



# Sound Correspondence and the Comparative Study of Miao-Yao Languages

*From the Perspective of Complete Sound Correspondence*

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## Abstract

Rigorous sound correspondence is fundamental to historical linguistics. It serves as a solid start in studying genetic relationship. Regarding the genetic position of Miao-Yao languages, Li (1937) proposed a hypothesis that the Sino-Tibetan language family consists of Chinese, Tibeto-Burman, Kam-Tai, and Miao-Yao. Benedict (1942; 1975) excluded Miao-Yao from the Sino-Tibetan language family since sound correspondences between Miao-Yao and Chinese were considered to be caused by language contact. The key point in this debate has been ignored for a long time: are the related morphemes proposed in this debate supported by rigorous sound correspondence? In this paper, related morphemes across 11 Miao-Yao languages have been first identified under the requirement of complete sound correspondence, and then analyzed by the Rank Method. The result of the genetic relationship between the 11 Miao-Yao languages has been confirmed. The same procedure has been applied to Sino-Miao-Yao related morphemes, and similar pattern has been found. The Sino-Miao-Yao related morphemes were recognized to be inherited from the common ancestor of Chinese and Miao-Yao. Combined with the result from the perspective of pervasive sound correspondence (Wang 2015), the proposal of a genetic relationship between Chinese and Miao-Yao has been supported. The Inexplicability Principle has been used to weaken the possibility of Sino-Miao-Yao related morphemes being induced by borrowing from Chinese to Miao-Yao, since some sound correspondences are unlikely to be explained by natural phonetic mechanisms. Moreover, related morphemes in Chinese and Miao-Yao have been examined from the perspective of Old Chinese, and such an examination also supports the hypothesis of a genetic relationship between Chinese and Miao-Yao languages.

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## Keywords

rigorous sound correspondence – complete sound correspondence – Sino-Miao-Yao related morphemes – Rank Method – Inexplicability Principle

### 1 Complete Sound Correspondence and Historical Comparison

Sound correspondence is crucial to historical comparison. Before the establishment of sound correspondence, steps like identifying cognates or borrowed words, reconstructing proto-forms, confirming genetic relationship between languages, or subgrouping, may not get started. Since sound correspondence was possibly caused by inheritance or borrowing, morphemes of different languages with sound correspondences should be called related morphemes, rather than cognates (Chen 1996).

Chen (1996: 201–216) suggested that the definition of sound correspondences should be based upon probabilistic calculations. The following statistical formula was proposed to be used for searching for related words (see Chen 1996: 216–228 for details):

$$n \cdot p \leq 0.1$$

Where “n” is the sample size being searched, and “p” is the probability of the particular phonological correspondences between the pairs of words under evaluation.

When complete sound correspondence is loosened up, correspondences are found only in some parts of a syllable (initial, final and tone), and related morphemes are recognized. However, the probability of accidental similarities would have greatly increased. Based on the data from Yi dialects and Bai dialects, Wang (2011) suggested that loosening up on complete sound correspondence has brought in more probability of resemblances. Over time, some examples for a particular sound correspondence may have gotten lost. The earlier two languages split, the more supporting examples of sound correspondences may get lost. On the other hand, loosening up on the requirement of complete sound correspondence is beneficial to recognize more sound correspondences. However, such measurement has to take the risk of additional chance resemblances in a comparative study. Thus, in the implementation of historical comparison, such measurement can be used with caution, as discussed by Chen (1996).

After related morphemes have been obtained based on complete sound correspondences, the genetic nature of these morphemes may be analyzed. The Rank Method and the Inexplicability Principle will be adopted for this task.

The Rank Method was proposed by Chen (1996), where the 200-word list (Swadesh 1952) has been divided into two sub-groups: the 100 basic-word list of Swadesh (1955), and the remainder of the Swadesh 200 word-list that excludes the items from Swadesh’s 100-word list. The two groups are named High-rank (the first 100 words) and Low-rank (the remaining 100 words). The two lists by Swadesh (1952; 1955) have been widely accepted, but were independently adopted by Chen (1996) to avoid subjective selection. It is assumed that words in the High-rank are more stable and loan-resistant than those that are in the Low-rank. More importantly, the Rank Method has been tested with a large number of languages. According to Chen (1996), genetically related languages, such as the Germanic languages, the Tai languages, and the dialects of Chinese, have a greater number of related words in the High-rank (the first 100 words) than in the Low-rank (the remaining 100 words). However, the number of related words in the High-rank is less

than that are in the Low-rank if the two languages are in a contact relationship, such as the Tai languages and Chinese dialects.

The Inexplicability Principle was used to identify the language relationship by Wang (2004; 2006; 2012). The Inexplicability Principle refers to the inability of describing the representation of the related words in the recipient language in terms of the phonological system of the donor language. The inexplicable elements are considered to be counterevidence for the hypothesis of borrowing. Taking Chinese and Dai languages as an example, the mechanism of matching phonological systems of those two languages in contact has been analyzed thoroughly by Chen (1996). The analysis can serve as the empirical foundation of the Inexplicability Principle.

## 2 Complete Sound Correspondence and Comparative Studies of Miao-Yao Languages

The importance of complete sound correspondence has been realized by Wang and Mao (1995: 19–20). They stated: “In comparison, the initial, final or tone of some morphemes does not follow the rule of sound correspondence. There are three possibilities. First, such morphemes may not be cognate. Second, there may be an irregular change of a few morphemes in a particular dialect. Third, it may be a mistake in recording.... (However,) if both tone and initial correspondence of a syllable can be supported, its final correspondence may be established, though there is only one example. Similarly, tone and final correspondence of a syllable may imply its initial correspondence (*Our translation*).” They used “I!”/“F!”/“T!” to mark initial, final, and tone irregularities, respectively. Such a method has been used widely ever since. Although the completeness of sound correspondence has been noticed in Miao-Yao comparative studies, ways to deal with it needs further study. So-called ‘irregularity’ should be reexamined. If there are no parallel examples, such irregularity has no foundation of sound correspondence. If there are parallel examples, it may belong to another set of sound correspondence, even though there are only few examples. These two different “irregularities” have not been distinguished by Wang and Mao (1995).

According to Wang and Mao (1995), if sound correspondences can be established for either two of the three elements of a syllable (initial, final and tone), the third would also be considered as sound correspondence, even though there are no examples to support the correspondence of the third. They assumed that morphemes under comparison were regarded as cognates if either two of the three elements of a syllable, initial, final and tone, are supported by sound correspondence. Each phonological element of cognates is inherited from the common ancestor, and belongs to a particular set of sound correspondence. There are limited numbers of parallel examples due to long-term language split. However, this assumption needs to be examined statistically. Whether the morphemes supported by partial sound correspondence as discussed above can be recognized as related morphemes depends on the sample size and the quantity of phonemes of languages under comparison (see Chen 1996: 222). If recognition of related morphemes is confirmed by a statistical algorithm, the third element of a syllable being a sound correspondence can be deduced. However, such sound correspondence is generated indirectly, while its foundation is weaker than those supported by parallel examples.

