

# Towards a More Comprehensive Understanding of Qiang Dialectology\*

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Dialectology in the Qiang languages is still an underdeveloped field of study. Previous accounts of Qiang varieties have oversimplistically described all varieties as belonging to one of two groups, Northern Qiang and Southern Qiang, based on broad typological features. This article demonstrates that previous subgroupings are inadequate and cannot account for the diversity of Qiang varieties, such as the previously undescribed Yonghe variety. The implication of this finding is that an entirely new approach to subgrouping of Qiang varieties is required. This paper not only deconstructs the previous subgroupings, but also puts forward a new scheme for subgrouping based on shared innovations and individual-identifying evidence in order to show which groupings have been established and to show where further work is needed.

Key words: dialectology, Qiang, statistical analysis, subgrouping methodology, Tibeto-Burman

## 1. Introduction

Qiang is an eastern Tibeto-Burman language spoken in the Aba Tibetan-Qiang Autonomous Prefecture in the mountainous region of northwestern Sichuan, China. The main loci of Qiang speakers are in Heishui, Mao, Wen, and Li counties. Qiang is spoken by about 110,000 people, which include the ethnic Qiang as well as ethnic Tibetans. The Qiang language is one of many languages in the ‘Sichuan Ethnic Corridor’.

This paper has two aims. The first aim is to show that previous accounts of Qiang dialectology are flawed and cannot account for the complexity of the Qiang language complex.<sup>1</sup> This will be accomplished by demonstrating that the previously undocumented Yonghe variety does not fit the mold of Northern Qiang (NQ) or Southern Qiang (SQ). The second aim, in light of the inadequacy of current theories about Qiang varieties, is to put forward an entirely new subgrouping scheme on the basis of shared innovations. This new approach will be based on ‘individual-identifying’ evidence rather than ‘type-identifying’ evidence (Nichols 1996; see also LaPolla 2012, 2013).

As a result of applying this new methodology, it becomes clear that the Yonghe variety does not belong to NQ or SQ but, rather, belongs in a separate group along with the Goukou variety.

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<sup>1</sup> It has been stated that Qiang ‘is better treated as a cluster of closely related languages and their dialects, as many of its varieties are not mutually intelligible’ (Evans & Sun 2013:1). Thus, I will use the term *varieties* rather than *language* or *dialect*. The issue of language versus dialect in the context of Qiang remains for future research.

This new group, comprised of Yonghe and Goukou, which can be called ‘Southeastern (SE) Maoxian’, has thus far escaped recognition in previous classifications of Qiang.

The structure of the paper is as follows: §2 is a brief introduction to the phonology of the Yonghe variety, §3 will give an overview of previous subgroupings proposed in the literature as well as the typological characteristics given as evidence for those subgroupings, and §4 will show that Yonghe does not fit into any of the previous subgroupings of Qiang and thus demonstrate that those groups are not valid. §5 introduces a new methodology for subgrouping and rigorously applies it to the Qiang varieties in order to present a new subgrouping scheme by first establishing the SE Maoxian subgroup and secondly by applying the methodology to other varieties in order to show which groupings have been established and to show where further work is needed. Lastly, §6 provides a summary of the paper and proposes directions for further research.

## 2. The Yonghe variety

Yonghe is a small, geographically central variety of Qiang spoken in the Yonghe Township of southeastern Mao County. The population of the Yonghe Township is about 2,700, but the number of speakers is less than that because not all villages in Yonghe still speak Qiang. For example, in Yongning village, many people younger than 30 only have a passive knowledge of Qiang. The Yonghe variety is highly endangered and the Sichuanese variety of Mandarin is rapidly replacing Qiang in the more accessible villages. The Yonghe data presented in this paper are from the Ka’er village and are representative of the speech of the valley as a whole. Here I will present a brief overview of the consonants, vowels, and syllabic structure of the Yonghe variety. For a more detailed account of Yonghe phonology see Sims (2014).

### 2.1 Consonant initials in Yonghe

The following consonant initial phonemes have been noted thus far in Yonghe (Table 1).

**Table 1:** Consonant phonemes in Yonghe

Labial	Dental	Retroflex	Palatal	Velar	Uvular	Glottal
p	t			k	q	
ph	th			kh	qh	
b	d			g		
	ts	tʂ	tɕ			
	tsh	tʂh	tɕh			
	dz	dʂ	dʑ			
	s	ʂ	c	x	χ	h
	z	ʐ	z	ɣ	ʁ	ɦ
m	n		ɲ			
	l, ɭ					
w			j, ɥ			

*Note:* Yonghe previously was described as lacking uvular phonemes (Sims 2014). This analysis was based on data from one speaker, who did not have uvular consonants in his speech. Subsequent study of Yonghe Qiang has revealed that other speakers do indeed have uvular phonemes in their speech. More research is needed to determine the sociolinguistic factors (if there are any) that influence the presence or absence of uvulars among Yonghe Qiang speakers.

## 2.2 Vowels

Yonghe has nine basic vowel positions and does not have any native diphthongs (Table 2).

**Table 2:** Yonghe vowel inventory

	Front	Central	Back
High	i, y	ɨ	u
Mid	ɛ	ə	ɔ
Low	æ		ɑ

All but the mid vowels /ɛ, ɔ/ and the high front vowel /i/ can be rhoticized. Some forms have differences in vowel length and this was analyzed as phonemic vowel length distinction by Sims (2014). However, there are at least two reasons for questioning the phonemic status of these length distinctions. Firstly, forms with long vowels in Yonghe do not correlate with long vowels in other dialects, nor does vowel length have a morphological function as it does in other varieties such as Ronghong (LaPolla with Huang 2003:25). Secondly, would-be minimal pairs of vowel length invariably also have differences in pitch. Length is also correlated with stress placement. For example, long vowels in monosyllabic forms have a rising pitch, as can be seen in the forms [xýʔ] ‘to steal’, which has a high pitch, and [xýʔ] ‘incense’, which has a low rising pitch pattern. Also, unstressed syllables tend to be longer in disyllabic forms. Suprasegmentals in Yonghe are not yet well understood and are unfortunately beyond the scope of this paper.

## 2.3 Syllable structure

Yonghe Qiang does not have any consonant clusters or phonemic consonant codas. The maximal syllable structure possible is a single consonant initial, followed by a glide, followed by a vowel nucleus which can in turn be followed by a glide: (Ci)(G)V(G). Examples of the possible syllable types are given in Table 3 below.

**Table 3:** Yonghe syllable canon

<b>V</b>	ɑ	1sg
<b>VG</b>	ə-j	‘one-CL’
<b>CV</b>	xy	‘steal’
<b>CGV</b>	ts <sup>h</sup> wæ	‘to plant’
<b>CGVG</b>	tʂwɑ-j	‘to have-EVID’

### 3. Previous work on dialectology

In this section I will discuss the previous work on dialectology in Qiang and give an overview of the different classification schemes in the literature.

Wen (1941) was the first to present a classification of Qiang varieties. He presented eight different groups of varieties. The basis for Wen's subgrouping was 'primarily on geographical grounds' (Thurgood 1985:392). The group names and locations are given in Table 4.

**Table 4:** Subgrouping of Qiang varieties by Wen (1941)

Subgroup names	Locations
1. Wa Si	S Wenchuan County
2. Yan Men	N Wenchuan County
3. Zhong San Ku	NE Li County
4. Hou Er Gu	W Li County
5. Jiu Zi Tun	NW Li County
6. Pu Xi	SW Li County
7. Heishui	SE Heishui
8. Luhua	NW Heishui

As seen in this table, the first two groups split Wenchuan County into two different varieties. The next four groups deal with the division of varieties in Li County, and the final two divide Heishui County into two groups. Wen did not use data from Mao County and thus his classification scheme is lacking as it misses a large section of the Qiang speaking area.

H. Sun (1981) was the first to divide Qiang varieties into two groups: NQ and SQ. This subgrouping is by far the most widely cited in the literature on Qiang and has hitherto been the basis for all subsequent groupings. H. Sun was the first to include Mao County Qiang varieties in his classification. Liu (1998) presents a classification scheme nearly identical to that of H. Sun (1981). The only difference in Liu's classification is the inclusion of the Jiaochang and Sanlong subgroups into SQ. Jiaochang and Sanlong were not mentioned by H. Sun (1981). Liu was the first to give a comprehensive list of the subgroups within the proposed SQ and NQ categories. A summary of these subgroupings is given in Table 5 (Liu 1998:16, from Evans 2001a:5).

