

# **The Tai-Kadai Peoples of Hainan Island and Their Languages**

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## **INTRODUCTION**

In May 1992, Pranee Kullavanijaya and I conducted our field surveys for the Tai-Kadai Languages and Ladies' Costumes Project in Guangxi, Guizhou, and Hainan. We did the first part of our surveys in Guangxi together and then split up for the second part; she took care of the one in Guizhou, and I was responsible for the one in Hainan.

In the past, Hainan Island was called Hainan Li-Miao Autonomous Prefecture; it was part of Guangdong Province. This prefecture comprised eight counties: Dongfang, Baisha, Baoting, Changjiang, Qiongzhou, Lingshui, Yazian, and Ledong. Later on, Hainan became a province. At present, Hainan Province consists of three cities: Haikou, which is the capital, Tongza, and Sanya, and 16 counties: Lingao, Danzhou, Chengmai, Qiongzhou, Wencheng, Dingan, Tunchang, Qionghai, Baisha, Qiongzhou, Wanning, Lingshui, Baoting, Ledong, Dongfang, and Changjiang. See the map of Hainan Province in Appendix 3.

The Matisoff 200-word list was used for my language survey on Hainan Island. As for women's clothing and ornaments, I made a lot of sketches and noted down the name of each piece of the items worn by the amateur models and also of the ones displayed in the Tongza Museum of Ethnology.

The major aims of this paper are to draw the attention of the Thai-Tai studies specialists to the Be (Ong Be), Ngao Fon (Cun people) and four groups of Li (Hlai), and also to contribute some Tai-Kadai language data (Lists A and B in Appendix 1) collected by me during my Hainan field trip, along with my linguistic viewpoints concerning the three Tai-Kadai languages spoken in Hainan, which may be of benefit to Tai-Kadai language specialists and at the same time to scholars in other fields.

## **BE (ONG BE)**

In Lingao I had an opportunity to work with a Be speaker from Dungying subdistrict. Even though there are about 500,000 Be speakers in Hainan Province, they are officially regarded as part of the Han nationality. Some varieties of the Be language were studied by Savina (1929, 1965), Haudricourt (1984), Hashimoto (1980, 1982, 1985), Zhang, Ma, Wen, & Wei (1985), and Hansell (1988). Based on the data that could be drawn from available publications, Hansell pointed out the relation of Be to Tai. The patterns of correspondences between Be and Proto-Tai consonants and tones were illustrated extensively in Hansell (1988). He concluded (1988, p. 285), "Be is close to Tai, but not close enough to be a direct descendant of Proto-Tai. The best possible conclusion is that a common ancestor of Be and Tai (\*Be-Tai) is a daughter language of Proto-Kam-Tai."

To test whether Hansell's hypothesis is right or wrong, I searched for cognates in Be and Siamese by using the Be 200-word list that I collected in 1992. To my surprise, I found 109 cognates. This means that the percentage of cognates in Be and Siamese is about 55, which is rather high, in spite of the fact that the Be and the Siamese have lived

separately and in different environments. See list A in Appendix 1. The development of \*Be-Tai tones \*A, \*B, \*C, and \*D in Be and Siamese can be found in Table 1.

Table 1. *\*Be-Tai Tones and Their Development in Be and Siamese*

| *Be-Tai tones |   | Be tones         | Siamese tones |
|---------------|---|------------------|---------------|
| *A            | > | 454/213 (creaky) | 15/33         |
| *B            | > | 33/21            | 21/51         |
| *C            | > | 33/21            | 51/45         |
| *D            | > | 45/22            | 51/21/45      |

I am convinced by my own findings and the result of Hansell’s investigation that Be is more closely related to Tai than the other branches of the Tai-Kadai language family.