A widely-accepted family tree for Miao-Yao languages is yet to be found. Currently, a conservative measurement is used to select a representative language from each major branch of Miao-Yao languages (see Wang 2013). For instance, Xiangxi Miao = Jiwei (JW), Qiandong Miao = Yanghao (YH), Chuanqiandian Miao = Fuyuan (FY), Bunu = Qibainong (QBN), Baheng = Wenjie (WJ), Jiongnai = Changdong (CD), She = Duozhu (DZ), Mienic Yao = Luoxiang (LX), Jinmen Yao = Liangzi (LZ), Biaomin Yao = Sanjiang (SJ), Zaomin Yao = Daping (DP).

### 3 From the Perspective of Complete Sound Correspondence

The genetic relationship between Miao-Yao and Chinese has been a long debate. Li (1937) proposed the hypothesis of a Sino-Tibetan language family consisting of Chinese, Tibeto-Burman, Kam-Tai, and Miao-Yao. Benedict (1942; 1975) excluded Miao-Yao from the Sino-Tibetan family since sound correspondences between Miao-Yao and Chinese were thought to be caused by language contact. A key point in this debate has been ignored for a long time: are those related morphemes in this debate supported by strict sound correspondence? Gong (2006) examined some of them and concluded that “Chinese and Miao-Yao are not genetically related. Words with similar sound and similar meaning between them are either borrowed or accidentally similar. Although lots of effort has been made in the comparative study of Chinese and Miao-Yao, sound correspondence between them has not yet been established ... (*Our translation*).”

#### 3.1 Complete Sound Correspondence and Levels of Sino-Miao-Yao Related Morphemes

There are many phonetically and semantically similar morphemes between Chinese and Miao-Yao that were collected from previous studies. We should examine sound correspondences of these morphemes from the perspective of complete sound correspondence. Different levels of related morphemes may be distinguished. (1) All elements of a syllable (initial, final and tone) conform to sound correspondence. (2) Any two of the three elements conform to a sound correspondence, and the third is not. Theoretically, three sub-categories could be further divided, namely, initial and final correspondence, initial and tone correspondence, final and tone correspondence. (3) Any one of the three elements conforms to a sound correspondence, and the other two are not. Similarly, three sub-categories could be further divided, namely, only initial correspondence, only final correspondence, only tone correspondence.

Reconstruction of Middle Chinese by Baxter (1992) was used for Sino-Miao-Yao comparison. Reconstruction of Old Chinese was created by Li-Fang Kuei (1971), and modified by Gong (2002). For the Miao-Yao side, materials from Wang and Mao (1995) and the reconstruction of Proto-Miao-Yao by Ratliff (2010) were adopted. The identification of Sino-Miao-Yao morphemes followed the procedure given above.

The phonological information for Middle Chinese and Proto-Miao-Yao are recorded below.

	Initial	Final	Tone
Proto-Miao-Yao	127	122	4
Middle Chinese	37	142	4

According to the statistical algorithm mentioned above, the probability of a pair of sound correspondence between Proto-Miao-Yao and Middle Chinese by chance is very low, i.e.  $p = (1/127 \cdot 37) \cdot (1/122 \cdot 142) \cdot (1/4 \cdot 4) = 1/1,302,487,616$ . Suppose that the lexical sample of Wang and Mao (1995) ( $n$ ) is 5000. Then  $n \cdot p = 5000 \cdot (1/1,302,487,616)$ , and the result is far less than 0.1. Therefore, the lexical items with complete sound correspondence between Chinese and Miao-Yao are certainly related morphemes; they are not related by chance.

##### 3.1.1 Complete Sound Correspondence

Two examinations were conducted in this section. First, how well the 829 roots by Wang and Mao (1995) form sound correspondences according to the requirement of complete sound correspondence was analyzed, and then the relationship between Miao-Yao languages (or dialects) was identified. Second,

Sino-Miao-Yao related forms identified by Ratliff (2010) were examined according to the requirement of complete sound correspondence, and then the relationship between Chinese and Miao-Yao was identified.

Based on Wang and Mao (1995), 30 examples following the requirement of complete sound correspondence were found in the 11 representative languages (see Appendix 1). The completeness requires that all the parts of compared syllables can be supported by sound correspondence. In this case, it means that initial, final and tone of the compared syllables should form a sound correspondence. Taking 'stone' as an example, its sound correspondences are shown below.

#### Initial correspondence

Lexical item	JW	YH	FY	QBN	WJ	CD	DZ	LX	LZ	SJ	DP
<i>stone</i>	ʒu35	ʎi33	ʔwji31	ʎe33	jo35	ŋkja44	ŋa22	gau33	gjau35	lu33	dzu44
<i>good</i>	ʒu53	ʎu44	ʔwoŋ24	ʎaŋ41	jɔ55	ŋwan35 !	ŋoŋ31	gwəŋ55	gəŋ44	loŋ44	dzəŋ42

#### Final correspondence

Lexical item	JW	YH	FY	QBN	WJ	CD	DZ	LX	LZ	SJ	DP
<i>stone</i>	ʒu35	ʎi33	ʔwji31	ʎe33	jo35	ŋkja44	ŋa22	gau33	gjau35	lu33	dzu44
<i>path/road/way</i>	ku43	ki35	tei55	kje43	qo31	kja53	ka33	kjau53	kjau545	kləu35	tsu24

#### Tone correspondence

Lexical item	JW	YH	FY	QBN	WJ	CD	DZ	LX	LZ	SJ	DP
<i>stone</i>	ʒu35	ʎi33	ʔwji31	ʎe33	jo35	ŋkja44	ŋa22	gau33	gjau35	lu33	dzu44
<i>mushroom</i>	ŋku35	ʔi33	nʔtei31	nʔtce33	nqo35 !	ŋtʃa44	kja22	tceu33	sou35	tceu33	ku44

12 High-rank items (*full, hand, fish, tongue, hair, die, long, ashes, blood, horn, stone, and good*) and 4 Low-rank items (*fruit, snow, heavy and narrow*) were found by means of the Rank Method (Chen 1996) was applied to the database. Such a distribution suggests that the 11 Miao-Yao languages are genetically related.

Ratliff (2010) identified a group of Sino-Miao-Yao related morphemes based on Wang and Mao's study, and categorized them as Chinese loanwords. The following morphemes were examined according to the requirement of completeness. Note that three levels of proto-forms have been divided in Ratliff's study, namely, Proto-Miao-Yao, Proto-Miao and Proto-Yao. Tones of Proto-forms at the level of Proto-Miao-Yao were marked by four types of endings like the Old Chinese of Li Fang-Kuei's system: unmarked; -X; -H; and the consonant endings -p, -t, -k. The tones of Proto-Miao and those of Proto-Yao were marked by A, B, C or D. Sound correspondence between the level of Proto-Miao-Yao and Chinese is focused on in this paper.

There are 21<sup>1</sup> Sino-Miao-Yao related morphemes supported by complete sound correspondence (see Appendix 2). Take ‘borrow’ as an example, the complete sound correspondence is illustrated below.

#### Initial correspondence

Lexical item	Chinese character	Old Chinese	Middle Chinese	Proto-Miao-Yao
<i>borrow</i>	假	*krag	kæ2	KaX
<i>crow, to</i>	歌	*kar	ka1	KajH

#### Final correspondence

Lexical item	Chinese character	Old Chinese	Middle Chinese	Proto-Miao-Yao
<i>borrow</i>	假	*krag	kæ2	KaX
<i>low, short</i>	下	*grag	hæ2	GaX

#### Tone correspondence

Lexical item	Chinese character	Old Chinese	Middle Chinese	Proto-Miao-Yao
<i>borrow</i>	假	*krag	kæ2	KaX
<i>wash (hands)</i>	澡	*tsagw	tsaw2	ntsawX

Among the 21 Sino-Miao-Yao related morphemes, two belong to the Low-rank (“wash hands” 澡 and “wide” 廣) below, and none in the High-rank.