**Table 5:** NQ and SQ subdialect groupings

NQ subdialects	Locations	Speakers
Luhua	Heishui County: Luhua, Shashiduo, Yangrong, Zegai, Ergulu, Zhuogedu	14,000
Mawo	Heishui County: Mawo, Zhawo, Shuangliusuo, Xi'er, Hongyan, E'en	12,000
Cimulin	Heishui County: Cimulin, Gewo, Wumushu, Rewo, Qinglanggou	9,800
Weigu	Heishui: Weigu, Musu, Longba, Luoduo, Shidiaolou	11,000
Yadu	Heishui County: Waboliangzi, Se'ergu Mao County: Chibusu, Yadu, Qugu, Weicheng	23,000

SQ subdialects	Locations	Speakers
Dajishan	Li County: Xuecheng, Shangmeng, Xiameng, Xinglong, Ganbao, LieLie, Jiuzi, Muka, Putou, Puxi	7,400
Taoping	Li County: Taoping, Jiashan, Ganxi, Sancha, Zengtou, Niushan, Xishang, Tonghua, Gucheng	4,900
Longxi	Wenchuan County: Longxi, Bulan, Baduo, Xiazhuang, Mushang	3,300
Mianchi	Wenchuan County: entire county, except for Longxi area	15,700
Heihu	Mao County: Heihu, Sujiaping, Feihong, Goukou, Weimen, Jiaoyuanping	16,000
Sanlong	Mao County: Fengyi, Sanlong, Shaba, Huilong, Baixi, Wadi, Yazhuzhai	15,000
Jiaochang	Mao County: Jiaochang, Shidaguan, Taiping, Songpinggou; Songpan County: the Xice area of Zhenjiangguan; Beichuan: certain areas.	19,000

This table contains several factual errors. This is, in part, due to the fact that the subgrouping scheme confuses localities and administrative townships with actual Qiang varieties. In some cases, multiple varieties of Qiang are spoken in a single administrative township. For example, within Mawo Township several villages speak Musu Qiang rather than Mawo Qiang (J. Sun & Evans 2013). The reader is directed to J. Sun & Evans (2013:136) for a confirmed list of modern-day localities speaking Mawo Qiang.

The information in Table 5 is also somewhat outdated. Although much of H. Sun and Liu's work on Qiang was published in the 1980s and 1990s, the data used come from fieldwork conducted much earlier in the late 1950s (H. Sun 1987). Since then, some of the localities listed no longer speak Qiang and have switched to Sichuanese. Localities listed by Liu (1998) that are no longer Qiang-speaking include at least Feihong, Shaba, Weimen, Diexi, and Shidaguan in Mao County alone. This information also requires updating because many Qiang villages were destroyed and have been relocated as a result of the 2008 Sichuan Earthquake.

H. Sun and Liu both give broad typological generalizations as to the differences between NQ and SQ (see §3.1), but do not provide an explanation for the subgroupings within NQ and SQ. Liu claims that while the NQ varieties are generally mutually intelligible, the SQ varieties are generally not mutually intercommunicable. On the basis of this reported intelligibility, Evans & Sun (2013:148, note 1) state that while the 'core NQ' varieties constitute a valid group, the SQ varieties do not make up a cohesive group.

B. Huang & Zhou (2006:285–286) follow the binary split between NQ and SQ; however, they propose a subgrouping system different from that of H. Sun (1981) and Liu (1998). They place the Qugu, Yadu, Weicheng, and southern Heishui varieties (considered NQ by Liu 1998) along with the Wadi, Baixi, and Sanlong varieties (considered SQ by Liu 1998) into a single subgroup of NQ that they name the 'Qugu subdialect'. They also change the specification of the Jiaochang variety to be NQ rather than SQ. Furthermore, they add the Yonghe variety to the list of varieties in the Heihu subdialect and change the designation of Heihu as belonging to NQ rather than SQ.

C. Huang (2010:252) notes that the grouping and subgrouping of Qiang varieties remains disputed. He also speculates that the Heihu subgroup (presumably including Yonghe) appears to be closer to NQ varieties on the basis of morphology, although no examples are given.

### 3.1 Criteria for the NQ/SQ groups

The grouping of Qiang into NQ and SQ has been based largely on broad typological characteristics. These characteristics include both phonological characteristics and morphological features. The phonological characteristics include the presence or absence of lexical tone, the number of consonant clusters, the presence or absence of consonant codas, vowel quality distinctions such as vowel length, rhoticity, and uvular vowels. The morphological features include differences in pronominal systems, directional prefixes, and also person marking on verbs. Table 6 gives an overview of these features as well as the references, and specifies whether a feature is considered to be characteristic of NQ or SQ.

**Table 6:** Proposed northern and southern Qiang characteristics

Source	Characteristics	‘Northern’	‘Southern’
H. Sun (1981)	Presence of lexical tone		√
H. Sun (1981)	Loss of initial consonant clusters		√
H. Sun (1981)	Development of secondary consonant codas	√	
H. Sun (1981)	Vowel length distinction	√	
Liu (1998)	Plain versus rhotic vowels	√	
Evans & Sun (2013)	Plain versus uvularized vowels (only for certain NQ dialects)	√	
B. Huang & Zhou (2006)	Case determined suppletion of pronouns		√
Evans (2004)	Loss of number distinction in person marking (all but Taoping)		√

There are at least two problems with using these typological features for grouping dialects. First, these characteristics are considered to be ‘type-identifying’ (Nichols 1996). As such, they are based on the presence or absence of typological features such as tone, vowel quality, consonant clusters, etc. The presence or absence of these features can describe a *type* of language or dialect, but cannot show genetic relatedness. For example, based on a type-identifying standard, English could be considered to be a dialect of northern Qiang because it is atonal, and possesses consonant clusters, rhotic vowels, etc. While this is an absurd example, it shows the problem with using type-identifying evidence for genetic classification and subgrouping. In contrast to type-identifying evidence is ‘individual-identifying’ evidence, which is based on shared innovations. Individual-identifying evidence will be further explained in §4.

Another problem with the NQ/SQ split in particular is that it cannot account for dialects that fall in the middle, or have some but not all of the prescribed characteristics for NQ or SQ. The Yonghe variety (introduced in §2) is an example of such an ‘in between’ variety. In order to show this, I will now examine each of the characteristics given in Table 6 with regard to the Yonghe variety.

### 3.1.1 Tone

It has been claimed that NQ varieties are non-tonal, whereas SQ varieties are tonal (H. Sun 1981). However, a closer look at the different varieties suggests that this distinction is not that clear cut. The influence of Chinese on the development of tone in certain Qiang varieties is well documented (Evans 2001b; also see Stanford & Evans 2012). Evans (2004:221) has noted, ‘The presence or absence of tone in Qiang is more of a measure of Chinese language influence than of genealogical branching.’ For example, research on the ‘SQ’ Puxi variety suggests that tone is not important in that dialect (C. Huang 2004). It is not clear whether or not Yonghe has lexical tones. In Yonghe (as mentioned in §2.2), syllable pitch is correlated with vowel length on monosyllabic forms and is predictable from the stress patterns of polysyllabic words. Further study of tone in Yonghe is needed before the situation will become clear. However, even if Yonghe were shown to have lexical tone, it would not be an important factor in determining the genealogical branching of varieties since the presence or absence of tone is a type-identifying feature and should not be used for genetic subgrouping.

### 3.1.2 Initial consonant clusters

Qiang varieties have widely varying numbers of initial consonant clusters. The difference in number of initial consonant clusters has been cited as a distinction between NQ and SQ. NQ dialects are purported to have large numbers of initial consonant clusters, whereas SQ dialects have much fewer (B. Huang & Zhou 2006; C. Huang 1992; Liu 1998; H. Sun 1981). Here I will argue two reasons why this often repeated observation does not hold as evidence for an NQ/SQ split in Qiang.

First, this type of generalization is a typological one and has no place in an argument for genetic subgrouping. Second, this supposed distinction is only a general tendency displayed by *only some* Qiang varieties. For example:

NQ varieties tend to have about forty distinct initial consonant clusters...while the SQ varieties Longxi and Mianchi have only two to three... Phonologically conservative SQ dialects, such as Taoping, Luobuzhai and Muka, tend to have 14 to 24 initial consonant clusters. (Evans & Sun 2013:7)

Thus we can see that within ‘SQ’, there is wide variation as to the number of initial consonant clusters. Furthermore, there does not seem to be correlation between the number of initial consonant clusters and geographic north versus south. The Yonghe variety is a case in point. If the amount of initial consonant clusters were correlated with geographic location, we might expect to find a medium range of initial consonant clusters in the geographically central Yonghe variety. However, Yonghe has no initial consonant clusters, whereas varieties much further to the south, such as Puxi, have as many as 28 (C. Huang 2007).

Thus, I conclude that the difference in the number of initial consonant clusters in Qiang varieties is not evidence for the categories of NQ and SQ, but rather an exemplification of the incredible diversity of Qiang varieties.

### 3.1.3 Development of secondary codas

The development of consonant codas has been cited as an important distinction between NQ and SQ (H. Sun 1981). It has been argued that, unlike SQ, NQ varieties are coda rich, and that this is the result of the collapsing of two syllables due to trochaic stress patterns (LaPolla with Huang 2003:23; Liu 1984; H. Sun 1981:33–40).

However, the phonemic status of these consonant codas has been called into question by J. Sun (2003a; also see J. Sun & Evans 2013), who argues that NQ varieties such as Mawo are only coda rich at a shallow phonological level and that surface excrescent codas are the result of the regular phonological process of schwa deletion. For more evidence of this view, the reader is directed to J. Sun & Evans (2013:145–147).

Yonghe does not have consonant codas, either at the phonetic or the phonemic level. See Table 7 for a comparison of cognate words across dialects.

