) and solar-based directives (EST–WST) in dialects of Situ, one of the rGyalrongish languages. Based on her fieldwork on the Xisuo variety of lCogrtse Situ, she concludes that the river-based categories in previous studies on Situ are actually solar-based. However, against Sun (2000) and Lin’s (2002) proposal, Prins (2017: 346–347, 410–414) concludes, based on her long-term field research and careful discussions, that the Kyomkyo variety of Situ does not have the solar axis in its orientation system.

I tentatively conclude that differences between dialects cause such discrepancies. The alignment of the form and meaning of the directional prefixes may change relatively easily. Evans (2004: 208) asserts that innovation occurs in forms and codified categories of orientation, even within the relatively short time depth of the Rma language.



Figure 9. Simplified map of inward prefixes

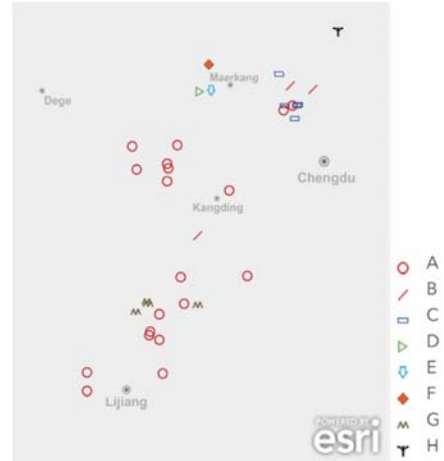


Figure 10. Simplified map of outward prefixes



Figure 11. Simplified map of upriver prefixes

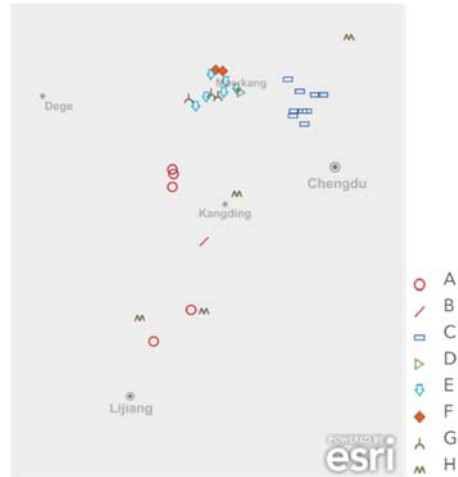


Figure 12. Simplified map of downriver prefixes



Figure 13. Simplified map of eastward prefixes



Figure 14. Simplified map of westward prefixes

In this study, I draw the distribution of each directional prefix on a separate map and conclude that the regional axis, that is, the INW–OUT set is the most basic category among the abovementioned group of directives. Figures 9 to 14 illustrate the simplified geographical distribution of these categories, respectively (the detailed distribution is presented later). Among these maps, Figures 9 and 10 illustrate the geographical distribution of INW–OUT prefixes and show that they have the least-diversified types and the widest geographical distribution. Contrastingly, the prefixes of river-based directions (URV–DRV) illustrated in Figures 11 and 12 comprise various types, and Figures 13 and 14 show that the solar-based directional prefixes (EST–WST) are found in limited areas.

The following part of this section presents a geolinguistic analysis of each prefix.

2.2.1 “Inward”

The INW prefixes can be classified into four types: [A] with velar or uvular initials (tentatively called KH-type), [B] with initial *l* (L-type), [C] with vowel initials (vowel type), and [D] with initial *n* (N-type). Figure 15 illustrates their geographical distribution. [A] KH-type is indicated with red marks, [B] L-type is marked in brown, [C] vowel type is marked in blue (“V” indicates that the vowel alternates in accordance with the stem vowel), and [D] N-type is marked in black.

From their geographical distribution, I conclude that [A] KH-type is the oldest type because it is found widely among the whole area. [B] L-type is found in two remote spots: *lɛ-* in Tshobdun and *luo*³³- in Luobo Namuyi. It is difficult to ascertain whether both forms are related or they have developed accidentally. Tentatively, I cannot deny that the L-type is relatively old. [C] vowel type is almost limited to Rma, which is spoken in the northeastern area. Consequently, I conclude that [C] was developed later in Rma. Although the INW prefix *ɛ-* of Wadu Northern Prinmi spoken in the southern area is classified into [C] based on its surface form, it can be ignored as an exception: It is probably formed by lenition of the initial, *k > x > ∅*. A parallel change is found in Xinyinpan Central Prinmi (Ding 2014: 110). [D] also shows a limited distribution in the northmost peripheral area. It is difficult to ascertain which of [C] and [D] is older. Thus, I tentatively conclude that the relative chronology of the INW prefixes is [A] KH-type > [B] L-type > [C] vowel type/[D] N-type.

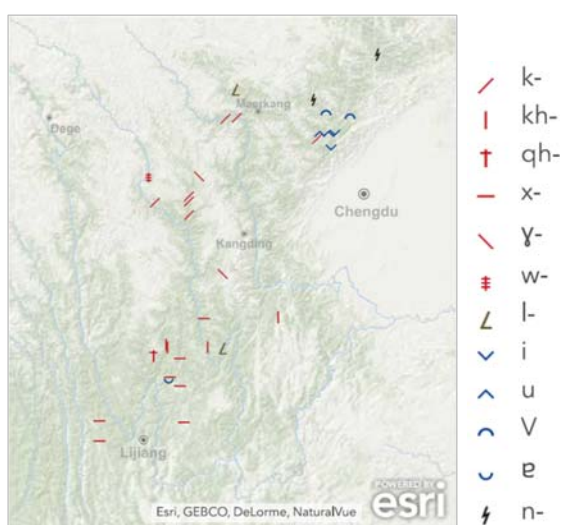


Figure 15. “Inward” prefixes

2.2.2 “Outward”

OUT pairs with the INW examined in the preceding section. However, I observe that the detailed geolinguistic situations of the OUT prefixes are not quite parallel with that of the INW prefixes.