Lexical item	Chinese character	Old Chinese	Middle Chinese	Proto-Miao-Yao
<i>wash (hands)</i>	澡	*tsagw	tsaw2	ntsawX
<i>wide</i>	廣	*kwaŋ	kwaŋ2	KwjaŋX

According to the Rank Method, less related morphemes in the High-rank indicates language contact. However, there are only two related morphemes under the rigorous requirement of complete correspondence. Too few related morphemes may easily cause misrecognition. If more Sino-Miao-Yao related morphemes are found after loosening up on the requirement of complete sound correspondence, the observation from the perspective of the Rank Method will be more secure. As discussed earlier, the consequence of loosening up the requirement of complete correspondence would bring in more chance resemblances based on a comparative study of Bai and Yi, according to Wang (2011). Since the chance

1 At first, 27 related morphemes were obtained, but 6 of them could not be reconstructed for Proto-Miao-Yao.

resemblances are distributed randomly across different ranks, they will have no interference on the actual distribution of related morphemes among High-rank and Low-rank. Therefore, when there are not enough related morphemes to identify the language relationship, the requirement of complete sound correspondence can be loosened up for related morphemes for the Rank Method to be implemented.

### 3.1.2 Partial Sound Correspondence

Partial sound correspondence refers to incomplete sound correspondence. Within a syllable only some parts are supported by sound correspondence. Theoretically, partial sound correspondences identified by Wang and Mao (1995) and Ratliff (2010) include the following types: (1) Correspondence on initial and tone, not on final; (2) Correspondence on final and tone, not on initial; (3) Correspondence on initial and final, not on tone; (4) Correspondence on initial only; (5) Correspondence on final only; (6) Correspondence on tone only. However, only 17 examples of type 3 were found in Wang and Mao's study (see Appendix 3). The item 'path/road/way' was adopted as an example in order to show the partial sound correspondence.

#### Initial correspondence

Lexical item	JW	YH	FY	QBN	WJ	CD	DZ	LX	LZ	SJ	DP
<i>path/road/way</i>	kuu43	ki35	tci55	kje43	qo31	kja53	ka33	kjau53	kjau545	klɔu35	tsu24
<i>insect, worm</i>	ci35	kaŋ33	tɕen31	kjəŋ33	qɤ35	kjen44	kin22	kɛŋ33	kjeŋ35	klaŋ33	tsaŋ44

#### Final correspondence

Lexical item	JW	YH	FY	QBN	WJ	CD	DZ	LX	LZ	SJ	DP
<i>path/road/way</i>	kuu43	ki35	tci55	kje43	qo31	kja53	ka33	kjau53	kjau545	klɔu35	tsu24
<i>stone</i>	zu35	ɣi33	ʔwji31	ɣe33	jo35	ŋkja44	ŋa22	gau33	gja35	lɔu33	dzu44

#### Tone correspondence

The tonal pairs of "path/road/path" were not found across the 11 representative Miao-Yao languages.

Among these examples, there are 9 High-rank items (*person, leaf, bone, bird, moon, new, path, two, and drink*) and 2 Low-rank items (*wash and day*). Such a contrast also confirms the genetic relationship between Miao-Yao languages.

Notably, the necessity of tonal correspondence for the identification of cognates has been emphasized by Wang and Mao (1995: 20). From their viewpoint, "If we encounter a rule of initial correspondence or final correspondence and there is only one example, we should look into tone correspondence first. If the tone correspondence is regular across all representative languages, we check the initial correspondence. If the initial correspondence is also regular, then the final correspondence will be regarded as a proto-rhyme category, though there is only one example to support such a category. Similarly, if the final correspondence is regular and there are more than two examples following such a correspondence, then its initial correspondence will be regarded as a unique proto-initial category, even though there is only one example for such an initial correspondence (*Our translation*)."

identification relied on tone correspondence first, and then either initial correspondence or final correspondence. In other words, they suggested that such incomplete correspondence implied a Miao-Yao cognate. They explained two reasons why there was no parallel example for initial correspondence or for final correspondence (Wang and Mao 1995: 20). First, there were parallel examples, but they were yet to be found. Second, the initial or final in such cases has undergone unique changes in some languages. From the above examination, Wang and Mao (1995) did not insist on the principle of taking tone correspondence as a necessary condition for cognate identification, since there were Miao-Yao cognates with initial and final correspondences, but without tone correspondence.

Among Sino-Miao-Yao related morphemes in Ratliff's study (Ratliff 2010), there were three types of incomplete correspondence below.

First, correspondence on initial and tone, not on final, included 29 examples (see Appendix 4). Take "tongue" as an example. Such a type can be illustrated as follows.

#### Initial correspondence

Lexical item	Chinese character	Old Chinese	Middle Chinese	Proto-Miao-Yao
<i>tongue</i>	舌	*djat	zyjet4	mblet
<i>glutinous/sticky</i>	糝	*djət	zywit4	mblut

#### Tone correspondence

Lexical item	Chinese character	Old Chinese	Middle Chinese	Proto-Miao-Yao
<i>tongue</i>	舌	*djat	zyjet4	mblet
<i>chisel</i>	鑿	*dzakw	tsak4	dzəuk

#### Final correspondence

There is no example to support final correspondence of "tongue."

Among these 29 Sino-Miao-Yao related morphemes, there are 3 High-rank items (*tongue*, *horn* and *eye*) and 1 Low-rank item (*split*), as shown in the following table.

Lexical item	Word rank	Chinese character	Old Chinese	Middle Chinese	Proto-Miao-Yao
<i>split</i>	2	劈	*p <sup>h</sup> ik	p <sup>h</sup> ek4	p <sup>h</sup> ek
<i>tongue</i>	1	舌	*djat	zyjet4	mblet
<i>horn</i>	1	角	*kruk	kæwk4	kleɔŋ
<i>eye</i>	1	目	*mjək <sup>w</sup>	mjuwk4	mɤɛjH

Second, correspondence on final and tone, not on initial, includes 22 examples (see Appendix 5). Take "father" as an example.



## Final correspondence

Lexical item	Chinese character	Old Chinese	Middle Chinese	Proto-Miao-Yao
<i>father</i>	父	*bjag	pju2	pjaX
<i>repair/mend</i>	補	*pag	pu2	mpjaX

## Tone correspondence

Lexical item	Chinese character	Old Chinese	Middle Chinese	Proto-Miao-Yao
<i>father</i>	父	*bjag	pju2	pjaX
<i>husband</i>	父 <sup>2</sup>	*bjag	pju2	N-poX

## Initial correspondence

There is no example to support initial correspondence of “father.”