**Table 7:** Comparison of coda development in Longxi, Yonghe, and Ronghong

	‘ear’	‘fourteen’	‘kidney’	‘meat’	‘smoke’	‘today’	‘to work’
Longxi	ŋì ká	fià zì	pú lù	pià tshì	mù khú	pú cì	bó lé
Yonghe	‘ŋikɿ	‘haʔzì	‘pəʔnə	‘pæ-tshì	‘mukʰì	‘pì-sì	‘bulɿ
Ronghong	ŋukɿ	haz	ʃpul	pies	mux	pəs	bəl

This table shows that where Longxi has two syllables, those forms have collapsed into monosyllabic forms with codas in Ronghong. In Yonghe, the trochaic stress pattern on these forms has led to the vowels on the second syllable being devoiced, but has not yet led to the development of secondary codas. This is a good illustration of how Yonghe is in many ways an ‘in-between’ variety when compared to dialects previously classified as NQ or SQ, and does not fit either category.

## 3.2 Vowel quality

Vowel quality patterns have also been put forward as a means of classifying varieties as either NQ or SQ. The three types of vowel quality distinctions between NQ and SQ have to do with vowel length distinctions, rhotic vowels, and uvularized vowels. Again, we will examine how Yonghe relates to each of these prescribed typological features of vowel quality.

### 3.2.1 Vowel length

It has been proposed that ‘NQ dialects have phonemic length distinction among non-schwa vowels’ and that ‘Quantity distinctions are not found among SQ dialects’ (Evans & Sun 2013:11). As discussed in §2.2, there are no minimal pairs in Yonghe where vowel length is the only differentiating feature. Even if the length distinctions in Yonghe were phonemic, there is no clear correspondence of forms with long vowels in Ronghong with forms in Yonghe. Also, vowel length in Ronghong mostly reflects ‘a collapsing of a lexical item and a following classifier or locative

postposition, or reflecting the prospective aspect marking’ (LaPolla with Huang 2003:25). Thus, in respect to vowel length it seems that Yonghe is more similar to the ‘SQ’ varieties.

### 3.2.2 Rhotic vowels

The presence or absence of rhotic vowels (also called retroflex vowels) is often referenced as a distinction between NQ and SQ. In the literature, SQ dialects are described as not having rhotic vowels (B. Huang & Zhou 2006; Liu 1998; H. Sun 1981). Similarly, Evans & Sun (2013:10) note that: ‘In SQ r-like sounds always belong to the initial part of the syllable.’ Yonghe, however, has rhoticized vowels that contrast with plain vowels as shown in Table 8. Rhotic vowels are transcribed using the symbol /-ɿ/.

**Table 8:** Vowel rhoticization in Yonghe

/ba/	‘old’	/baɿ/	‘big’
/p <sup>h</sup> æ/	‘some’	/p <sup>h</sup> æɿ/	‘wet’
/lǝ/	‘CL for long object’	/lǝɿzɿ/	‘book’
/tɕi/	‘to build’	/tɕiɿ/	‘to melt’
/mu/	‘fire’	/muɿ/	‘corpse’
/cy/	‘to teach’	/bunǝ-ɿcyɿ/	‘earthworm’

Evidence that this rhotic quality is indeed a feature of the vowel and not a consonant /ɿ/ comes from the fact that this rhotic quality participates in vowel harmony. If one syllable of a compound or prefix + root combination is rhotic, this quality can spread. This rhotic vowel harmony has thus far only been found in NQ varieties such as Ronghong (LaPolla with Huang 2003). In varieties that do have rhotic harmony, such as Ronghong, the rhotic vowel quality only spreads leftward and this process of rhotic harmony is being lost in the younger generation of speakers (Evans & Huang 2007). In Yonghe, however, rhotic harmony is still used by speakers of different ages and can be both regressive and progressive. The examples in (1a) and (1b) illustrate regressive rhotic harmony in the compounds ‘three swigs’ and ‘pigweed’. The example form in (1c) demonstrates progressive harmony.

- (1) a. sǝ ‘three’ + xwuɿ ‘swig’ > sǝɿ-xwuɿ ‘three swigs’  
 b. pǝ ‘pig’ + hæɿ ‘grass’ > pǝɿ-hæɿ ‘pigweed’  
 c. k<sup>h</sup>ǝɿ ‘Ka’er’ + pu ‘village’ > kǝɿ-puɿ ‘Ka’er village’

From these examples of rhotic harmony, it is clear that in Yonghe, rhoticization is a property of the vowel and does not belong to the initial part of the syllable. Thus, the presence of rhotic vowels is problematic if we were to consider Yonghe to belong to SQ. Also problematic is the presence of rhotic vowels in the Puxi variety, which is supposedly a variety of ‘SQ’. Although Puxi is considered to be an SQ variety, it has eight basic vowels along with four rhotic vowels (C. Huang 2007). This also shows that a clear line cannot be drawn between NQ and SQ based on the typological feature

[+/- rhotic vowels], and calls into question the validity of the NQ/SQ dichotomy that has been proposed for Qiang varieties.

### 3.2.3 Uvularized vowels

The opposition of plain and uvularized vowels is a distinct feature of certain NQ varieties. Yonghe does not have an opposition of uvularized and plain vowels that is found in some NQ varieties, such as Hongyan (Evans 2006a, 2006b), Mawo (J. Sun & Evans 2013), and Zhimulin (Evans & Sun 2013). This development of uvularized vowels is not meant by Evans & Sun to be a prescribed typological characteristic for all NQ varieties, but it does show that the central Heishui varieties of Hongyan, Mawo, and Zhimulin all possess this shared innovation and should be grouped together on those grounds. This subgrouping is substantial because it is based on a common innovation as opposed to a typologically-based standard.

## 3.3 Morphological characteristics

Some have proposed that the NQ/SQ distinction can be seen through shared morphological innovations. Evans (2004) recognizes the limitations of using the feature [+/- tone] for genetic relationships between different Qiang varieties and uses morphology to strengthen patterns in the NQ/SQ grouping. The three types of morphological differences between NQ and SQ that have been put forward are differences in pronominal systems, directional marking prefixes, and agreement and number marking on verbs. In this section we will examine how Yonghe aligns with these morphological traits and see that it does not conform to the morphological expectations of NQ or SQ.

### 3.3.1 Case-determined suppletion of personal pronominal forms

Differences in the pronominal systems among Qiang varieties have long been recognized in the literature (C. Huang & Evans 2006; Liu 1998; Thurgood 1985; Wen 1941). These differences in pronominal systems have also been referenced as evidence for an NQ/SQ split (B. Huang & Zhou 2006:288). B. Huang & Zhou claim that SQ varieties have case-determined suppletion of personal pronominal forms whereas NQ varieties do not. Here I will argue two reasons why this feature in question does not actually validate an NQ/SQ split in Qiang.

First, the feature of case-determined suppletion of pronouns is not as widespread as has been claimed. Although B. Huang & Zhou (2006) present case-determined suppletion of pronouns as a pan-SQ feature, it has only thus far been described in certain varieties of Qiang spoken in Li County. For example, in the Taoping variety, the declension of pronouns is as shown in Table 9.

**Table 9:** Taoping pronoun declensions (adapted from B. Huang & Zhou 2006:288)

	1 <sup>st</sup> Person	2 <sup>nd</sup> Person
Nominative	ŋa <sup>55</sup>	no <sup>55</sup>
Accusative	qa <sup>55</sup>	kuə <sup>55</sup>

A very similar stem alternation is found in the pronominal system of the Puxi variety of Qiang, which is also spoken in Li County (C. Huang 2004). It has been proposed that the stem alternation in Puxi pronouns is in fact a pragmatic distinction between ‘topic’ and ‘non-topic’ pronouns rather than being determined by case (C. Huang & Evans 2006). The Puxi pronouns are given in Table 10.

**Table 10:** Puxi pronouns (C. Huang 2004:53)

	1 <sup>st</sup> Person	2 <sup>nd</sup> Person
Topic	ŋɑ	no
Non-topic	qɑ	kue

Although Puxi and Taoping have this similar stem alternation, other geographically southern and central varieties have not been described as having this suppletion of pronouns. For example, my interpretation of the data from the Longxi variety of northern Wenchuan County (Evans 2001a) is that Longxi does not have such a split pronoun system. Also, the Yonghe variety does not share this feature. Thus, the split pronoun system is not a pan-SQ feature and should not be used as evidence for a cohesive SQ group or for an NQ/SQ divide.

The second reason this feature does not validate an NQ/SQ split is because it has not been proven to be a shared innovation. There is disagreement as to how this split pronoun system in certain Qiang varieties came to be. Thurgood (1985) argues that case-determined suppletion of pronominal forms is an innovation in Qiang. According to this view, the case-determined suppletion of pronouns would be a shared innovation among the dialects that have this feature.

An opposing view has been taken by Jacques (2007). He proposes that the split pronominal system in certain geographically southern Qiang varieties is not an innovation, but rather an archaic feature of Proto-Sino-Tibetan. He writes: ‘only southern Qiang dialects spoken in Wenchuan and Lixian Counties appear to preserve archaic flexions, while they have disappeared in Northern Qiang’ (Jacques 2007:65). If this view is correct, then the split pronoun system is not a shared innovation among the varieties that possess it, but is instead a shared retention and thus cannot be used for the subgrouping of dialects.