LI (HLAI)

Plenty of information on the Li nationality of Hainan province can be found in Chinese, English, French, German, and Thai, e.g., Swinhoe (1871), Parker (1891), Jeremiassen (1892), Savina (1929), Stubel (1937), Wang and Qian (1951), Benedict (1942, 1975, 1989), Shafer (1957), Ouyang and Zheng (1980), Solnit (1982), Ouyang (1983), Gao (1984), Haudricourt (1984), Edmondson (1986), Li (1987), Ramsey (1987), Research Center for Minority Languages (1987), Matisoff (1988), Yin (1989), Chun et al. (1989), Chin (1989), Fu (1983, 1990), Thurgood (1991a, 1991b), Chulalongkorn University (1992), Ostapirat (1993), Wen Mingying (1994, 1997), and Ratanakul andBurusphat (1996). Since a brief introduction to the history, language, and culture of the Li can be found in Ratanakul andBurusphat (1996), to avoid repetition I will just present here my viewpoints and examples drawn only from my own field notes taken during my Hainan field trip in May 1992. Due to the information on the changing features in Jiamao Li caused by language shifts, as pointed out by Thurgood (1991), Jiamao Li will not be included in the analysis.

The Li, with a population of 1,110,900 (61% of the total population of Hainan) are found mainly in two cities, Tongza and Sanya, and in seven counties, Lingshui, Baoting, Ledong, Dongfang, Changjiang, Baisha, and Qiongzong.

On the basis of some features of language and culture, the Li nationality can be divided into five major groups; the ethnonyms and inhabitant centers are as follows:

| Ethnonym              |          | Inhabitant Center |          |
|-----------------------|----------|-------------------|----------|
| Ha (Hoa)              | Ledong   | Sanya             | Lingshui |
| Gei (Qi)              | Baoting  | Qiongzhou         | Tongza   |
| Bendi (Yuan)          | Baisha   |                   |          |
| Jiamao (Hlai, Daitou) | Lingshui | Baoting           |          |
| Moifou                | Dongfang | Changjiang        |          |

About 60% of the Li people are the Ha Li, this group may be sub-divided into ten sub-groups. The names listed below are based on the Ha Li pronunciation:

|  |   |
|--|---|
| Laohuat /law <sup>44</sup> huat <sup>45</sup> /  | Bowju /ɓow <sup>22</sup> zu <sup>51</sup> /     |
| Cuegong /tɕu <sup>22</sup> gɔŋ <sup>51</sup> /   | Bowhian /ɓow <sup>22</sup> hian <sup>51</sup> / |
| Cuekiang /tɕu <sup>22</sup> kian <sup>51</sup> / | Niya /ni <sup>44</sup> ɲja <sup>51</sup> /      |
| Bowvai ʔɓow <sup>22</sup> vaj <sup>44</sup> /    | Habok /ha <sup>22</sup> ɓow <sup>45</sup> /     |
| Bowman /ɓow <sup>22</sup> man <sup>51</sup> /    | Nomlao /nɔm <sup>22</sup> law <sup>45</sup> /   |

Even though the Ha Li call themselves by ten different names, the language and cultural differences among them are said to be minute. Since Ngao Fon and Li (Hlai) are rather closely related in comparison with the other Tai-Kadai languages, the patterns of tone correspondences will be presented in the Ngao Fon (Cun) section. See details in Table 2 and List B in Appendix 1.

### NGAO FON (CUN)

The Ngao Fon or Cun Ren, ‘village people’ in Chinese, belong to the Han nationality. They call themselves /ɲaw<sup>51</sup> fɔn<sup>51</sup>/ ‘village people,’ and speak /tɕhɔn<sup>13</sup> fɔn<sup>51</sup>/ ‘village language.’ The Ngao Fon population is about 60,000; the majority of them live in Dongfang and Changjiang counties, and most of them are labourers. It has been said that about eight or nine generations ago they lived in Futian County, Fujian Province, and migrated to Hainan Island later. Unlike the Li women who still wear woven tube-shaped skirts and turbans with eye-catching motifs, the Ngao Fon women only wear plain traditional Han clothes and pointed woven bamboo hats.