In the reconstruction of Ratliff (2010), there were 22 related morphemes in Sino-Miao-Yao. There are 4 forms in the High-rank (*new*, *clear*, *mouth/beak* and *dog*), 2 in the Low-rank (*husband* and *father*). Examples are as following:

Lexical item	Word rank	Chinese character	Old Chinese	Middle Chinese	Proto-Miao-Yao
<i>husband</i>	2	父	*bjag	pju2	N-poX
<i>father</i>	2	父	*bjag	pju2	pjaX
<i>new</i>	1	清	*ts <sup>h</sup> jiŋ	ts <sup>h</sup> jeŋ <sub>1</sub>	ts <sup>h</sup> jiəŋ
<i>clear</i>	1	清	*ts <sup>h</sup> jiŋ	ts <sup>h</sup> jeŋ <sub>1</sub>	nts <sup>h</sup> jiəŋ
<i>mouth/beak</i>	1	嘴	*tsjig	tsjwe2	ɲjuj
<i>dog</i>	1	狗	*kug	kuw2	qluwX <sup>3</sup>

Third, correspondence on tone only, not on initial and final, includes 29 examples (see Appendix 6). Take ‘plum’ as an example.

- 2 It is notable that “father” and “husband” are different in Proto-Miao-Yao while the same in Chinese, which strongly suggests that different layers should have been involved. However, evidence from sound correspondences is not enough to identify borrowing. A similar phenomenon has occurred for “new” and “clear.”
- 3 Ostapirat (2016) argued that “dog” may be borrowed from Proto-Miao-Yao to Chinese as 狗 since the phonological appearance of “dog” in Proto-Miao-Yao is more complex than that in Old Chinese. Interestingly, he mentioned that another native root for “dog” is 犬, which appeared earlier in Chinese and can be traced back to Tibeto-Burman. If the two forms have exactly the same meaning, the motivation for the later borrowing from Proto-Miao-Yao to Chinese is shaky. In *Shuowenjiezi*, the difference between the two Chinese characters, 犬 and 狗, is stated clearly as “the former is big, while the latter small.”

Lexical item	Word rank	Chinese character	Old Chinese	Middle Chinese	Proto-Miao-Yao
<i>plum</i>	0	李	*ræg	liz	hljəŋX
<i>braid, a braid</i>	0	辮	*bian	benz	mbjinXt

Among these 29 examples, there are 5 High-rank items (*neck, nose, tree, one, and drink*) and 3 Low-rank (*rope, far, and year*), shown in the following table.

Lexical item	Word rank	Chinese character	Old Chinese	Middle Chinese	Proto-Miao-Yao
<i>neck</i>	1	頸	*kjiŋ	kjiəŋ2	qlaŋ
<i>nose</i>	1	鼻	*bjit	bjiŋ3	mbruiH
<i>tree</i>	1	樹	*djug	dzyju3	ntjuəŋH
<i>one</i>	1	一	*ʔjit	ʔjit4	ʔi
<i>drink/smoke</i>	1	飲	*həp	xop4	hup
<i>rope/sash/cord</i>	2	繩	*djəŋ	zyiŋ1	hljaŋ
<i>far</i>	2	迂	*ʔjag	ʔju1	qwuw
<i>year</i>	2	年	*nin	nem1	hjuəŋH

### 3.2 Partial Sound Correspondence and the Nature of Sino-Miao-Yao Related Morphemes

If we loosen up the requirement of complete correspondence, several different contrasts between High-rank and Low-rank Sino-Miao-Yao related words can be obtained in the following table.

	Complete correspondence	2/3 correspondence	1/3 correspondence
High-rank	——	'tongue' 舌, 'horn' 角, 'eye' 目, 'new/clear' 清, 'mouth/beak' 嘴, 'dog' 狗	'neck' 頸, 'nose' 鼻, 'tree' 樹, 'one' 一, 'drink/smoke' 飲
Low-rank	'wash' 澡, 'wide' 廣	'split' 劈, 'father/husband' 父	'rope/sash/cord' 繩, 'far' 迂, 'year' 年

It is notable that there are 6 High-rank items vs. 4 Low-rank ones under the loosened requirement of at least two out of three elements (initial, final and tone) with sound correspondence. Such contrast suggests that the relationship between Chinese and Miao-Yao is homogenous. If we loosen up the requirement of complete correspondence further to at least one out of three elements with sound correspondence, the High-Low contrast is 11 vs. 7. This result confirms the genetic relationship between Chinese and Miao-Yao.

The Inexplicability Principle mentioned in Section 1 can be used to examine whether these Sino-Miao-Yao related morphemes are borrowed by Miao-Yao from Chinese. In Chinese history, Chinese is usually considered to be the donor language and Miao-Yao languages are considered to be the recipient language.

Among these complete correspondences identified above, the item of “wash (hands)” was used for the Inexplicability Principle.

Lexical item	Word rank	Chinese character	Old Chinese	Middle Chinese	Proto-Miao-Yao
<i>wash (hands)</i>	2	澡	*tsagw	tsaw2	ntsæwX

In the partial correspondences, some examples following the Inexplicability Principle are listed as follows.

Lexical item	Word rank	Chinese character	Old Chinese	Middle Chinese	Proto-Miao-Yao
<i>tongue</i>	1	舌	*dʒat	zyjet4	mblet
<i>clear</i>	1	清	*tsʰjɪŋ	tsʰjeŋ1	ntsʰjɪəŋ
<i>mouth/beak</i>	1	嘴	*tsjig	tsjwe2	ɲɲuj
<i>dog</i>	1	狗	*kug	kuw2	qluwX
<i>neck</i>	1	頸	*kjiŋ	kjieŋ2	qlaŋ
<i>nose</i>	1	鼻	*bjit	bjij3	mbruiH
<i>tree</i>	1	樹	*dʒug	dzyju3	ntjɹəŋH
<i>rope/sash/cord</i>	2	繩	*dʒəŋ	zyiŋ1	hljaŋ
<i>far</i>	2	迂	*ʔjag	ʔju1	qwuw
<i>year</i>	2	年	*nin	nen1	hɲɹəŋH

For these examples, it is difficult to use the original initials in the donor language (Chinese) to explain the changes in the recipient language (Miao-Yao) by using a plausible mechanism of sound change or reproduction. For example, the initial of “wash” 澡 from Old Chinese to Middle Chinese is always ts-, but the counterpart in Miao-Yao is nts-, and how could the n- pre-initial in Miao-Yao have been acquired? Similarly, it is difficult to explain the addition of a pre-nasal for “clear,” “nose” and “mouth” in Miao-Yao. The initial of “tongue” changes from Old Chinese d- to Middle Chinese zy-. Neither stage could offer the origin of mb- in Miao-Yao. The velar initials of “dog” and “neck” in Chinese are very unlikely to be reproduced as ql- in Miao-Yao via borrowing. It is notable that all these examples suggest that Miao-Yao kept more phonological distinctions. According to the Inexplicability Principle, these examples cannot be explained by the borrowing mechanism. Therefore, it is very likely that these examples are inherited from their common ancestor, and Miao-Yao kept more ancient phonological information in these examples. Taking reflexes in Miao-Yao as the reference of Proto-Sino-Miao-Yao, their changes into counterparts in Chinese are much more plausible.

There is no denying that the Inexplicability Principle bears some limitations. First, proto-languages are often used in comparison, but reconstructed systems are conditioned by elements from modern languages. Some early features may be lost in all modern dialects and cause inexplicable cases. Second, a knowledge of sound change will be improved with the advance of phonetic studies. The so-called inexplicability is always confined to the current knowledge of researchers (Wang 2017).