To summarize, given that the split pronoun system in certain Qiang varieties is not a pan-SQ feature, and also given the disagreement and speculation about the history of the split pronoun system, I conclude that this feature is not strong evidence for an NQ/SQ split in Qiang.

### 3.3.2 Directional (DIR) markers

Evans (2004:25) writes, ‘Certain forms of DIR only occur in SQ or NQ: PNQ has \*nu- ‘upstream’, while PSQ has \*ɑ- ‘downward’.’ Yonghe lacks the \*ɑ- ‘downward’ prefix, but does have the \*nu- ‘upstream’ prefix, as shown in (2) below.

- (2)   ɑ       nə-ki-wa                   (naturally produced sentence: from author’s fieldnotes)  
       1ps   DIR-go-PRS:1p  
       ‘I will go upstream.’

Thus with regards to directional markers, Yonghe appears to be closer to NQ varieties since it has the PNQ \*nu- ‘upstream’ prefix.

### 3.3.3 Agreement and number marking

Evans (2004) also presents the loss of number in person marking as a shared innovation among some southern varieties. However, this shared feature could have various sources. That is, given that it is only a loss of distinction, it could have happened independently in two or more of the varieties in question and is thus not necessarily a shared innovation. Table 11 gives the person and number agreement marking systems in different dialects adapted from (Evans 2004:221), with the Yonghe system added for comparison.

**Table 11:** Agreement and number marking

	SQ varieties					NQ varieties	
	Longxi	Mianchi	Taoping	Puxi	<b>Yonghe</b>	Ronghong	Mawo
1sg	-á	-za	-a <sup>31</sup>	-ɿ	-a, -æ	-a	-a, -a
2sg	-nə	-nə	-nə	-n	-ni	-n	-n
3sg	–	–	–	–	–	–	–
1pl	-ŋi	-ji	əɿ <sup>31</sup>	-ɿ	-a, -æ	-ɿ	-ɿ
2pl	-ŋi	-nə	sɿ <sup>31</sup> nə <sup>31</sup>	-n	-ni	-i	-tɕi-n
3pl	–	–	–	–	–	-tɕi	-tɕi

Similar to SQ varieties Mianchi and Puxi, Yonghe has lost number distinction in first and second person. Both Puxi and Yonghe have leveled the number distinction in all person markers. However, the difference is that whereas in Puxi, the original singular marking has been replaced by the plural marking for the first person series, in Yonghe, the first person plural marker has been replaced by the first person singular marker [a ~ æ]. Thus, the loss of person marking in Yonghe does not necessarily indicate an affinity with other dialects that have also lost singular plural distinction in agreement marking. To summarize, although Yonghe and Puxi have both leveled the number distinction in the person agreement markers, they have done so independently through different means.

This drastic reduction in the person marking in the SQ varieties may be due to the fact that all speakers of these varieties also speak Chinese, which has no person or agreement marking on its verbs. The Qiang have had regular contact with the Chinese-speaking Han since around the thirteenth century (H. Sun 1988). This is especially true of the geographically southern varieties where contact with Han Chinese has been most intense. Evans (2001b) describes the process by which some SQ varieties underwent contact-induced tonogenesis through heavy borrowing from Chinese. Thus given that prolonged contact and interaction between SQ speakers and Chinese speakers is well established, and since it has been suggested that Chinese has influenced some varieties to undergo tonogenesis, it is not improbable that the simpler Chinese verbal morphology has had an influence on the reduction of person marking in some Qiang varieties.

### 3.4 Summary and discussion

In summary, the grouping of all Qiang varieties into NQ or SQ, which is based on typological features, is inadequate to describe the diversity of the Qiang language complex. Many of these features presented in support of an NQ/SQ split are only found in a subset of the NQ or SQ varieties. Furthermore this paper has shown that a binary NQ–SQ subgrouping cannot account for the complexity and nonconformity of the Yonghe variety. As shown earlier, Yonghe is in some respects similar to the descriptions of SQ due to its leveling of agreement markers and loss of consonant clusters. However, with regards to rhotic vowels, rhotic harmony, and the directional markers, Yonghe is closer to the prescribed norms of an NQ variety. In order to illustrate this, I give a revised version of Table 6 (Table 12) with the relevant features from Yonghe added for comparison.

**Table 12:** Yonghe as neither NQ nor SQ

Source	Characteristics	‘Northern’	‘Southern’	Yonghe
H. Sun (1981)	Lexical tone		√	?
H. Sun (1981)	Loss of original initial consonant clusters		√	√
H. Sun (1981)	Development of secondary consonant codas	√		
H. Sun (1981)	Vowel length distinction	√		?
Liu (1998)	Rhotic vowels	√		√
Evans & Sun (2013)	Plain versus uvularized vowels (only for certain NQ dialects)	√		
B. Huang & Zhou (2006)	Case determined suppletion of pronouns		√	
Evans (2004)	Upstream DIR marker PNQ *nu	√		√
Evans (2004)	Downward DIR marker PSQ *a		√	
Evans (2004)	Loss of number distinction in person marking (all but Taoping)		√	√

This table shows that Yonghe variety has a complex mixture of features and cannot easily be assigned to NQ or SQ without making significant changes to the prescribed norms for either group. Due to the fact that Yonghe does not fit either category, rather than label Yonghe as NQ or SQ, an attempt will be made to present a new distinct dialect cluster composed of Yonghe and the neighboring Goukou variety based on a new methodology using shared morphological, phonological, and lexical innovations.<sup>2</sup>

<sup>2</sup> It is important to note that this cluster also extends to Weimen Township, which is between Yonghe and Goukou, near the entrance to Yonghe valley. Weimen has been almost completely sinicized and there are very few remaining elderly people who speak or understand Qiang. Anecdotal evidence from Yonghe speakers suggests that the Weimen variety was very similar if not identical to the Yonghe variety while it was still being spoken.

#### 4. A new methodology for grouping Qiang dialects

So far, we have seen that dividing Qiang into two groups, NQ and SQ, is methodologically unfounded because it is based on typological features, which cannot prove genetic relationships. Furthermore, these typological features given as evidence of a binary NQ/SQ split often cannot account for the dialects that do not fit either category. This has been shown to be the case for the previously undescribed Yonghe variety, which does not fit into the prescribed molds for NQ or SQ, but instead is somewhere in between.

However, we are still left with the question: What then *is* the correct way to approach classifying and subgrouping Qiang varieties? The answer to this is to use ‘individual-identifying’ evidence as opposed to ‘type-identifying’ evidence for genealogical branching and subgroups. The distinction between these two types of evidence is important. According to the framework put forward in Nichols (1996) and as adapted by LaPolla (2012, 2013), type-identifying evidence can be used to identify a type of language (e.g. tonal versus non-tonal), but not a unique individual proto-language. Conversely, individual-identifying evidence uses shared innovations rather than typological features, and can be used to identify unique individual proto-languages. Individual-identifying evidence is based on, ‘Whole systems or subsystems with a good deal of internal paradigmaticity, ideally multiple paradigmaticity, and involving not only categories but particular shared markers for them’ (Nichols 1996:48, from LaPolla 2012:122). These paradigms can include morphological, phonological, and lexical innovations. In order for the evidence used to be individual-identifying, ‘the probability of a particular set of evidence appearing by chance in two or more languages should be less than one in a hundred thousand for the evidence to be taken as pointing to a single proto-language’ (LaPolla 2012:122). In the following sections I will apply this methodology and use individual-identifying evidence in order to demonstrate that Yonghe belongs in a distinct, previously unrecognized subgroup along with the Goukou variety.

##### 4.1 Evidence for a Southeast Maoxian cluster

The Goukou variety of Qiang is spoken in the Goukou Township directly to the west of the Yonghe valley. Goukou is the only variety of Qiang that is mutually intelligible with Yonghe. Yonghe and Goukou, hereafter YH and GK, are very similar but not identical varieties. There are differences in lexicon and phonology that warrant considering these two varieties as separate and not identical. For example, the differences in core lexical forms are given in Table 13:

**Table 13:** Lexical differences between YH and GK

	‘ear’	‘eye’	‘teardrop’	‘foot’	‘stomach’	‘sweat’
Goukou	nəʃke	mimi	məʃkə	zukuɑ	cijy	le
Yonghe	ˈɲiky	ˈmikje	ˈmi tci ˈkje	dzyˈpa	pʰu	tɕʰy

In the following section I give individual-identifying evidence for the proposed SE Maoxian subgroup in Qiang. In §4.1 I examined two morphological innovations; in §4.2 I present a sound change found, thus far, only in YH and GK, and finally in §4.3 I give a naturally paradigmatic lexical set as evidence for the YH–GK group. In each section, the evidence presented is also demonstrated to be statistically significant.