In comparison with the Be and Li, there is much less information on the Ngao Fon, especially the cultural aspects. According to Ouyang Jueya and Fu Zhennan as quoted in Edmondson and Solnit (1988, pp. 12–13), we have learned that “the language of the Ngao Fon differs from Hlai(Li) to a degree that cannot be regarded as just a variety of that language. Close in many ways as it is, the language of the Ngao Fon is probably a sister language to Hlai.” However, when Ostapirat wrote his M.A. thesis under the supervision of J. A. Edmondson, the Cun lexical items were taken as part of the data used for his reconstruction of the Proto-Hlai vowel system (Ostapirat, 1993, p. 920).<sup>1</sup> The Ngao Fon data used by Ostapirat are from Fu’s four-page notes (1983) and Ouyang and Fu’s 160 lexical items (1988). My investigation of the Dongfang Cun speech makes me feel reluctant to accept Ostapirat’s assumption that Ngao Fon is a variety of Hlai. The cognate percentage of Ngao Fon and Hlai is about 59; lexical borrowing from Hlai is also possible since Ngao Fon is spoken within small uneducated communities. Ngao Fon is close to Hlai, but I do not think that it is close enough to be a direct descendant of Proto-Hlai. The development of Proto-Ngao Fon-Hlai tones and Ngao Fon-Hlai cognates is provided in List B, Appendix 1.

The different patterns of tone split and merger and the development of some initials can help prove the view that Ngao Fon is not a direct descendant of Proto-Hlai. Among the Hlai dialects/varieties/vernaculars, Moifou Li seems to be the most conservative, i.e., non-checked syllables have three tones and checked syllables have one tone; the four tones are derived from the Proto-Hlai tones \*A, \*B, \*C, and \*D, respectively. As

<sup>1</sup> Regarding the reconstruction of Proto-Hlai initials and tones, see Matisoff (1988).

shown in Table 2, \*Ngao Fon-Hlai tones \*A and \*D have split into three tones in Ngao Fon, Gei Li, Moifou Li, Ha Li, and Bendi Li.

Table 2. *\*Ngao Fon-Hlai Tones and Their Development*

| *Ngao Fon-Hlai<br>Bendi |   | Ngao Fon                      | Gei      | Moifou |          | Ha       |
|-------------------------|---|-------------------------------|----------|--------|----------|----------|
| *A                      | > | 354 (glottalized)<br>51<br>13 | 44<br>22 | 51     | 51       | 33       |
| *B                      | > | 31                            | 51<br>31 | 44     | 44       | 51       |
| *C                      | > | 31                            | 13       | 13     | 22<br>44 | 44<br>22 |
| *D                      | > | 31<br>21<br>35                | 45<br>21 | 45     | 45<br>21 | 45<br>21 |

Regarding the development of \*Ngao Fon-Hlai initial clusters, such as \*tl-, \*dr-, \*dl-, Ngao Fon has its own history of sound changes which differ from the ones of Hlai, as shown in Table 3.

Table 3. *Development of \*Ngao Fon-Hlai Consonant Clusters*

| * Ngao Fon-Hlai | Ngao Fon           | Gei                | Moifou             | Ha                 | Bendi              | Gloss         |
|-----------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|
| *tl-            | tɔt <sup>35</sup>  | ɬat <sup>45</sup>  | ɬot <sup>45</sup>  | ɬat <sup>45</sup>  | ɬat <sup>21</sup>  | 'blood'       |
|                 | tɔ <sup>51</sup>   | ɬaj <sup>44</sup>  | ɬoj <sup>51</sup>  | ɬoj <sup>51</sup>  | ɬuaj <sup>33</sup> | 'plenty'      |
|                 | tɔw <sup>354</sup> | ɬau <sup>44</sup>  | ɬau <sup>51</sup>  | ɬiw <sup>51</sup>  | ɬu <sup>33</sup>   | 'male-in-law' |
|                 | tin <sup>31</sup>  | ɬian <sup>13</sup> | ɬin <sup>13</sup>  | ɬian <sup>44</sup> | ɬin <sup>22</sup>  | 'tongue'      |
|                 | ta <sup>31</sup>   | ɬaw <sup>13</sup>  | ɬaw <sup>13</sup>  | ɬaw <sup>22</sup>  | ɬow <sup>22</sup>  | 'two'         |
|                 | tem <sup>13</sup>  | ɬaw <sup>13</sup>  | ɬaw <sup>13</sup>  | -                  | ɬaw <sup>44</sup>  | 'heart'       |
| *dl-            | laj <sup>13</sup>  | ɬaj <sup>44</sup>  | dzaj <sup>51</sup> | zaj <sup>51</sup>  | zaj <sup>33</sup>  | 'ear'         |
|                 | lin <sup>13</sup>  | ɬin <sup>22</sup>  | dzen <sup>51</sup> | zin <sup>51</sup>  | zen <sup>33</sup>  | 'water leech' |
|                 | lon <sup>13</sup>  | ɬon <sup>13</sup>  | dzon <sup>13</sup> | -                  | zon <sup>44</sup>  | 'neck'        |
| *dr-            | vaw <sup>51</sup>  | dɔw <sup>44</sup>  | row <sup>51</sup>  | row <sup>51</sup>  | drow <sup>33</sup> | 'knee'        |
|                 | law <sup>13</sup>  | daw <sup>22</sup>  | raw <sup>51</sup>  | raw <sup>51</sup>  | draw <sup>33</sup> | 'star'        |