#### 4 Pervasive Correspondence, Complete Correspondence and Sino-Miao-Yao Comparison

The most rigorous requirements of related morphemes are supported by pervasive correspondences (Wang 2015) and complete correspondences. The Sino-Miao-Yao related morphemes among basic words would be no High-rank items but 1 Low-rank item (“wash” 澡). Such a case suggests language contact. As previously stated, identifying language relationship based on small numbers of items is unreliable. If we loosen up on the requirement of pervasiveness and completeness, many more related morphemes will be obtained, and a genetic relationship between Chinese and Miao-Yao will be suggested by the indicator of more High-rank items than Low-rank below.

High-rank: “tongue” 舌, “eye” 目, “new/clear” 清, “mouth/beak” 嘴, “dog” 狗, “neck” 頸, “nose” 鼻, “tree” 樹, “one” 一, “drink/smoke” 飲;

Low-rank: “wash (hands)” 澡, “wide” 廣, “split” 劈, “father/husband” 父, “rope/sash/cord” 繩, “far” 迂, “year” 年;

The earlier two languages split, the less related morphemes will be preserved in modern languages, and the fewer sound correspondences could be found. As shown in Wang (2011), if we loosened up the requirement of sound correspondence, more related morphemes may be found, while taking the risk of the addition of chance resemblances and borrowings.

#### 5 Examination of Homogeneity of Lexicon

It is a notable phenomenon that rich synonyms have been accumulated in Chinese. One reason may be language contact as proposed by Schuessler (2003). In order to exclude borrowings, the examination of homogeneity of the lexicon may be implemented as proposed by Wang (2013: 7). The lexical items in comparison should be confined to a particular language of a certain period. For this purpose, Swadesh basic words of Old Chinese have been worked out by Chen and Wang (2006). The Sino-Miao-Yao related words in this paper may be filtered through this basic-word list under the most rigorous standards. The result of a High-Low rank contrast shown in Section 4 may be modified as the following.

High-rank: “tongue” 舌, “eye” 目, “dog” 狗, “neck” 頸, “nose” 鼻, “tree” 樹, “one” 一;

Low-rank: “wide” 廣, “father/husband” 父, “rope/sash/cord” 繩;

Such a contrast suggests the Old Chinese and Proto-Miao-Yao have demonstrated a genetic relationship according to the Rank Method as well.

#### 6 Concluding Remarks

In this study, we applied the requirement of complete sound correspondence, and the genetic relationship between Miao-Yao languages has been confirmed by the Rank Method. Loosening up the requirement to a certain degree has also supported the genetic relationship between the Miao-Yao languages. The same procedure was implemented to the Sino-Miao-Yao related morphemes. A genetic relationship, rather than language contact, was suggested by the Rank Method. Moreover, the application of the

Inexplicability Principle has weakened the hypothesis of borrowing from Chinese to Miao-Yao. Combined with a study from the perspective of pervasive sound correspondence (Wang 2013), the idea of a genetic relationship between Chinese and Miao-Yao is supported.

In this comparison, the careful analysis of sound correspondence between languages has been highlighted. Though the final identification of a genetic relationship between languages is much noticeable, the basis of the identification and the sound correspondence in historical comparison may need more attention.

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## Appendix 1

Examples for completeness of sound correspondence of Miao-Yao

Lexical item	<i>full</i>	<i>hand/arm</i>	<i>fish</i>	<i>tongue</i>	<i>hair</i>
Word rank	1	1	1	1	1
Chinese character	——	——	——	舌	——
Ratliff (2010)	pɤɛŋX	-bɔuX	mbrəuX	mblet	pljei
Wang and Mao (1995)	pwtsuəŋ3	bwdzəu4	mɔdzəu4	mblet8	p oi1
JW	pe44	tu33	mzɯ33	mja33	pi35
YH	pɛ35	pi11	zɛ11	ni31	ɬu33
FY	paŋ55	wei55	mpji55	mple31	plou31
QBN	puŋ43	pe232	mpje232	ntɬa21	ɬa33
WJ	pɔ̃31	<b>pɦu42F!</b>	mpjo42	mpɦi42	pi35
CD	paŋ53	tɬa31	mpja31	mpli32	ple44
DZ	paŋ33	k <sup>h</sup> wa42	pja42	pi35	pi22
LX	pwəŋ53	pu213	bjau213	bjet32	pje33
LZ	pɔŋ545	pu32	bjau32	bjet21	pjei35
SJ	<b>baŋ35F!</b>	pɔu21	plɔu21	pje22	pli33
DP	<b>baŋ24F!</b>	pu44	bju44	<b>bet22I!</b>	pei44

Lexical item	<i>die</i>	<i>long</i>	<i>ashes</i>	<i>blood</i>	<i>horn</i>
Word rank	1	1	1	1	1
Chinese character	——	——	——	——	角
Ratliff (2010)	dəjH	ntauX	tshjuəiX	ntshjamX	kleɔŋ
Wang and Mao (1995)	dai6	ntæ:u3	tɕ <sup>h</sup> wo:i3	ŋtɕ <sup>h</sup> ja:m3	klo:ŋ1
JW	tɑ42	ntu44	ɛi44	n <sup>h</sup> te <sup>h</sup> i44	ce35
YH	ta13	ta35	ɛ <sup>h</sup> u35	ɛ <sup>h</sup> aŋ35	ki33
FY	ðɑ24	n <sup>h</sup> ti55	t <sup>h</sup> u55	n <sup>h</sup> t <sup>h</sup> en55	ka31
QBN	tɔ221	n <sup>h</sup> te43	sa43	nt <sup>h</sup> əŋ43	kjuŋ33
WJ	<b>tɦe44F!</b>	<b>to31I!</b>	ɛe31	n <sup>h</sup> tɛe31	qɔ̃35
CD	ta22	ðɑ53T!	θe53	θi53T!	kjaŋ44
DZ	t <sup>h</sup> a42	ta33	si33	sji33	kaŋ22

## Examples for completeness of sound correspondence of Miao-Yao (cont.)

Lexical item	<i>die</i>	<i>long</i>	<i>ashes</i>	<i>blood</i>	<i>horn</i>
LX	tai11	da:u53	ɕwai53	ɕam53I!F!	kɔŋ33
LZ	tai22	da:u545	sai545	sa:m545I!	kjɔŋ35
SJ	tai12	dɔu35	ɕi35	tɕ <sup>h</sup> an35	klɔŋ33
DP	tai22	du24	sɔi24	dʒjɛm24	kɔu44

Lexical item	<i>stone</i>	<i>good</i>	<i>fruit</i>	<i>snow</i>	<i>heavy</i>
Word rank	1	1	2	2	2
Chinese character	——	——	——	——	——
Ratliff (2010)	-ʔrəu	-ʔrɔŋH	pjiəuX	——	hnjeinX
Wang and Mao (1995)	ŋklaui	ŋkleəŋ5	ptsou3	mpwtsən5	ŋuŋ3
JW	zɔu35	zɔu53	pi44	mpe53	hei44I!
YH	yi33	yɔu44	tseŋ35	pɛ44	ŋ.hon35
FY	ʔwji31	ʔwjoŋ24	pze55	mʔpaŋ24	ŋ.ɔŋ55
QBN	yɛ33	yən41	pi43	mpuŋ41	ŋ.ɔŋ43
WJ	jɔ35	jɔ55	pe31	mɔ55I!	ŋ.a31
CD	ŋkja44	ŋwan35I!	pi53	mpaŋ35	ŋ.e53F!
DZ	ŋa22	ŋɔŋ31	pji33	paŋ31	ŋji33
LX	gau33	gwəŋ55F!	pjeu53	bwən55	ŋ.i53
LZ	gjau35	gɔŋ44	pjo545	van44	ni545
SJ	lɔu33	lɔŋ44	bjɔu35	pan44	ŋe35
DP	dzu44	dɔŋ42F!	bɛu24	ban42	nei24