## 4.2 Shared morphological innovations

This section will present two distinct morphological innovations and show how they meet the requirement of individual-identifying evidence for the YH–GK subgroup. The two distinct morphological innovations presented in this paper are as follows:

- (1) A special negating prefix for copular verbs /ɲi-/
- (2) A reflexive marking suffix /-ɲy/

### 4.2.1 Special NEG for copular verbs

One morphological innovation unique to YH–GK is a special negating morpheme [ɲi-], which can only be used to negate a copular verb. An example of the two types of negating morphemes in YH and GK are given below. These are the special NEG-(COP) morpheme (3a), and the standard NEG morpheme (3b).

- |     |    |     |                                |               |   |
|-----|----|-----|--------------------------------|---------------|---|
| (3) | a. | ɑ   | məːɿ                           | ɲi-wɑ-mi      | Yonghe/Goukou (elicited sentence)           |
|     |    | 1sg | Qiang                          | NEG-COP.1sg-Q |   |
|     |    |     | ‘Am I not Qiang?’              |               |   |
|     | b. | ɑ   | mɛ-tɕʰɑ                        |               | Yonghe/Goukou (naturally produced sentence) |
|     |    | 1sg | NEG-want.1sg                   |               |   |
|     |    |     | ‘I don’t want (anymore food).’ |               |   |

In the examples (4a–b) below, we can see that the Ronghong variety does not have a special type of negating morpheme for copulas. That is, the same standard NEG morpheme /mV/<sup>3</sup> is used in both (4a) and (4b).

- |     |    |      |                            |               |  |
|-----|----|------|----------------------------|---------------|--|
| (4) | a. | qɑ   | zme                        | mɑ-ɲuɑ-ja     | Ronghong (LaPolla with Huang 2003:180) |
|     |    | 1sg  | Qiang                      | NEG-COP.1sg-Q |  |
|     |    |      | ‘Am I not Qiang?’          |               |  |
|     | b. | the: | nɑ-ji                      | mo-su         | Ronghong (LaPolla with Huang 2003:216) |
|     |    | 3sg  | good-ADV                   | NEG-study     |  |
|     |    |      | ‘S/he doesn’t study well.’ |               |  |

<sup>3</sup> Note that since the vowel in the prefix is governed by vowel harmony, the exact vowel is determined by the vowel of the next syllable.

A comparison with a number of varieties reveals that a special morpheme for negating copular verbs is not found in other documented varieties.

**Table 14:** Comparison of negating morphemes

	NEG	NEG-(COP)	Source
Mawo	ma-	ma <sup>ʰ</sup> -nwə <sup>ʰ</sup>	Evans & Sun (2013)
Ronghong	mə-	mə-ŋuə	LaPolla with Huang (2003)
Qugu	mə-	mə-fiū	Lester & Zhou (2001)
Goukou	mə-	ŋi-wu	field notes
Yonghe	mə-	ŋi-wu	field notes
Longxi	mì ~ mí	mì-ŋó	Evans (2001a)
Mianchi	mì ~ mí	mí-ŋuè	Evans (2001a)
Taoping	mi <sup>55</sup> -	mi <sup>55</sup> -ŋuə <sup>33</sup>	H. Sun (1981)
Puxi	mi-	me-ŋo	C. Huang (2007)

Table 14 shows that, while the standard NEG prefix is cognate for all varieties, only Yonghe and Goukou have a separate morpheme for copular verbs. It is also important that YH and GK not only share a similar category, they also share the same particular marker for it.

Evans (2004) has reconstructed the NEG morphemes for PSQ and PNQ as /\*mi-/ and /\*mV/ respectively, and notes that both of these forms ultimately come from the PTB negating morpheme /\*ma/ as reconstructed by Benedict (1972:96, from Evans 2004:211).

It is possible that the special NEG-(COP) morpheme /ŋi-/ in Yonghe and Goukou developed from the regular negating prefix /mi-/ found in the Longxi, Mianchi, Taoping, and Puxi varieties. This sound change, a bilabial nasal developing into an alveo-palatal nasal before a high front vowel, is not uncommon in the family (LaPolla, personal communication 2013). It is essentially an assimilation of the nasal consonant to the place of the vowel.<sup>4</sup> Thus, it is possible that the NEG-(COP) morpheme in YH–GK developed from the regular negating prefix /mi-/ found in other varieties. Even if this is indeed the case, there is still a shared innovation between Yonghe and Goukou. The real innovation undergone by YH–GK is the specialization of /ŋi-/ (possibly < \*mi-) to a copular negator. This evidence is potentially individual-identifying because it involves not only a shared category, but a shared marker as well.

Recall that in order for evidence to be individual-identifying, the chance of coincidental similarity must be less than one in 100,000. In order to show that this evidence is individual-identifying, we can use LaPolla's methodology to calculate the probability that this monosyllabic morpheme developed independently by chance in both Yonghe and Goukou. The methodology assumes an

<sup>4</sup> Another example of this occurring in a Tibeto-Burman language is the Amdo dialect of Tibetan. In spoken Amdo varieties, Written Tibetan (WT) forms with the initial *my-* /mj-/ correspond to Amdo /ŋ-/ (Sung & Lha Byams Rgyal 2005:24).

average of 20 consonants and five vowels per language, thus the chances of any two vowels being the same is one in five (0.2) and the chance of any two consonants being the same by chance is one in 20 (0.05).

In this case, the NEG-(COP) morpheme /ŋi-/ is a CV syllable in which the consonant and the vowel are actually not independent of each other. That is, the consonant is what it is because of the vowel. Thus we will calculate the probability of just the vowel. The probability of the vowel being the same by chance is one in five (0.2). Thus the chance of the whole syllable being identical by chance is also one in five. Note that this does not take into account the probability of both of these varieties having the category of NEG-(COP), which would further lower the chance of them being coincidental. This morpheme alone does not reach the threshold for being individual-identifying, but reaches that standard when considered to be part of a larger set of morphological innovations, the next of which is discussed below.

#### 4.2.2 Reflexive pronouns

Qiang varieties have different ways of marking reflexivity on pronouns. In the geographically northern dialect of Ronghong, ‘reflexive pronouns for first and second person are formed by reduplication of the regular pronouns’ (LaPolla with Huang 2003:56). In Puxi there are separate reflexive pronouns (C. Huang 2007). In YH and GK, a reflexive marking suffix [nu ~ ny] has been innovated. Below, Table 15 shows the forms for the first and second person singular pronouns, as well as the corresponding reflexive pronouns.

**Table 15:** Reflexive pronouns

	Yonghe	Goukou	Ronghong	Puxi
1sg	ka ~ a	qa ~ a	qa	ŋa / qa
1sg.REFL	ka-ny	qa-nu ~ qa-ny	qa-qəi	ŋaku / joqe
2sg	ʔü	ʔü	ʔü	no / kue
2sg.REFL	ε-ny	æ-ny	ʔi-ʔi:	ku

This table illustrates that the use of suffix [nu ~ ny] as a reflexive suffix is shared only by YH and GK. That is, no other described variety in this area that is considered to be related to these two varieties has this form. Note that where dual forms are given for the Puxi variety, the first is the topic pronoun and the second is the non-topic pronoun. None of the other varieties have this topic/non-topic distinction in pronouns.

This naturally paradigmatic set is further evidence in favor of considering YH and GK as a group. At present, there is not enough GK data to expand this set to the third person singular pronouns, which remains for future research. Again, using the same methodology, we can calculate the chances of this being a chance or parallel development. The probability of these pronouns being the same by coincidence in the two varieties is  $0.05 \times 0.2 = 0.01$  for the 1sg. For the 2sg the odds are 0.2 or one in five. For the REFL marker the probability is  $0.05 \times 0.2 = 0.01$  or one in 100. Along with this paradigm we will include the NEG-(COP) morpheme discussed in §4.2.1 and

multiply these figures by each other, as well as the number of the total features in question, in order to calculate the probability of the two dialects having all of these characteristics by chance. The calculations for the entire set of morphological characteristics including the NEG-(COP) morpheme are as follows (Table 16):

**Table 16:** Probabilities of shared morphological features

Morphemes	Segments		Probability
NEG-(COP)	V	(0.2) =	0.2
1sg.	CV	(0.05)(0.2) =	0.01
2sg.	V	(0.2) =	0.2
REFL	CV	(0.05)(0.2) =	0.01
Total =	0.000004	$\times 0.25$	0.00001

This reaches the threshold required for the evidence to be individual-identifying.

### 4.3 Shared phonological innovations between Yonghe and Goukou

Apart from morphological innovations, YH and GK also have shared phonological innovations that will be presented as evidence for a YH–GK subgroup in Qiang. One such shared innovation is the development of rhotic vowels from historic retroflex pre-initials.

#### 4.3.1 Shared historical development of rhotic vowels

In YH and GK, there is a shared innovation of developing rhotic vowels on syllables that historically carried retroflex pre-initials.<sup>5</sup> For example, the rhotic quality of the vowel in the YH–GK form /muʔ/ ‘corpse’ is the result of a transfer from the historic pre-initial (see Ronghong /zmu/). This is the first documented instance of a development of rhotic vowels from syllables with retroflex *pre*-initials in Qiang.<sup>6</sup> I will call this development ‘rhotic transfer’ as it is similar in principal to the diachronic process of ‘rhinoglottal transfer’ described in Mpi, another Tibeto-Burman language (Matisoff 1990).