The OUT prefixes can be classified into eight types: [A] with velar or uvular initials (tentatively called G-type), [B] with glottal fricative initials (H-type), [C] with initial *s-* or *ʃ-* (S-type),²⁹ [D] with initial *r-* (only one example is found: *rəʃ*³³-), [E] with initial *n-* (only one example: *ni-*), [F] with dental stop initial (only one example: *tʰv-*), [G] with bilabial initials (B-type), and [H] with prepalatal affricate initials (only one example: *dzə*³⁴-). Among these types, [B] H-type is highly likely to be derived from cognates of [A] G-type through lenition. Evans (2004: 206) groups these two types found in Rma dialects together (G-type in Taoping Southern Rma and H-type in Northern Rma dialects) but carefully reconstructs separate proto-forms. Moreover, *hæ-* in Darmdo Minyag shows the parallel OUT = DRV pattern, as shown by [A] G-type (Sections 2.2.3 and 2.2.4).

Figure 16 illustrates their geographical distribution. [A] G-type is indicated with red circles, [B] H-type is marked with red lines, [C] S-type is in navy blue, [D] is in green, [E] is in light blue, [F] is in orange, [G] is in brown, and [H] is in black.

The geographical distribution in Figure 16 shows that [A] G-type is distributed widely in the whole area but the other types are distributed in limited regions. [B] H-type is found in the northeastern and central regions. [C] S-type is limited to a part of the northeastern area (only in Southern Rma dialects; Table 3). [D], [E], and [F] are regarded as later developments in each dialect because they are limited to one spot each. Moreover, [G] and [F] are found only in non-Qiangic languages. We assume that these non-Qiangic languages have developed such prefixes under the influence of Qiangic languages. Thus, I conclude that the provisional relative chronology of the OUT prefixes is [A] G-type (> [B] H-type) > [C] S-type > other types.

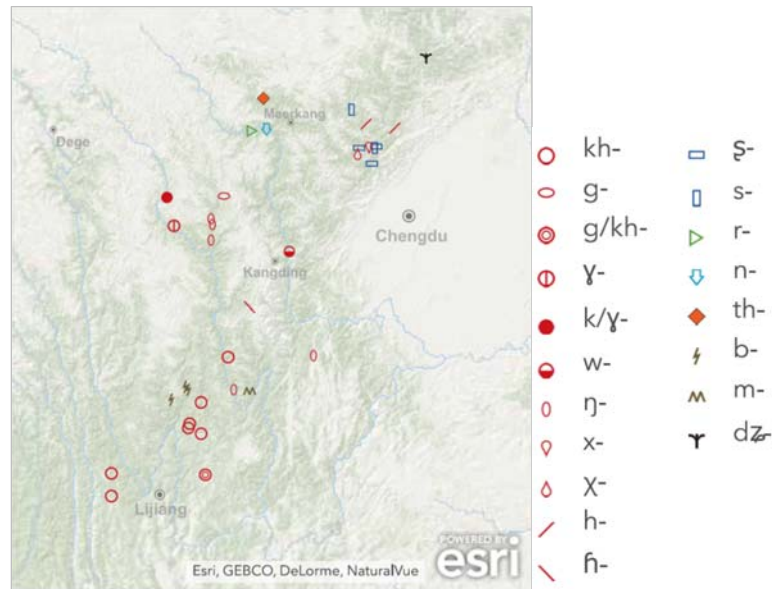


Figure 16. “Outward” prefixes

²⁹ Evans (2001: 283) reconstructs the Proto-Southern-Qiang form **ʃi L*.

2.2.3 “Upriver”

The URV prefixes can be roughly classified into seven types: [A] KH-type (Section 2.2.1), [B] with vowel initial or on-glide approximant initial (vowel type), [C] with initial *l(d)*- (L-type), [D] with initial *r*- (R-type), [E] with nasal initial (N-type), [F] with initial *ε*- (only one example is found: *εv̄*-), and [G] with prepalatal affricate initial (*tʃ*-type).

Figure 17 illustrates the geographical distribution of the seven types. [A] is marked with red, [B] is in brown, [C] is in navy blue, [D] is in green, [E] is in light blue, [F] is in orange, and [G] is in black. Figure 17 shows that [A] KH-type has a relatively wide distribution. This type is found in genealogically different groups, namely, rGyalrongic and non-rGyalrongic. Moreover, all dialects with KH-type have an identical prefix to indicate INW and URV. This URV = INW pattern is also found in one of the dialects with [B] vowel type: Wadu Northern Prinmi and Taoping Southern Rma. As mentioned in Section 2.2.1, *ǝ*- in Wadu Northern Prinmi is regarded as derived from [A] KH-type. Additionally, [B] vowel type is found in three separate regions: (i) dialects of Southern Rma, which are close genealogically and geographically; (ii) Jiada Situ, a rGyalrongic language spoken in the north-central region; and (iii) Gochang, a non-Qiangic language spoken in the central region. [C] L-type is found in the northwestern peripheral area. Since all such languages/dialects belong to the rGyalrongic group, I conclude that L-type was developed later in this group. [D] R-type is found in two distant spots: Choyu and Xisuo Situ. Choyu *rə*¹³- is identical with its UPW prefix, but Xisuo Situ has the same initial for URV and DRV. I tentatively conclude that these two forms were developed separately; thus, [D] is newer than [A], [B] and [C]. [E] N-type is found in limited spots in the northeastern area. They are dialects of the Northern Rma language, including Mawo and Yadu. Given that the main rivers of both areas flow eastward, the N-type URV prefixes are probably related to the “westward” prefixes with initial *n*- (2.2.6). Since [F] is limited to one spot, it is regarded as a later development. [G] is found only in the non-Qiangic languages. Consequently, the provisional relative chronology of the Qiangic URV prefixes is [A] KH-type > [B] vowel type > [C] L-type > other types.