Lexical item	<i>narrow</i>	<i>taro</i>	<i>wear (cap)</i>	<i>CLF-bowls</i>	<i>short</i>
Word rank	2	0	0	0	0
Chinese character	狹	芋	——	——	——
Ratliff (2010)	NGeD/hepD	wouH	ntɔŋH	ʔleŋA/ʔneɔmA	ʔleŋB/ʔnəŋB
Wang and Mao (1995)	NGe:p8	vəu6	ntim5	ʔnlɔ:m1	ʔnlaəŋ3
JW	ŋa33	wə42	ntu53	le35	le44



Lexical item	<i>narrow</i>	<i>taro</i>	<i>wear (cap)</i>	<i>CLF-bowls</i>	<i>short</i>
YH	ŋj31	vu13	tə44	lɛ33	lɛ35
FY	Nqe31	w024	nʔtoŋ24	?laŋ31	?laŋ55
QBN	ŋka21	vo221	ntaŋ41	luŋ33	luŋ43
WJ	ŋkfiɛ42	vhɔ44	nɔ̃55!	lɔ̃35	lɔ̃31
CD	ŋkai32	vau22	ntwaŋ35!	xoŋ44!	laŋ53
DZ	kwei35!	vu42F!	təŋ31	naŋ22	naŋ33
LX	hep32	hou11	doŋ55	nɔ̃m33	naŋ53
LZ	hep21	hou22	dəŋ44	nɔ̃m35	naŋ545
SJ	he22	heu12	təŋ44	nɔ̃33	naŋ35
DP	hep22	vu22	dəŋ42	na44	naŋ24

Lexical item	<i>fat, to be</i>	<i>steal</i>	<i>eight</i>	<i>ten</i>	<i>mushroom</i>
Word rank	o	o	o	o	o
Chinese character	——	——	——	——	菇
Ratliff (2010)	grəunH	ɲemH	jat	gjuɛp	ŋkjæu
Wang and Mao (1995)	q̄lon6	nɛ:m6	zAt8	fap8	ɲcə1
JW	təŋ42	nɛ42	zi33	ku33	ŋku35
YH	taŋ13	nəŋ13	za31	teu31	tei33
FY	zəŋ24	nɛn24	za31	ɣo31	nʔtei31
QBN	tj221	nij221	zo21	teu21	ntce33
WJ	tɛhɔ̄44	nɛhi44	jfi42	kɛhɛ42	Nqo35!
CD	foŋ22	nij22	je32	tfɔ̄32	ŋtfa44
DZ	k <sup>h</sup> uŋ42	ŋin42	zi35	k <sup>h</sup> jo35	kja22
LX	kun11	nim11	jat32	ɛep32	teəu33
LZ	kun22	nim22	jet21	sap21	sou35
SJ	klun12	nij12	jæ22	teæ22	teəu33
DP	tin22!	nɛm22	d̄zjat22	sjep 22	ku44

Examples for completeness of sound correspondence of Miao-Yao (cont.)

Lexical item	<i>catty</i>	<i>vegetable</i>	<i>chicken</i>	<i>cucumber</i>	<i>cross (river)</i>
Word rank	o	o	o	o	o
Chinese character	斤	——	雞	瓜	過
Ratliff (2010)	kwjan	ʔræi	Kəi	Kwa	KwajH
Wang and Mao (1995)	cwɪ:nɪ	ŋklɛi	qəi	qlvaɪ	qlva:i5
JW	kaŋ35	zei35	qa35	kwa35	kwa53
YH	tɛaŋ33	ɣu33	qeɪ33	fa33瓜	fa44
FY	tɛn31	ʔwju31	qe31	qwa31	qwa2
QBN	ken33	ɣa33	ka33	ko33	kwɔ41
WJ	kō35	i35	qe35	qwa35	kwa55
CD	tʃoŋ44	ji44!	kai44	kwe44	kwa35
DZ	kjuŋ22	zizz!	kwei22	kweizzF!	kwa31
LX	tɛwən33	gai33	tɛai33	kwa33	kwɔi55
LZ	san35	gjai35	tai35	kwa35	kui44
SJ	tɛwən33	lai33	kai33	kwa33 F!	kwei44
DP	tsan44	ei44	kui44	ka44F!	kɛi42

## Appendix 2

Examples of completeness of sound correspondence of Sino-Miao-Yao

Lexical item	Word rank	Chinese character	Old Chinese	Middle Chinese	Proto-Miao-Yao
<i>money</i>	o	錢	*dzjan	dzjenɪ	dzjen
<i>grain head, bag</i>	o	囊	*naŋ	naŋɪ	hnɔn
<i>catty</i>	o	斤	*kjən	kjinɪ	kwjan
<i>indigo</i>	o	藍	*glam	lamɪ	ŋglam
<i>sweet</i>	o	甘	*kam	kamɪ	Kam
<i>scatter, sprinkle</i>	o	噴	*pʰən	pʰwonɪ	mpʰuənH
<i>crow, to</i>	o	歌	*kar	kaɪ	KajH
<i>buy</i>	o	買	*mrig	mei2	mejX
<i>wash (hands)</i>	2	澡	*tsagw	tsaw2	ntsæwX

Lexical item	Word rank	Chinese character	Old Chinese	Middle Chinese	Proto-Miao-Yao
<i>borrow</i>	0	假	*krag	kæ2	KaX
<i>wide</i>	2	廣	*kwaŋ	kwaŋ2	KwjaŋX
<i>sing, cry out</i>	0	號	*gagw	haw3	Gæw
<i>low, short</i>	0	下	*grag	hæ2	GaX
<i>sell</i>	0	賣	*mrig	mɛi3	mɛjH
<i>craftsman</i>	0	匠	*dzjaŋ	dzjaŋ3	dzjaŋH
<i>cross (river)</i>	0	過	*kwar	kwa3	KwajH
<i>hundred</i>	0	百	*prak	pæk4	pæk
<i>receive, borrow</i>	0	接	*tsjap	tsjep4	tsep
<i>insert</i>	0	插	*ts <sup>h</sup> rap	ts <sup>h</sup> ɛp4	t <sup>h</sup> ɛp
<i>embrace</i>	0	伏	*bjæg	bjuwk4	buəH
<i>hatch</i>	0	伏	*bjæg	bjuwk4	buəH

### Appendix 3

Examples of Sino-Miao-Yao's correspondences on initial and final, not on tone

Lexical item	<i>person</i>	<i>leaf</i>	<i>bone</i>	<i>bird</i>	<i>moon</i>
Word rank	1	1	1	1	1
Chinese character	民	——	——	——	——
Ratliff (2010)	nænA/mjænA	mblɔŋA/nɔmA	tshuŋX	m-nɔk	hlaH
Wang and Mao (1995)	mwjnu:n2	mblɔ:m2	t <sup>h</sup> wjɔŋ3	nmɔk6/8	ɭa5
JW	ne31	nu31	soŋ44	nu42	ɭ <sup>h</sup> a53
YH	ne55	nə55	s <sup>h</sup> oŋ35	nə13	ɭ <sup>h</sup> a44
FY	na31	mploŋ31	t <sup>h</sup> oŋ55	nɔ24	ɭa24
QBN	nɔ13	ntɬaŋ35	θ <sup>h</sup> ɔŋ54	naŋ221	ɬo41
WJ	mjɬɛ33	mpɬjɔ33	sɔ31	mɔ44	ɬa55
CD	nai33	mplɔŋ33	θɛŋ53	nwaŋ22!	ɭe35
DZ	ne53	pjɔŋ53	suŋ33	nɔ42	ne31
LX	mwan31	nɔm31	θuŋ53	nu32	la35!
LZ	mun33	nɔm33	t <sup>h</sup> uŋ545	nɔ22	la21
SJ	meŋ55	neŋ55	sjoŋ35	nɔ22	lu44
DP	min53	num53	hiŋ24	nɔu22	ɭu42

Examples of Sino-Miao-Yao's correspondences on initial and final, not on tone (cont.)