In order to show that this sound change is unique to YH and GK, data from the geographically northern varieties Hongyan (Evans 2006b), Ronghong (LaPolla with Huang 2003), and Baixi

<sup>5</sup> Recall that vowel rhoticity in Yonghe is treated as a property of the vowel itself and not a consonantal phoneme. Evidence for this comes from the fact that this rhotic property of the vowel participates in vowel harmony (see §3.3.2 earlier).

<sup>6</sup> The development of rhotic vowels from historic *post*-initial retroflex sequences has been documented in several varieties of Qiang (C. Huang 1992:154, 157), and also in other Tibeto-Burman languages of Sichuan such as Prinmi (Ch. Pumi), for example, Central Prinmi /keʔ/ ‘foot’ < Proto-Prinmi \*kre (Picus Ding, personal communication 2014). This diachronic development is distinct from the unique innovation between YH–GK, which involves a development of rhotic vowels from *pre*-initial retroflex sequences.

(author's fieldwork) as well as data from geographically southern varieties Longxi and Mianchi (Evans 2001a) will be examined. The words were chosen for comparison by taking an exhaustive list of the words with a rhotic pre-initial for which cognates could be found in other varieties from the appended lexicon in LaPolla with Huang (2003). The lexicon is based on the Ronghong variety and contains over 3,000 lexical entries. Also, some words from the further northern Hongyan variety were used (Evans 2006b). The Hongyan variety is generally more conservative than Ronghong and possesses some lexical items with rhotic pre-initials, such as /ɿgu<sup>ʳ</sup>/ 'walnut', which are not listed in LaPolla with Huang's (2003) lexicon.

**Table 17:** Retroflex pre-initials developing into rhotic vowels

Gloss	Hongyan	Ronghong	Baixi	Longxi	Mianchi	Goukou	Yonghe	PSQ <sup>7</sup>	PTB
autonym	zme	zme	zmɛ	mà	mà	məː˥	məː˥	*χma	
'to boil'	—	χqu	sq̣u	qò	qà	ku˥	xwu˥	*qo/a	
'corpse'	rmu	zmu	zmu	mó	mó	mu˥	mu˥	*mo/u	*s-maŋ
'dhole'	ʃpi	ʃpeɕi	ʃpəfu	—	se	pə˥	pə˥		*s-k-ywal
'dream'	zmu	zmu	zmu	mò (zè)	mò	ə˥mu	ə˥˥mu˥	*χmo/u	*r-maŋ
'drum'	r̥bu	zbu	zwə	bò	bù	bu	ɣwu˥	*χbu	
'kidney'	χpu˥lu	ʃpul	ʃpun	pú lù	pú lò	—	ˈpə˥nə	*χpu lo/u	*pil/r ~ rpul
'lazy'	—	sqə	χqə	qeí	ké	χə˥	xə˥	*χqe	
'Maoxian'	ʃquŋi	ʃquŋi	ʃqəŋi	—	—	kə˥˥ŋi	xə˥˥ŋy		
'name'	—	zmə	zmə	zè mú	mé	mə˥	mə˥		*r-miŋ
'pus'	—	ʃpə-sa	ʃpə-sa	pù	pù	ˈpu˥-sa	ˈpu˥-tsu	*χpu	*s-pa
'tired'	rba <sup>ʳ</sup>	—	wə˥	bà	bà	wə˥	wə˥		*bal
'walnut'	ɿgu <sup>ʳ</sup>	—	ɛwələ	—	ɛò ló	ɛə˥	ˈɣwə˥lə		
'yak'	zbə	zbə	zu	—	bó zǐ	və˥	ɣwə˥		*broŋ

Table 17 shows that some varieties such as Hongyan, Ronghong, and Baixi retain the pre-initial consonant, that some varieties such as Longxi and Mianchi have lost the pre-initial with no effect on the vowel, and lastly, that in YH and GK the initial has been lost and a rhotic vowel has developed. For example, in the word /zmu/ 'corpse', Hongyan, Ronghong, and Baixi preserve the retroflex pre-initial. In Longxi and Mianchi, the pre-initial has been lost, yielding the form /mó/. In Yonghe and Goukou, the retroflex pre-initial has also been lost but the retroflex quality has transferred to the proceeding vowel, making the form /mu˥/. This pattern is very strong for the Yonghe and Goukou varieties. All but two of the Goukou forms exhibit this sound change. The Baixi variety, which was previously grouped with Goukou by Liu (1998), exhibits this sound change in only one of 14 corresponding forms.

<sup>7</sup> Proto-southern Qiang forms are from Evans (2001a). Proto-Tibeto-Burman forms are sets from the Sino-Tibetan Etymological Dictionary and Thesaurus. Available at: <http://stedt.berkeley.edu>

In the case of Hongyan, Ronghong, and Baixi, there are no shared innovations, only shared retentions. Mianchi and Longxi, on the other hand, only have shared losses of rhotic pre-initial consonants, which also do not count as a shared innovation because there is merely a loss of information that could have occurred independently in each variety.

This table provides evidence that Yonghe and Goukou should be considered to be a part of the same dialectal grouping because they have both shared an innovation—in this case, the development of rhotic vowels in place of a rhotic pre-initial.

In order to show that this evidence is statistically significant we will use the same method of calculations introduced in §4.2. In this case we are investigating the probability that two dialects would have rhotic vowels on the same syllables by chance. This is not as straightforward as calculating the chance of morphological innovations, but it is possible.

First we need to establish the probability of any vowel being rhotic in Yonghe. Although the Yonghe variety has rhotic vowels, these vowels are not necessarily common. For example when I selected at random (using an Excel algorithm) 100 Yonghe words from a lexicon of over 1,500 entries, only 20 of the words had rhotic vowels. In order to leave a wide margin for variation I will use a 40% probability that any given word in Yonghe has a rhotic vowel. Next, we will calculate the odds of these two varieties having rhotic vowels on the same 11 forms by chance. This calculation is  $(0.4^{11}) \times 0.09 = 0.000003$ , which meets the standard to be considered individual-identifying.

## 4.4 Shared lexical innovations

Apart from shared morphological innovations and phonological innovations on cognate words, there are several shared lexical innovations between YH and GK as well. While there may be numerous shared lexical items between YH and GK, these lexemes alone are not enough to establish a subgroup, as Nichols (1996) states:

[A]ny claim of genetic relatedness among isolating languages that relies simply on lexical comparison—without (tonal or other) arbitrary lexical classification and without paradigmatic lexical sets attested as whole sets in each language—probably cannot be regarded as individual-identifying and thus as consistent with the comparative method, no matter how numerous the compared lexemes. (Nichols 1996:64, from LaPolla 2012:123)

The purpose of this methodology is to make sure that claims of relatedness are not based on chance similarities or on single lexical items in order to skew the data. In order to demonstrate the subgroup of YH and GK, I will construct one naturally paradigmatic lexical set consisting of the words for ‘food’ as well as ‘breakfast’, ‘lunch’, and ‘dinner’.

### 4.4.1 Paradigmatic lexical evidence for Yonghe–Goukou

According to Nichols and LaPolla, there are three distinct requirements for using lexical sets to establish genetic relationships. First, the lexical sets must be paradigmatic. This is because

paradigmaticity prevents, as LaPolla (2012:120) puts it, ‘cherry-picking items from dictionaries to support some view while ignoring conflicting data in the same dictionary, often on the same page’. Second, ‘the entire set must be attested in each language’ (LaPolla 2012:122)—or in this case, the entire set must be attested in each variety of the subgroup being established. Third, for the varieties of the subgroup being established, the chance of lexical similarity being coincidental must be less than one in 100,000.

In this section I will construct a paradigmatic lexical set as evidence for the YH–GK subgroup and also show how it fulfills all three of the above-mentioned requirements. The forms in each variety compared are given in Table 18.

**Table 18:** Shared lexical items in Yonghe and Goukou

	‘food’	‘breakfast’	‘lunch’	‘dinner’
Ronghong	stuaha	ctcəs	dza:	jəs
Goukou	matʂa	awu	dzæmæ	jæte
Yonghe	matʂa	awu	dzæmæ	jæte
Longxi	ɹà qə / gù	tsʰá	zà mià	ɹà tí
Mianchi	zá	tsuà tɕʰó	ná tɕʰò	zà té
Puxi	dze-sa	ʂtəitsə	tshu	zasti

This set fulfills the first requirement of individual-identifying evidence, as it is naturally paradigmatic. The paradigm is itself a *hyponymy*, or general-specific lexical relationship (Cruse 1986). In this case, ‘food’ is a *superordinate* (more general lexical unit) and the words ‘breakfast’, ‘lunch’, and ‘dinner’ are *hyponyms* (more semantically complex, specific terms) of the superordinate word ‘food’. The reason that paradigmaticity is so important is that it limits the arbitrariness inherent in lexical comparisons. Without the constraints of paradigmaticity, one could argue for a different subgrouping based on arbitrary lexical comparisons. For instance, the form /ɕijj/ ‘stomach’ in GK appears to be cognate with /səkuə/ in Ronghong, but not with /pʰu/ in YH. Another such example might be the form /tɕʰy/ ‘sweat’ in YH, which appears to be cognate with /xtʂu/ in Ronghong but not with /le/ in GK. Paradigmaticity alone, however, does not qualify a set of evidence to be individual-identifying. Thus, I will continue now to look at how this set fulfills the second and third requirements as well.