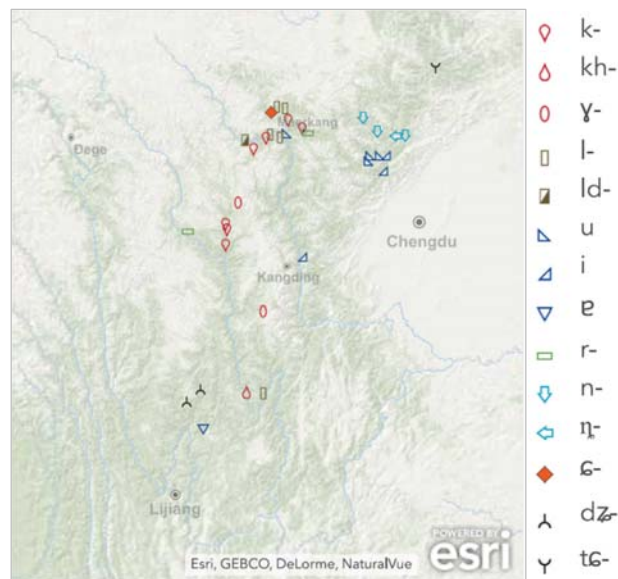


Figure 17. “Upriver” prefixes

2.2.4 “Downriver”

The DRV prefixes can be paired with the URV prefixes discussed in the preceding section. However, the detailed geolinguistic situations of both prefixes are not quite parallel. Languages that have the same DRV prefix with the OUT prefix are limited to the central area, compared with the parallel INW = URV pattern, which shows the widest distribution as discussed in Section 2.2.3. These findings suggest that the functional extension from OUT to DRV, which is apparently parallel to INW to URV, has not diffused, but new forms for DRV have developed in each smaller area.

The DRV prefixes are roughly classified as follows: [A] G-type (Section 2.2.2), [B] H-type (Section 2.2.2; only one example is found: *hæ-*), [C] S-type (Section 2.2.2), [D] with initial *n-* (N-type),³⁰ [E] with initial *v-* (V-type), [F] with initial *tʰ-* (TH-type), [G] with initial *r-* (only one example: *rə-*), and [H] with initial *m-* (M-type). Among these types, [B] H-type is probably derived from cognates of [A] G-type (Section 2.2.2). Each DRV prefix classified into [A] or [B] has the same form as the OUT prefix (Table 3). [A] and [B] are distributed in the mid and southern area. [C] is shared by all Rma languages/dialects. [D] is found in various rGyalrongic languages. [E] and [F] are found in two rGyalrongic languages each ([E] is in two dialects of Khroskyabs and sTodosde, and [F] is in Thobdun and Japhug). [G] is limited to one dialect. Moreover, [H] is found in non-Qiangic languages.

An attempt to ascertain the relative chronology between [A]/[B] and the other types might be difficult because the OUT prefix naturally comes to be used for DRV under the analogy of INW = URV in a limited number of languages. However, [A]/[B] G/H-type is the most widespread among the various languages; thus, I tentatively conclude that they are older than the other types. Consequently, the provisional relative chronology of the other types is [A] G-type (> [B] H-type) > [C] S-type/[D] N-type > [E] V-type/[F] TH-type > other types.

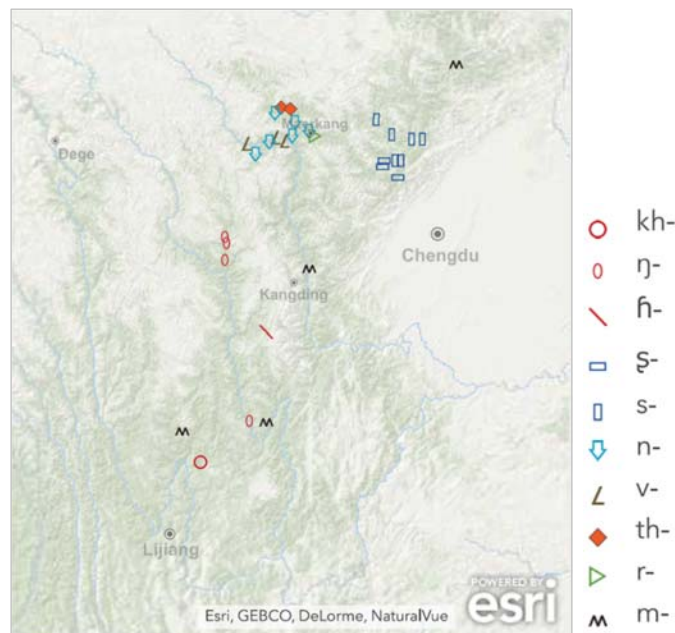


Figure 18. “Downriver” prefixes

³⁰ DRV prefixes of *n*-type are apparently shifted (or extended) from the DWN prefix (2.2.2).

2.2.5 “Eastward”

The EST–WST prefixes, that is, a solar-based pair of directional prefixes, are mostly found in rGyalrongic languages, except for Zhaku Northern Rma. The location of Zhaku is adjacent to the area of the rGyalrongic languages. Such limited distribution suggests that the EST/WST prefixes developed later.

The forms of EST prefixes can be classified into four types: [A] with velar initials (K-type), [B] *u-* (only one example is found), [C] *rə-* (only one example), and [D] *tʰi-* (only one example). From a panoramic viewpoint, [A] K-type apparently correlates with the KH-type of the INW and URV prefixes (Sections 2.1.1 and 2.2.2).³¹

Figure 19 illustrates their geographical distribution. [A] K-type, indicated with red marks, is distributed most widely among these types, while the other types are limited to one spot each. Consequently, this suggests that their relative chronology is [A] K-type > other types.