Lexical item	<i>new</i>	<i>road/way</i>	<i>two</i>	<i>drink/smoke</i>	<i>wash (hands)</i>
Word rank	1	1	1	1	2
Chinese character	清	—	—	飲	澡
Ratliff (2010)	tshjəŋ	kləuX	ʔui	hup	ntsəwX
Wang and Mao (1995)	tʂʰæŋɿ	clau3	ʔuɿ	həp7	ntsə:u3
JW	ɕɛ35	ku43	u35	hu44	ntsə44
YH	xʰi33	ki35	o33	hə53	sa35
FY	sen31!	tɕi55	u31	ho31	nʔtsi55
QBN	sʰiŋ33	kje43	au33	hu32	ntʰai43
WJ	seŋ35	qo31	va35!	hə53	nte31!
CD	ŋkʰeŋ343!	kja53	u44	xə43 <sup>喝</sup>	ŋtʃei53
DZ	hin22!	ka33	u22	hə35 <sup>喝</sup>	tsji33
LX	ɕaŋ31T!	kjau53	vi33!	hop43 <sup>喝</sup>	da:u55
LZ	saŋ31	kjau545	i35	həp32 <sup>喝</sup>	da:u44
SJ	ɕaŋ33	kləu35	vi33!	hə35 <sup>喝</sup>	tsə35
DP	sjaŋ44	tsu24	vi42!T!	hup44 <sup>喝</sup>	dəu24

Lexical item	<i>sun/day</i>	<i>urine</i>	<i>sour</i>	<i>six</i>	<i>iron</i>
Word rank	2	0	0	0	0
Chinese character	—	—	酸	—	鐵
Ratliff (2010)	hnɛŋA/hnɿɿA	-raX	suj	kruk	hluwC/hrekD
Wang and Mao (1995)	ŋwə:i	vzɕ4	θə:i	tʃə:k5	ʃok5/7
JW	ŋʰe35	zɕ33	ɕə35	tə53	ʃʰə53
YH	ŋʰe33	vaɿ!	ɕʰu33	tə44	ʃʰə44
FY	ŋa31	wja55	so31	tʂo24	ʃo24
QBN	ŋəŋ33	ɣo232	sʰu33	tʃu41	ʃu41
WJ	ŋe35	vʰe42	sɕ35	tɕə55	ʃu55F!

Lexical item	<i>sun/day</i>	<i>urine</i>	<i>sour</i>	<i>six</i>	<i>iron</i>
CD	ŋɔ343	ŋkwe31	θjɔ44	ʃɔ35	lɔ35
DZ	nɔ22	zi42	sɔ22	kɔ31	nɔ31
LX	ŋɔi33	wa213	ɕui33	<b>kwo43I!</b>	gja43
LZ	nɔi31	va22	tθui31	kjɔ24	gja31
SJ	nwei33	fu21	ɕi33	klɔ35	lja35
DP	nai44	vje44	si44	tɔu44	lje44

Lexical item	<i>nine</i>	<i>itch(y)/scratch(y)</i>
Word rank	o	o
Chinese character	——	——
Ratliff (2010)	N-ɲuə	khjuət
Wang and Mao (1995)	ɖzwɔu2	c <sup>h</sup> et7
JW	tɛ031	<b>ɕi55T!</b>
YH	tɛə55	<b>tɛ<sup>h</sup>u44T!</b>
FY	za31	k <sup>h</sup> 031
QBN	<b>tɛ013F!</b>	tɛ <sup>h</sup> u32
WJ	kfi033	<b>ŋku53I!</b>
CD	ʃu33	ʃɔ43
DZ	k <sup>h</sup> ju53	<b>k<sup>h</sup>ji31T!</b>
LX	du31	ɕet43
LZ	du33	set32
SJ	tɛu35	tɛɛ35
DP	ku53	kɛt44

## Appendix 4

Examples of Sino-Miao-Yao's correspondences on initial and tone, not on final

Lexical item	Word rank	Chinese character	Old Chinese	Middle Chinese	Proto-Miao-Yao
<i>hoof</i>	0	蹄	*dig	deɣ <sub>1</sub>	dej
<i>copper</i>	0	銅	*duŋ	duwŋ <sub>1</sub>	dɔŋ
<i>sickle</i>	0	鎌	*ram	ljem <sub>1</sub>	ljim
<i>buckwheat</i>	0	蕎	*gjagw	gjew <sub>1</sub>	ɣæu
<i>bridge</i>	0	橋	*gjagw	gjew <sub>1</sub>	ɣow
<i>ride</i>	0	騎	*gjiar	gje <sub>1</sub>	ɣej
<i>thread, to</i>	0	穿	*t <sup>h</sup> juan	tsy <sup>h</sup> jwem <sub>1</sub>	c <sup>h</sup> u_en
<i>pear</i>	0	梨	*rid	liɣ <sub>1</sub>	rəɣ
<i>chicken</i>	0	雞	*kig	keɣ <sub>1</sub>	Kəi
<i>pillow</i>	0	枕	*drjəm	tsyim <sub>2</sub>	ɣcɥəmH
<i>fry</i>	0	攪	*krəgw	kæw <sub>2</sub>	kleu
<i>fly</i>	0	蠓	*muŋ	muwŋ <sub>2</sub>	məuŋX
<i>early</i>	0	早	*tsəgw	tsaw <sub>2</sub>	ntsɣouX
<i>warm</i>	0	暑	*st <sup>h</sup> jag	syo <sub>2</sub>	sjiiouX
<i>village</i>	0	裡	*rəg	li <sub>2</sub>	rəŋX
<i>CLF-quilts</i>	0	片	*p <sup>h</sup> ian	p <sup>h</sup> en <sub>3</sub>	p <sup>h</sup> əan
<i>vine</i>	0	蔓	*mjān	mjwōn <sub>3</sub>	hmein
<i>send, deliver</i>	0	送	*suŋ	suwŋ <sub>3</sub>	suŋH
<i>bed, place</i>	0	處	*t <sup>h</sup> jag	tsy <sup>h</sup> jō <sub>3</sub>	c <sup>h</sup> ouH
<i>taste, try</i>	0	味	*mjəd	mjwij <sub>3</sub>	hmeiH
<i>split, cut</i>	2	劈	*p <sup>h</sup> ik	p <sup>h</sup> ek <sub>4</sub>	p <sup>h</sup> ek
<i>glutinous/sticky</i>	0	秠	*djət	zywit <sub>4</sub>	mblut
<i>tongue</i>	1	舌	*djat	zyjet <sub>4</sub>	mblet
<i>chisel</i>	0	鑿	*dzakw	tsak <sub>4</sub>	dzəuk
<i>quick</i>	0	捷	*dzjap	dzjep <sub>4</sub>	cɥep
<i>get, gain</i>	0	得	*tək	tok <sub>4</sub>	təuk
<i>horn</i>	1	角	*kruk	kæwk <sub>4</sub>	kleɔŋ
<i>duck</i>	0	鴨	*ɣrap	ɣæp <sub>4</sub>	ɣap
<i>eye</i>	1	目	*mjək <sup>w</sup>	mjuwk <sub>4</sub>	mɥejH