This set also fulfills the second requirement that the entire set must be attested in each variety of the subgroup being established. In Table 18, all the words in the set are clearly cognate between YH and GK. Although all the forms are cognate between YH and GK, some forms appear to have cognates outside of the YH–GK cluster.<sup>8</sup> For example, the form for ‘dinner’ appears to be cognate in all six varieties. Also, the form for ‘lunch’ is not only cognate between YH and GK, but also appears to be cognate with the forms in Ronghong and Longxi. The fact that these two lexical items have cognates outside the YH–GK subgroup is inconsequential. This is because we are examining this group of words as a paradigm. That is, the fact that certain individual lexical items in the

<sup>8</sup> Thanks to one anonymous reviewer for this observation.

paradigm have cognates outside of the group being established is insignificant because ‘lexical comparison ... without paradigmatic lexical sets attested as whole sets in each language—probably cannot be regarded as individual-identifying ... no matter how numerous the compared lexemes’ (Nichols 1996, from LaPolla 2012:123).

Finally, in order to show that this set stands the test of the third requirement, I will calculate the probability of these words in YH and GK being similar by chance. These calculations are based on the same principles explained in §§4.1–4.2 regarding calculating probability for the morphological innovations. The values for the probability of each of these words are given in Table 19:

**Table 19:** Probabilities for different words in Yonghe and Goukou

Lexical item	Segments		Probability
‘food’	CVCV	$(0.05)(0.2)(0.05)(0.2) =$	0.0001
‘breakfast’	CVC	$(0.2)(0.05)(0.2) =$	0.002
‘lunch’	CVCV	$(0.05)(0.2)(0.05)(0.2) =$	0.0001
‘dinner’	CVCV	$(0.05)(0.2)(0.05)(0.2) =$	0.0001

The probability of each individual lexical item being identical in both varieties by chance is given on the far right. Note that by themselves, none of these words meet the standard of being individual-identifying evidence since the chance of coincidental similarity is greater than one in 100,000. When considering these words as part of a set, however, the chance of them all being shared by chance decreases sharply. In order to calculate the probability as a paradigm we multiply these by each other,  $0.002 \times 0.0001 \times 0.0001 \times 0.0001 = 0.0000000000000002$  or  $2.0 \times 10^{-15}$ , and divide the resulting figure by the number of items in the set,  $2.0 \times 10^{-15} \times 0.25 = 0.00000000000000005 = 5.0 \times 10^{-16}$  or less than one in 10 trillion.

Although this number is very high, it is actually a conservative estimate when one considers the fact that many Qiang varieties have around 40 consonants and eight vowels. The actual figure is not important, but it does show that it is highly unlikely that this arranged paradigmatic set would be identical in YH and GK by chance. Thus, this evidence can qualify as individual-identifying.

One of the inherent weaknesses of using lexical items to show genetic relatedness is that words are much more easily borrowed than morphemes or phonological traits. The solution to this, as discussed in this section, is to use naturally paradigmatic lexical sets. However, this does not completely rule out the possibility of all of the words in a paradigm being borrowed together. In fact, it may be that the more ‘naturally paradigmatic’ a set of words is (e.g. numerals, time ordinals, etc.), the more likely that it could be borrowed as a set. That is why this paper has also covered morphological and phonological innovations, which are much less easily borrowed. The converging evidence of these morphological, phonological, and lexical innovations form a strong argument for the YH–GK subgroup.

## 4.5 Summary and discussion

In the above section I have given morphological, phonological, and lexical evidence for the Yonghe–Goukou subgroup. I have chosen to call this group by a more neutral geographic term

‘Southeastern Maoxian’ in case other varieties need to be added to this cluster in the future. In Table 20, I give a list of the features used as evidence for establishing the SE Maoxian group.

**Table 20:** List of items for establishing the SE Maoxian subgroup

Type	Item	YH	GK	Baixi	Ronghong	Longxi	Puxi
Morphological	/ŋi-/ as NEG for COP verbs	+	+	–	–	–	–
Morphological	/-ŋy/ reflexive marker	+	+	?	–	–	?
Phonological	rhotic V as reflex of cluster	100%	89%	9%	0%	0%	–
Lexical	‘breakfast, lunch, dinner, food’	+	+	–	–	–	–

One further direction for research would be to examine the numerous thus far undocumented varieties near Yonghe and Goukou in Maoxian to see if they share any of the same innovations given in this list. Of particular interest would be the Heihu variety, which was previously grouped with Goukou by Liu (1998). To the best of my knowledge, there are no published data available for Heihu, but given its geographic proximity to Goukou and Yonghe, it is highly possible that Heihu shares some of the same innovations.

## 5. Placement of the SE Maoxian group within the Qiang continuum

This paper has provided evidence that Yonghe and Goukou have shared innovations that warrant viewing them as a distinct dialect cluster rather than as part of an NQ/SQ split. In order to further understand the position of Yonghe and Goukou within the larger Qiang continuum, I will attempt to compile evidence for subgroupings in Qiang based on shared innovations. This approach of classification and subgrouping is indebted to the work of J. Sun on the subgrouping of Tibetan varieties. He states:

In the meantime, the lamentable tendency persists to pigeonhole minor Tibetan dialects into the ... major dialects on the shaky basis of shared archaisms (consonant clusters, voiced obstruent initials, no diphthongs, etc.) or global similarities owing to convergent development (syllable cannon reduction, vowel nasalization, tonogenesis, etc.). ... All distinct ... forms of Tibetan should *a priori* be placed directly under Old Tibetan as its first order offshoots, unless there are sound reasons for making the flat family tree hierarchical. (J. Sun 2003b:796–797, from Tournadre 2013:110–111)

I propose that the same approach be used for classifying Qiang varieties. That is, hierarchical subgroupings should not be assumed unless validated by shared innovations. In the following segment I will give an overview of shared innovations among Qiang varieties given in the literature.

### 5.1 Morphological innovations proposed in the literature

Evans’ (2004) reconstruction of the Proto-Qiang verb complex provides useful insights into the morphology of different dialects. Here I will examine the innovations proposed by Evans and their

implications for subgrouping. I will not cover parallel developments such as the loss of person marking which has already been discussed in this paper. I will also cover an innovation put forward by Evans & Sun (2013).

### 5.1.1 Perfective marking

The divergence in the way in which Qiang varieties mark the perfective aspect offers further evidence for subgrouping. Evans (2004:221) states that:

PQ clearly had perfective aspect (PERF), marked with orientational prefixes, as this aspect is currently marked in all dialects. For NQ this marking is the only indication of perfective aspect, and probably reflects the PQ PERF marking strategy. In addition to orientation prefixes, SQ dialects reflect a set of agreement suffixes restricted to this aspect.

The varieties that share these agreement suffixes for the perfective aspect are Longxi, Mianchi, Taoping, and Puxi. See Evans (2004:221) for the full set and reconstruction. These are clearly cognate and show that on some level these four varieties share a special relationship, as will be shown in Figure 1.

### 5.1.2 Shared DIR marker \*nu for ‘upstream’

As mentioned earlier in this paper, Evans (2004) uses the shared ‘upstream’ DIR prefix \*nu between Ronghong and Mawo as evidence for the NQ group. While evidence from §3 suggests that the NQ/SQ split is not a valid one, this DIR prefix can still be used to show a special relationship between all the dialects that possess it. In my own research, all the varieties I have examined that lie to the north of Yonghe—Goukou, Heihu, Sanlong, Baixi, Wadi, Songpinggou, Taiping, Qugu, Waboliangzi, Musu, Weigu, Qinglang, Luoduo, all the way to the northernmost variety, Luhua—have the \*nu ‘upstream’ DIR marker. No variety to the south of Yonghe has been described as having this DIR marker. The varieties to the south of Yonghe have been relatively well documented. Thus, it is not likely that there is an undocumented variety further south that possesses \*nu. Therefore, since I have found no dialect north of Yonghe that lacks \*nu, and since no documented variety south of Yonghe possesses \*nu, I will tentatively encompass all the dialects north of Yonghe in a group based on the innovation of the \*nu DIR marker for ‘upstream’. This is provisional and may need revision based on further data.

### 5.1.3 Shared DIR marker \*a for ‘down’

This directional marker is shared between the Taoping, Puxi, Muka, and Shuitang varieties of Li County. Again, this shows that they have a close-knit relationship. As one anonymous reviewer observed, there might be a connection of this form with Mawo /a-/ and Ronghong /fa-/ ‘down’, in which case both of these would share a common PQ ‘down’ root. Even if this were the case, the rhoticization of the vowel on this morpheme would be an innovative feature of these dialects.

### 5.1.4 Shared DIR marker \*ji for ‘upstream’, ‘inward’

The Wenchuan county varieties of Longxi and Mianchi share an innovative DIR marker /ji-/ for ‘upstream’, ‘inward’. This shared innovation implies an affinity between these two varieties.