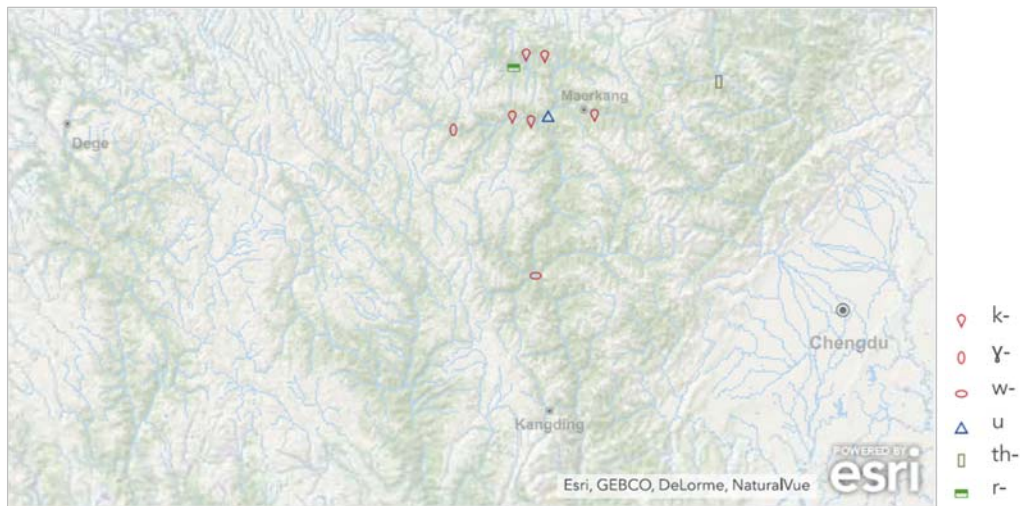


Figure 19. “Eastward” prefixes

2.2.6 “Westward”

The WST prefixes are divided into two types: [A] with initial *n-* (N-type) and [B] with initial velar stops (G-type). [B] G-type apparently correlates with the G-type of the OUT and DRV prefixes (Sections 2.2.2 and 2.2.4).

Figure 20 illustrates their geographical distribution. [A] N-type distributes in the center of the rGyalrongic area, and [B] G-type is found in the regions adjacent to the region where the similar form is used for the OUT/DWN prefixes (2.2.2, 2.2.4). For example, Puxi sTodsde has [B] G-type. It seems a reasonable hypothesis that the WST prefix in this language was developed from the DRV prefix since the main river there flows westward. Consequently, I conclude that the relative chronology is [A] N-type > [B] G-type.

³¹ Lin (2017: 80) hypothesizes the opposite semantic shift, that is, the EST prefix is used for the notion of “enter” in Xisuo Situ because in a rGyalrong house, the entrance is designed to face west, that is, the movement “enter” moves eastwards from the entrance.

The abovementioned findings suggest that the solar-based categories are relatively new among the directional prefixes in the Qiangic area. From a local viewpoint, however, the EST/WST prefixes are widely found in the rGyalrongish languages distributed around Maerkang. This distribution may suggest that the solar-based categories preceded the river-based categories in the rGyalrongish languages (as well as the region-based categories, which most of them lack).³²

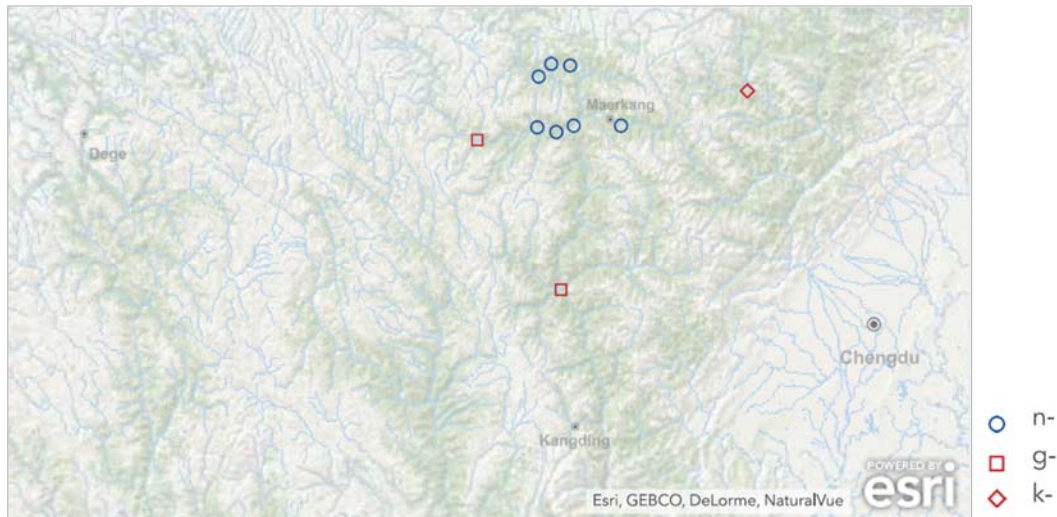


Figure 20. “Westward” prefixes

3 Conclusions

Each language in the Qiangic group has a set of directional prefixes. However, the number of distinct directional prefixes varies among languages/dialects. I first pointed out a tendency for northern languages to have a higher number of directional prefixes and for southern languages to have a lower number of directional prefixes. This finding suggests the areal development of part of the directional prefixes.

In this study, I examined the areal distributions of the following eight directional prefixes from a geolinguistic perspective: (i) “upward”, (ii) “downward”, (iii) “inward”, (iv) “outward”, (v) “upriver”, (vi) “downriver”, (vii) “eastward” and (viii) “westward”. These directional categories are based on nature such as landforms or space and are relatively common in Qiangic. I concluded that among these directional categories, (i)–(iv) are basic in the Qiangic language area. In other words, the other categories, (v)–(viii), developed later in each local area.