## Appendix 5

Examples of Sino-Miao-Yao's correspondences on final and tone, not on initial

Lexical item	Word rank	Chinese character	Old Chinese	Middle Chinese	Proto-Miao-Yao
<i>husband</i>	2	父	*bjag	pju2	N-poX
<i>cut open</i>	0	破	*p <sup>h</sup> ar	p <sup>h</sup> wa3	p <sup>h</sup> ajH
<i>look at</i>	0	望	*mjaŋ	mjwaŋ3	maŋH
<i>taro</i>	0	芋	*gwjag	xju1	wouH
<i>repair, mend</i>	0	補	*pag	pu2	mpjaX
<i>father</i>	2	父	*bjag	pju2	pjaX
<i>thousand</i>	0	千	*ts <sup>h</sup> in	ts <sup>h</sup> en1	ts <sup>h</sup> iɛn
<i>stove</i>	0	竈	*tsəgw	tsaw3	N-tsoH
<i>sore, boil, blister</i>	0	瘡	*ts <sup>h</sup> rjaŋ	ts <sup>h</sup> rjaŋ1	ts <sup>h</sup> aŋ
<i>carry on shoulder</i>	0	擔	*tam	tam3	ntam
<i>center, middle</i>	0	中	*trjəŋw	trjuwŋ1	ntronŋ
<i>half kilometer</i>	0	裡	*rəg	li2	ljiX
<i>new</i>	1	清	*ts <sup>h</sup> jiŋ	ts <sup>h</sup> jeŋ1	ts <sup>h</sup> jiəŋ
<i>clear</i>	0	清	*ts <sup>h</sup> jiŋ	ts <sup>h</sup> jeŋ1	nts <sup>h</sup> jiəŋ
<i>wink</i>	0	眨	*tsrap	tsrɛp4	ntsjep
<i>mouth/beak</i>	1	嘴	*tsjig	tsjwe2	ɲɲuj
<i>sheep, goat</i>	0	羊	*raŋ	yjaŋ1	juŋ
<i>strength</i>	0	力	*rək	lik4	-rək
<i>thirsty</i>	0	渴	*k <sup>h</sup> at	k <sup>h</sup> at4	Nk <sup>h</sup> at
<i>dog</i>	1	狗	*kug	kuw2	qluwX
<i>peach</i>	0	桃	*dagw	daw1	Glæw
<i>guest</i>	0	客	k <sup>h</sup> rak	k <sup>h</sup> æk4	Khæk

## Appendix 6

Examples of Sino-Miao-Yao's correspondences on tone, not on initial and final

Lexical item	Word rank	Chinese character	Old Chinese	Middle Chinese	Proto-Miao-Yao
<i>plum</i>	0	李	*rəg	li2	hljəŋX
<i>crest, comb</i>	0	冠	*kwan	kwan1	ʔwǰæn
<i>braid, a braid</i>	0	辮	*bian	ben2	mbjinX
<i>nose</i>	1	鼻	*bjit	bjij3	mbruiH
<i>sour</i>	0	酸	*suan	swan1	suɟ
<i>paint, lacquer</i>	0	漆	*tsʰjit	tsʰit4	tʰjet
<i>grow</i>	0	種	*tjuɟ	tsyjowŋ3	n-tjueŋH
<i>charcoal</i>	0	炭	*tʰan	tʰan3	tʰanH
<i>put on/wear (shoes)</i>	0	踏	*tʰəp	tʰop4	dap
<i>sash/cord/rope</i>	2	繩	*djəŋ	zyiŋ1	hljaŋ
<i>chopsticks</i>	0	箸	*trjag	drjo3	drouH
<i>field</i>	0	田	*din	den1	ljij
<i>bamboo stripe</i>	0	竹	*trjəkʷ	trjuwk4	ɲcəuk
<i>balance</i>	0	秤	*tʰjəŋ	tsyʰiŋ3	ntʰjuəŋH
<i>year</i>	2	年	*nin	nen1	hɲuəŋH
<i>silver</i>	0	銀	*ŋjiən	ŋin1	ɲwǰən
<i>tree</i>	1	樹	*djug	dzyju3	ntjjuəŋH
<i>gold</i>	0	金	*kjəm	kim1	kjeəm
<i>water buffalo/cow</i>	0	牛	*ŋjəg	ŋjuw1	ŋjuɟ
<i>shrink</i>	0	縮	*srjəkʷ	srjuwk4	hjuk
<i>tile</i>	0	瓦	*ŋwrar	ŋwæ2	ŋwæX
<i>dragon</i>	0	龍	*ruŋ	ljowŋ1	-roŋ
<i>old</i>	0	故	*kag	ku3	quoH
<i>slippery/smooth</i>	0	滑	*gwrət	hwet4	ɲuat
<i>neck</i>	1	頸	*kjiŋ	kjiɛŋ2	qlaŋ
<i>far</i>	2	迂	*ʔjag	ʔju	qwuw
<i>have a gap</i>	0	缺	*kʰwjat	kʰwet4	NKwet
<i>one</i>	1	一	*ʔjit	ʔjit4	ʔi
<i>drink/smoke</i>	1	飲	*həp	xop4	hup



## 語音對應與苗瑤語比較研究

從完全對應的角度看

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### 提要

嚴格的語音對應是歷史比較的基礎，也是判定語源關係的必要條件。在苗瑤語的語源問題研究中，李方桂（1937）提出漢藏語系四語族學說，即漢語、藏緬語、侗台語和苗瑤語。Benedict（1942、1975）則將苗瑤語從漢藏語系中劃分出去，理由是苗瑤語和漢語有對應關係的語素是由接觸造成的。苗瑤語系屬問題的爭議焦點在於苗瑤語和漢語音近義同的一批關係語素是否有嚴格的語音對應支持，然而這一問題一直以來不被重視。本文基於完全對應得到苗瑤語族內部11個語言的關係語素，隨後應用詞階法分析，結果如願所示，這11個語言之間具有發生學關係。同樣的程序應用于漢-苗瑤語關係語素，結果與上述呈現的模式相同，即這些關係語素是來自漢語和苗瑤語共同的祖語，而非語言接觸的產物。結合普遍對應的研究（Wang 2015），漢語和苗瑤語的發生學關係可以得到支持。不可釋原則也顯示漢-苗瑤語關係語素是由苗瑤語從漢語借用的可能性較小，因為二者間的部分語音對應不可能通過自然音變來解釋。此外，從上古漢語的角度對漢-苗瑤語關係語素的校驗也支持二者的同源關係。

### 關鍵詞

嚴格語音對應、完全對應、漢-苗瑤語關係語素、詞階法、不可釋原則