### 5.1.5 Uvularized vowels

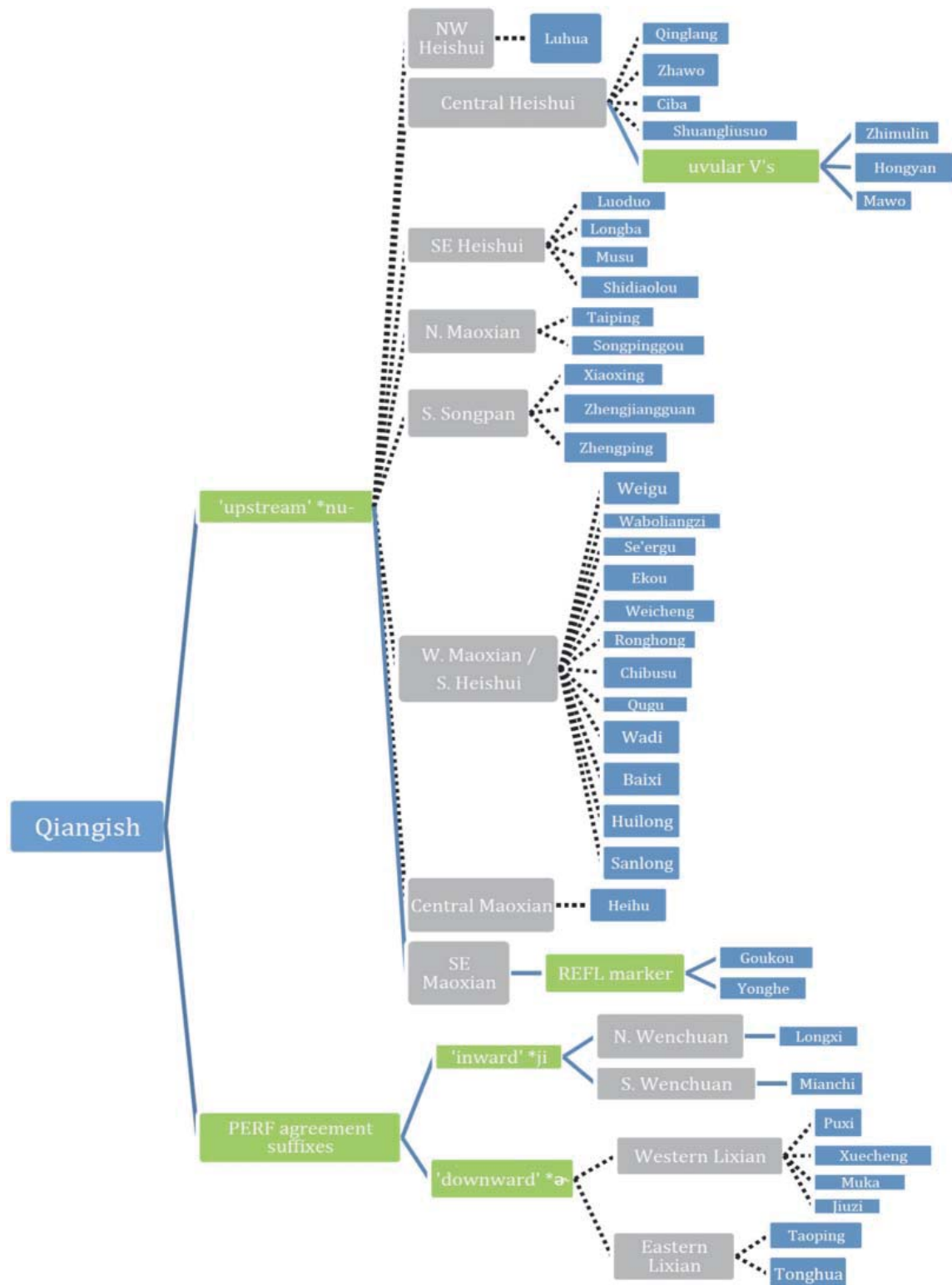
As mentioned in §1.4.3, Evans & Sun (2013) have identified the development of uvular vowels in the Hongyan, Mawo, and Zhimulin varieties of central Heishui County. I will consider these three varieties to constitute a distinct group. This grouping is not final as there are still some undocumented Heishui varieties that may have this shared innovation.

## 5.2 Integrating the innovations covered thus far

I have attempted to integrate all the innovations mentioned in §5, along with the innovations shared by the SE Maoxian cluster, into one comprehensive grouping for Qiang varieties. This integrated dialectal grouping is given in Figure 1.

The figure is complex and warrants some explanation. The small dark grey boxes on the far right are the actual varieties themselves. These varieties are arranged by approximate geographic location. Groupings validated by shared innovations are marked by solid lines connecting the innovations and the varieties that share them. The innovations provide the evidence and grounding of the splits in groupings. Branches where no diachronic change is cited are uncertain and are therefore marked with dashed lines. These are intended to be a provisional set of categories until further evidence is demonstrated. This figure makes no claims to the time depth of any of the splits between varieties or the degree of mutual intelligibility between varieties. It is important to reiterate that these broad geographic groupings connected by dashed lines are *not* justified by shared innovation. They are heuristic, geographically-based groups, which are at this point tentative and invite further research and refinement. From this figure we can make a few general observations about the state of Qiang dialectology:

- (1) The subgrouping of the Wenchuan and Lixian varieties is relatively well established, although more work could be done to sort out the relationship between the Lixian varieties.
- (2) The ‘W Maoxian/S Heishui’ group is by far the largest and may represent a dialectal continuum spanning from Sanlong to Weigu or beyond. Much more work is needed to disentangle this group and find clear boundaries with other groups, if there are any.
- (3) It is highly possible that the Heihu variety of the tentative ‘Central Maoxian’ group has some of the same innovations as Yonghe and Goukou, and might belong as a member of the ‘SE Maoxian’ group.
- (4) Almost nothing is known about the varieties in ‘N Maoxian’ and ‘S Songpan’; however, their geographic proximity might suggest an affinity between the varieties of these two



**Figure 1:** An integration of all the innovations given for Qiang thus far

regions. Research into these dialects is urgent as they are some of the more endangered varieties in Maoxian.

- (5) The borderlines between the northernmost Qiang varieties and the rGyalrongic and Tibetan languages are not yet well understood. Research in this area may lead to a better understanding of the exact expanse of Qiang.

## 6. Summary

This paper has critically examined the validity of an NQ/SQ split in Qiang and found it to be untenable. I have demonstrated that the typological basis for the NQ/SQ grouping does not hold across varieties and cannot account for the Yonghe variety, which does not conform to the typological norms of NQ or SQ. In light of this, I propose abandoning the terms NQ and SQ and using shared innovations to categorize Qiang language varieties.

I have identified morphological, phonological, and lexical innovations shared by Yonghe and Goukou, and established a new subgroup, ‘SE Maoxian’, on the basis of those shared innovations. In order to guard against chance similarity or parallel development, I have rigorously applied Nichols and LaPolla’s methodology in establishing the SE Maoxian group. Thus, the evidence presented in favor of the SE Maoxian group is individual-identifying and statistically significant.

In addition to providing evidence for the SE Maoxian group, this paper has also attempted to integrate different innovations proposed for Qiang varieties in the literature into a single, more comprehensive Qiang dialectology. This new subgrouping scheme shows which groupings have been established and also highlights areas where future work is needed. As there are still many undocumented Qiang varieties, it is important that work done on those varieties does not gloss over their unique properties and relationships with each other in favor of simply pigeonholing them into NQ or SQ. Much more work is needed to show shared innovations between other varieties and how they relate to each other before the bigger picture of the Qiang language complex will become clear.

## Abbreviations

1sg	1 <sup>st</sup> person singular	NEG	negative
2sg	2 <sup>nd</sup> person singular	NQ	Northern Qiang
3sg	3 <sup>rd</sup> person singular	p.c.	personal communication
1pl	1 <sup>st</sup> person plural	PNQ	Proto-Northern Qiang
2pl	2 <sup>nd</sup> person plural	PRS	prospective aspect
3pl	3 <sup>rd</sup> person plural	PSQ	Proto-Southern Qiang
ADV	adverbial marker	PTB	Proto-Tibeto-Burman
Ch.	Chinese	Q	question marker
CL	classifier	REFL	reflexive
COP	copulative verb	SQ	Southern Qiang
DIR	directional marker	V	vowel
EVID	evidential marker		

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## 深入探討及了解羌語方言

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目前羌語的方言分配研究尚處於初步階段。過去的研究按照方言類型和特徵簡略地把所有的羌語方言分為南北兩大方言。本文針對過去的方言分配法進行評論及說明一些不足之處。研究指出，過去的分配法未考慮到羌語方言的多樣性而不能用於概括解釋一些目前還未研究過的方言，例如永和方言。為了明確地說明方言的分配法，本文更深入地發展出一套以共同創新為基礎的分配方法論以供將來研究之需。

關鍵詞：藏緬語，羌語，方言分配，方法論，指數分析