Geolinguistic analysis of the geographical distribution of the forms of directional prefixes resulted in the following hypotheses on each directional prefix:

(i) The prospective relative time depth of the forms for “upward” prefixes: First, the T-type spread in the whole area. Next, the vowel type emerged in the northwestern area. Moreover, the *r*-type, derived from the T-type, spread later from the northwestern area. G-type developed in non-Qiangic languages under the influence of Qiangic languages.

³² This hypothesis is consistent with Sun’s (2000) and Lin’s (2002) shared opinion that rGyalrongish primarily distinguishes the solar orientation axis, that is, east vs. west.

(ii) That of the forms for “downward” prefixes: First, the *nə*-type spread widely in the whole area. Next, the *a*-type originated from the northeast. Finally, the *na*-type, that is, a combined form with the initial *n* and the vowel *a*, was formed in the area where the former two types met. Later, the *ə*-type was derived from the *a*-type. M-type was developed in non-Qiangic languages. Other forms were also developed in certain languages/dialects of the northern peripheral area.

(iii) That of the forms for “inward” prefixes: KH-type > L-type > vowel type/N-type. Moreover, in the most central part of the Qiangic area, the “inward” prefixes were functionally extended to “upriver”.

(iv) That of the forms for “outward” prefixes: G-type (> H-type) > S-type > other types. H-type was derived from G-type. The functional extension from “outward” to “downriver”, which is apparently parallel with that from “inward” to “upriver”, is found in limited parts of the central area.

(v) That of the forms for “upriver” prefixes: KH-type > vowel type > L-type > other types. In the northern peripheral areas, the “upriver” prefixes were developed locally.

(vi) That of the forms for “downriver” prefixes: G-type (> H-type) > S-type/N-type > V-type/TH-type > other types. The upriver–downriver pair shows a more limited distribution and more diversified types than the INW–OUT pair. Moreover, the hypothesized oldest forms of the “upriver” and “downriver” prefixes are common with the “inward” and “outward” prefixes respectively. These facts suggest that the inward–outward pair is the more basic categories in the Qiangic language area.

(vii) That of the forms for “eastward” prefixes: K-type > other types.

(viii) That of the forms for “westward” prefixes: N-type > G-type. The limited distribution of the eastward–westward prefixes suggests that these categories are relatively new in the whole Qiangic area; however, in the rGyalrongish languages, they may have preceded the river-based categories.

The landscape of the Qiangic language area is mountainous. The functional link between the directional notions of INW–OUT and URV–DRV seems natural since in such an area, the upriver direction reaches deep into the mountain, whereas the downriver direction reaches open land. Moreover, this study also mentioned functional shifts of certain forms such as *n*-type. However, comprehensive research on the functional shifts of Qiangic directional prefixes is a topic for further research because it should include other directional categories out of the scope of this paper, such as “neutral/undefined”, “away from the (deictic) center/speaker” and “toward the (deictic) center/speaker”.

ABBREVIATIONS

DRV	downriver	OUT	outward
DWN	downward	UPW	upward
EST	eastward	URV	upriver
INW	inward	WST	westward

REFERENCES

- Arakawa, Shintaro. Forthcoming. “Directional prefixes in Tangut”. In: Shintaro Arakawa; and Ikeda Takumi (eds.), *Grammatical phenomena of Sino-Tibetan languages 3: Functions of directional prefixes*. Kyoto: Kyoto University.
- Campbell, Lyle. 2017. “Why is it so hard to define a linguistic area?” In: Hickey Raymond (ed.), *The Cambridge handbook of areal linguistics* 19–39. Cambridge: Cambridge University Press.
- Chirkova, Katia. 2012. “The Qiangic subgroup from an areal perspective: A case study of Languages of Muli”. *Language and Linguistics* 13.1: 133–170.
http://www.ling.sinica.edu.tw/LL/en/ejournal.Content/13_1 (Accessed 19 March 2020)
- Chirkova, Katia. 2015. “Xùmǐ 旭米 language”. In: Sybesma, Rint (editor-in-chief), *Encyclopedia of Chinese language and linguistics*. Online. Leiden: Brill. DOI: 10.1163/2210-7363_ecll_COM_00000253.
- Daudey, Henriëtte. 2014. A grammar of Wadu Prinmi. Dissertation, La Trobe University.
- Ding, Picus S. 2014. *A grammar of Prinmi: Based on the central dialect of northwest Yunnan, China*. Leiden/Boston: Brill [Languages of the Greater Himalayan Region].
- Driem, George van. 2001. *Languages of the Himalayas: An ethnolinguistic handbook of the greater Himalayan region, Vol. 1*. Leiden: Brill.
- Duoerji. 1998. *Daofuyu Geshizhabua yanjiu* (A study of Geshizha sTau). Beijing: Zhongguo Zangxue Chubanshe.
- Evans, Jonathan. P. 2001. *Introduction to Qiang phonology and lexicon: Synchrony and diachrony*. Tokyo: ILCAA, Tokyo University of Foreign Studies.
- Evans, Jonathan P. 2004. “Reconstruction of Proto-Qiang verb inflection”. In: Lin, Ying-chin; Hsu Fang-min; Lee Chun-chih; Sun, Jackson T.-S; Yang Hsiu-fang; and Ho Dah-an (eds.), *Studies on Sino-Tibetan languages: papers in honor of professor Hwang-chen Gong on his seventieth birthday*, 201–238. Taipei: Institute of Linguistics, Academia Sinica [Language and Linguistics Monograph Series No. W-4].
- Evans, Jonathan P; and Sun, Jackson T.-S. 2015. “Qiāng 羌 language”. In: Sybesma, Rint (editor-in-chief), *Encyclopedia of Chinese language and linguistics*. Online. Leiden: Brill. DOI: 10.1163/2210-7363_ecll_COM_00000347.
- Fei, Xiaotong. 1980. “Guanyu woguo minzu shibie wenti” (On ethnic identification in China). *Zhongguo Shehui Kexue* 1980.1: 94–107.
- Fukushima, Chitsuko. 2010. “Integrating linguistic maps to show scholarly interpretation”. *Dialectologia, Special Issue 1*: 47–61. <http://id.nii.ac.jp/1661/00000196/> (Accessed 19 March 2020)
- Fukushima, Chitsuko. 2017. “Methods and principles of geolinguistics”. In: Suzuki Hiroyuki; and Endo Mitsuaki (eds.), *Proceedings of the workshop “Geolinguistic method and Southeast Asian linguistics”* 10–15. Fuchu: Research Institute for Languages Cultures of Asia and Africa, Tokyo University of Foreign Studies. <https://publication.aa-ken.jp/> (Accessed 19 March 2020)
- Gong, Qunhu. 2007. *Zhabayu yanjiu* (A study of the nDrapa language). Beijing: Minzu Chubanshe.
- Gong, Xun 2018. *Le rgyalrong zbu, une langue tibéto-birmane de Chine du Sud-ouest. Une étude descriptive, typologique et comparative*. Dissertation, Institut National des Langues et

- Civilisations Orientales. <https://halshs.archives-ouvertes.fr/tel-01894726v2> (Accessed 19 March 2020)
- Hashimoto, Mantaro J. 1976. "Language diffusion on the Asian continent: Problems of typological diversity in Sino-Tibetan". *Computational Analyses of Asian and African Languages* 3: 49-65.
- Huang, Bufan. 1991. "Muyayu" (Darmdo Minyag). In: Dai, Qingxia; Huang Bufan; Fu Ailan; Renzengwangmu; and Liu Juhuang. *Zangmianyu shiwuzhong* (Fifteen Tibeto-Burman languages) 98-131. Beijing: Beijing Yanshan Chubanshe.
- Huang, Bufan. 2003/1991. "Qiangyuzhi" (The Qiangic branch). In: Ma Xueliang (editor-in-chief), *Hanzangyu gailun* (An introduction to Sino-Tibetan languages) 176-307. Beijing: Minzu Chubanshe.
- Huang, Bufan. 2007. *Lawurongyu Yanjiu* (A study of Khroskyabs). Beijing: Minzu Chubanshe.
- Huang, Bufan. 2009. *Chuanxi Zangqu de yuyan* (Languages of west Sichuan Tibetosphere). Beijing: Zhongguo Zangxue Chubanshe.
- Huang, Chenglong. 2007. *Puxi Qiangyu yanjiu*. (A study of Puxi Qiang). Beijing: Minzu Chubanshe.
- Jacques, Guillaume. 2008. *Jiarongyu yanjiu* (A study of rGyalrong). Beijing: Minzu Chubanshe.
- Jacques, Guillaume. 2014. *Esquisse de phonologie et de morphologie historique du tangoute*. Leiden: Global Oriental.
- Jacques, Guillaume; and Michaud Alexis. 2011. "Approaching the historical phonology of three highly eroded Sino-Tibetan Languages". *Diachronica* 28.4: 468-498. DOI: 10.1075/dia.28.4.02jac (With online appendix, DOI: 10.1075/dia.28.4.02jac.additional).
- Jacques, Guillaume; Lai Yunfan; Antonov Anton; and Lobsang Nima. 2017. "Stau (Ergong, Horpa)". In: Thurgood Graham; and LaPolla Randy J. (eds.), *The Sino-Tibetan Languages*, 2nd ed, 595-613. London/New York: Routledge.
- Li, Jiang. 2015. *A grammar of Guiqiong: A language of Sichuan*. Leiden/Boston: Brill [Languages of the Greater Himalayan Region].
- Lai, Yunfan. 2017. *Grammaire du khroskyabs de Wobzi*. Dissertation, Université Sorbonne Nouvelle - Paris 3. <https://tel.archives-ouvertes.fr/tel-01571916> (Accessed 19 March 2020)
- Lai, Yunfan; Wu Meishin; and Johann Mattis List. 2018. "Rethinking the orientational prefixes in Rgyalrongic languages: The case of Siyewu Khroskyabs". *Proceedings of the 51st International Conference on Sino-Tibetan Languages and Linguistics*. Kyoto: Kyoto University. <http://hdl.handle.net/2433/235288> (Accessed 19 March 2020)
- LaPolla, Randy J. 1994. "Parallel grammaticalizations in Tibeto-Burman languages: Evidence of Sapir's 'drift'". *Linguistics of the Tibeto-Burman Area* 17.1: 61-80.
- LaPolla, Randy J.; and Huang Chenglong. 2003. *A grammar of Qiang*. Berlin/New York: Mouton de Gruyter.
- LaPolla, Randy J. (ed.). 2019. *Sino-Tibetan linguistics*. London/New York: Routledge [Critical Concepts in Linguistics].
- Lin, You-Jing. 2002. "A dimension missed: East and west in Situ rGyalrong orientation marking". *Language and Linguistics* 3.1: 27-42. http://www.ling.sinica.edu.tw/LL/en/ejournal.Content/3_1 (Accessed 19 March 2020)
- Liu, Guangkun. 1998. *Mawo Qiangyu yanjiu* (A study of Mawo Qiang). Chengdu: Sichuan Minzu Chubanshe.

- Lu, Shaozun. 2001. *Pumiyu fangyan yanjiu* (A study of Prinmi dialects). Beijing: Minzu Chubanshe.
- Matisoff, James A. 1991. "Sino-Tibetan linguistics: Present state and future prospects". *Annual Review of Anthropology* 20: 469–504.
- Matisoff, James A. 2003. *Handbook of Proto-Tibeto-Burman: System and philosophy of Sino-Tibetan reconstruction*. Berkeley/Los Angeles: University of California Press.
- Matisoff, James A. 2004. "'Brightening' and the place of Xixia (Tangut) in the Qiangic branch of Tibeto-Burman". In: Lin, Ying-chin; Hsu Fang-min; Lee Chun-chih; Sun, Jackson T.-S; Yang Hsiu-fang; and Ho Dah-an (eds.), *Studies on Sino-Tibetan languages: papers in honor of professor Hwang-cherng Gong on his seventieth birthday*, 327–352. Taipei: Institute of Linguistics, Academia Sinica [Language and Linguistics Monograph Series No. W-4].
- Matisoff, James A. 2015. *The Sino-Tibetan etymological dictionary and thesaurus*. Berkeley: The Regents of the University of California.
- Matisoff, James A. 2019. "Brightening and Tibeto-Burman subgrouping". Handout presented at the 52nd International Conference on Sino-Tibetan Languages and Linguistics.
- Michaud, Alexis. 2015. *Online Na-English-Chinese dictionary* (version 1.0). http://lacito.vjf.cnrs.fr/pangloss/dictionaries/na/dictionary_eng_mp3.pdf (Accessed 19 March 2020)
- Michaud, Alexis; Zhong Yaoping; and He Limin. 2015. "Nàxī 納西 language / Naish languages". In: Sybesma, Rint (editor-in-chief), *Encyclopedia of Chinese language and linguistics*. Online. Leiden: Brill. DOI: 10.1163/2210-7363_ecll_COM_00000247. (First published online: 2015)
- Nagano, Yasuhiko. 1984. "Gyarongo no hookoo setsuji" (The directional prefixes of rGyalrong). *Kikan Jinruigaku* 15.3: 3–52.
- Nagano, Yasuhiko. 2001. "Gyarongo no kihon koozoo" (An outline of Gyarong grammar). *Bulletin of the National Museum of Ethnology* 26.1: 131–164.
- Nagano, Yasuhiko; and Marielle Prins. 2013. *rGyalrongic languages database*. <http://htq.minpaku.ac.jp/databases/rGyalrong/> (Accessed 19 March 2020)
- Nishi, Yoshio. 1985. "Chuugoku kokunai no Chibetto-Birumagokei no gengo ni mirareru hookooshiji no dooshi setsuji" (Directional verb prefixes in Tibet-Burman languages of China). In: Nishida Tatsuo (ed.), *Chibetto-Birumashogo no gengoruikeegakuteki kenkyuu (Showa 59-nendo kagakukenkyuuhi hojokin (soogokenkyuu A) seekahookokusho)* (Typological studies of Tibeto-Burman languages (Outcome report for the grant-in-aid for scientific research [co-operative research A] for the fiscal year Showa 59)) 26–45. Kyoto: Kyoto University.
- Nishida, Tatsuo. 1987. "Chibettogo no hensen to moji" (The Tibetan language: Transition and scripts). In: Nagano Yasuhiko; and Tachikawa Musashi (eds.), *Chibetto no gengo to bunka* (Languages and culture in Tibet) 108–169. Tokyo: Tojusha.
- Nishida, Tatsuo. 1989. "Seikago" (Tangut). In: Kamei, Takeshi; Kōno, Rokurō; and Chino Eiichi (eds.), *The Sanseido encyclopaedia of linguistics, Vol. 2: Languages of the world, Part 2*: 408–429. Tokyo: Sanseido.
- Post, Mark W. 2019. "Topographical deixis in Trans-Himalayan (Sino-Tibetan) languages". *Transactions of the Philological Society* 117.2: 234–255. DOI: 10.1111/1467-968X.12155.
- Marielle, Prins. 2017. *A grammar of rGyalrong, Jiǎomùzú (Kyom-kyo) Dialects*. Leiden: Brill.

- Roche, Gerald; and Suzuki Hiroyuki. 2017. "Mapping the minority languages of the Eastern Tibetosphere". In: Kurabe Keita; and Endo Mitsuaki (eds.), *Studies in Asian geolinguistics VI: "Means to count nouns" in Asian languages* 28–42. Tokyo: ILCAA, Tokyo University of Foreign Studies. <https://publication.aa-ken.jp/> (Accessed 19 March 2020)
- Roche, Gerald; and Suzuki Hiroyuki. 2018. "Tibet's minority languages: Diversity and endangerment". *Modern Asian studies* 52.4: 1227–1278. DOI: 10.1017/S0026749X1600072X.
- Sagart, Laurent; Jacques, Guillaume; Lai Yunfan; Ryder Robin J; Valentin Thouzeau; Greenhill Simon J; and Johann-Mattis List. 2019. "Dated language phylogenies shed light on the ancestry of Sino-Tibetan". *Proceedings of the National Academy of Sciences of the United States of America* 116.21: 10317–10322. DOI: 10.1073/pnas.1817972116.
- Shi, Shuo (editor-in-chief). 2009. *Zang-Yi zoulang: Wenming qi yuan yu minzu yuan liu* (The Tibeto-Lolo corridor: The origin of the culture and people). Chengdu: Sichuan Renmin Chubanshe.
- Shirai, Satoko. 2009. "Directional prefixes in nDrapa and neighboring languages: An areal feature of western Sichuan". In: Nagano Yasuhiko (ed.), *Issues in Tibeto-Burman historical linguistics*, *Senri Ethnological Studies* 75: 7–20. Suita: National Museum of Ethnology. DOI: 10.15021/00002555.
- Shirai, Satoko. 2018. "An analysis of the aspect-marking function of directional prefixes in nDrapa". In: Hayasi Tooru et al. (eds.), *Diversity and dynamics of Eurasian languages: The 20th commemorative volume*, 405–420. Kobe: Consortium of Studies of Eurasian Languages [Contribution to the Studies for Eurasian Languages Series Vol. 20]. http://el.kobe-ccn.ac.jp/csel/?page_id=539 (Accessed 19 March 2020)
- Sibata, Takesi. 1969. *Gengochirigaku no hoohoo* (Methods in linguistic geography). Tokyo: Chikuma Shobo.
- Sims, Nathaniel. 2016. "Towards a more comprehensive understanding of Qiang dialectology". *Language and Linguistics* 17.3: 351–381. DOI: 10.1177/1606822X15586685.
- Sims, Nathaniel and Genetti Carol. 2017. "The grammatical encoding of space in Yonghe Qiang". *Himalayan Linguistics* 16.1: 99–140. DOI: 10.5070/H916130636.
- Song, Lingli. 2011. *Guiqiongyu yanjiu* (A study of Gochang). Beijing: Minzu Chubanshe.
- Sun, Hongkai. 1982. "Qiangyu zhishu wenti chutan" (The first approach to the classification of Qiangic languages). In: Minzu Yuwen Bianjibu (ed.), *Minzu yuwen yanjiu wenji* (A research collection on ethnic language and literature), 189–224. Xining: Qinghai Minzu Chubanshe.
- Sun, Hongkai. 1983. "Chuanxi minzu zoulang diqu de yuyan" (Languages of the ethnic corridor in Western Sichuan). In: Fengming Li (ed.), *Xinan minzu yanjiu* (Studies of the Ethnic Groups of Southwestern China) 429–454. Chengdu: Sichuan Minzu Chubanshe. (Translated into English by Jackson Sun in *Linguistics of the Tibeto-Burman Area* 13.1: 1–31, 1990.)
- Sun, Hongkai. 2001. "Lun Zangmianyu zhong de Qiangyuzhi yuyan" (On the languages of the Qiangic branch in Tibeto-Burman). *Language and Linguistics* 2.1: 157–181. http://www.ling.sinica.edu.tw/LL/en/ejournal.Content/2_1 (Accessed 19 March 2020)
- Sun, Hongkai. 2016. *Zangmianyu Qiangyuzhi yanjiu* (A study of the Qiangic branch in Tibeto-Burman). Beijing: China Social Sciences Press.
- Sun, Hongkai; Xu, Dan; Liu Guangkun; and Lurongduoding. 2014. *Shixingyu yanjiu* (A study of Shihing). Beijing: Minzu Chubanshe.

- Sun, Jackson T.-S. 2000. "Parallelisms in the verb morphology of Sidaba rGyalrong and Guanyinqiao in rGyalrongic". *Language and Linguistics* 1.1: 161–190.
http://www.ling.sinica.edu.tw/LL/en/ejournal.Content/1_1 (Accessed 19 March 2020)
- Sun, Jackson T.-S. 2017. "Tshobdun Rgyalrong". In: Thurgood Graham; and LaPolla Randy J. (eds.), *The Sino-Tibetan Languages*, 2nd ed, 557–571. London/New York: Routledge.
- Suzuki, Hiroyuki. 2012. "Ergative marking in Nyagrong–Minyag (Xinlong, Sichuan)". *Linguistics of the Tibeto-Burman Area* 35.1: 35–48.
- Thurgood, Graham. 1985. "The 'Rung' languages: Notes on their proto-morphosyntax and subgrouping". *Acta Orientalia* 46: 79–99.
- Thurgood, Graham. 2017. "Sino-Tibetan: genetic and areal subgroups". In: Thurgood Graham; and LaPolla Randy J. (eds.), *The Sino-Tibetan Languages*, 2nd ed, 3–39. London/New York: Routledge.
- Wang, Tianxi. 1991. "Queyuyu" (Choyu). In: Dai, Qingxia; Huang Bufan; Fu Ailan; Renzengwangmu; and Liu Juhuang. *Zangmianyu shiwuzhong* (Fifteen Tibeto-Burman languages), 46–63. Beijing: Beijin Yanshan Chubanshe.
- Yin, Weibin. 2007. *Yelong Lawurongyu yanjiu* (A study of Yelong Khroskyabs). Beijing: Minzu Chubanshe.
- Zhang, Menghan; Yan Shi; Pan Wuyun; and Jin Li. 2019. "Phylogenetic evidence for Sino-Tibetan origin in northern China in the Late Neolithic". *Nature* 569: 112–115. DOI: 10.1038/s41586-019-1153-z.
- Zhang, Shihong. 2016. *A reference grammar of Ersu, a Tibeto-Burman language of China*. München: LINCOM GmbH [LINCOM Studies in Asian Linguistics 85].
- Zhang, Shuya. 2016. *La phonologie et la morphologie du dialecte de Brag-dbar du Rgyalrong Situ*. Master's thesis. Institut National des Langues et Civilisations Orientales. https://www.academia.edu/26558458/La_phonologie_et_la_morphologie_du_dialecte_de_Brag-dbar_du_rgyalrong_situ (Accessed 19 March 2020)
- Zhang, Xi and Huang Chenglong (editor-in-chief). 2015. *Diyu lengjing: Zang-Qiang-Yi zoulang yanjiu xinshijiao* (The prism of regions: New perspectives on the study of Tibeto-Qiang-Lolo corridor). Beijing: Xueyuan Chubanshe.
- Zheng, Wuxi. 2017. *A grammar of Longxi Qiang*. München: LINCOM GmbH [LINCOM Studies in Asian Linguistics 86].

Satoko Shirai
shirai.satoko.dolma5@gmail.com