## CONCLUSION

Based on the word lists of Be, Ngao Fon, Gei Li, Moifou Li, Ha Li, and Bendi Li (Yuan) collected by me in May 1992, there is no doubt that the languages spoken by the Be, Li, and Ngao Fon peoples of Hainan Island belong to the Tai-Kadai language family, as asserted by the other Tai-Kadai specialists. Be is a daughter language of \*Be-Tai, whereas Li and Ngao Fon are the daughter languages of \*Ngao Fon-Hlai. The genetic relationship of the three language groups of Hainan has already been proved by means of the comparative method practised among Tai-Kadai comparativists. See Appendix 2. The next thing that ought to be done is a cultural comparison, the results of which, whether they confirm or reject our linguistic findings, will be valuable and contribute a great deal to Tai studies.

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## APPENDIX 1

### List A: Siamese–Be cognates and \*Be–Tai tones

| *Be–Tai tones | Siamese            | Be                 | Gloss                |
|---------------|--------------------|--------------------|----------------------|
| *A            | hu: <sup>15</sup>  | sa <sup>213</sup>  | ‘eye’                |
|               | naŋ <sup>15</sup>  | naŋ <sup>213</sup> | ‘skin’               |
|               | la:n <sup>15</sup> | lan <sup>213</sup> | ‘grandchild’         |
|               | ma: <sup>15</sup>  | ma <sup>213</sup>  | ‘dog’                |
|               | mu: <sup>15</sup>  | mo <sup>213</sup>  | ‘pig’                |
|               | fon <sup>15</sup>  | ɸun <sup>213</sup> | ‘rain’               |
|               | hon <sup>15</sup>  | sun <sup>213</sup> | ‘path, way’          |
|               | su:ŋ <sup>15</sup> | haŋ <sup>213</sup> | ‘high, tall’         |
|               | hɔ:m <sup>15</sup> | hɔm <sup>213</sup> | ‘to smell; fragrant’ |
|               | sa:m <sup>15</sup> | tam <sup>213</sup> | ‘three’              |
|               | nu: <sup>15</sup>  | nu <sup>213</sup>  | ‘rat, mouse’         |
|               | na: <sup>15</sup>  | na <sup>213</sup>  | ‘thick’              |
|               | khom <sup>15</sup> | kam <sup>454</sup> | ‘bitter’             |
|               | khon <sup>15</sup> | vun <sup>454</sup> | ‘hair, feather, fur’ |
|               | hin <sup>15</sup>  | din <sup>454</sup> | ‘stone, rock’        |
|               | khaw <sup>15</sup> | vaw <sup>454</sup> | ‘horn’               |
|               | huŋ <sup>15</sup>  | huŋ <sup>454</sup> | ‘to cook rice’       |
|               | kha: <sup>15</sup> | va <sup>454</sup>  | ‘leg’                |

|                       |                                      |                  |
|-----------------------|--------------------------------------|------------------|
| fan <sup>15</sup>     | vɔn <sup>454</sup>                   | 'to dream'       |
| phaw <sup>15</sup>    | vɔw <sup>454</sup>                   | 'to burn'        |
| ta: <sup>33</sup>     | ɗa <sup>213</sup>                    | 'eye'            |
| pla: <sup>33</sup>    | ɓa <sup>213</sup>                    | 'fish'           |
| plin <sup>33</sup>    | ɓin <sup>213</sup>                   | 'water leech'    |
| klaj <sup>33</sup>    | lɔj <sup>213</sup>                   | 'far'            |
| ta:j <sup>33</sup>    | ɗaj <sup>213</sup>                   | 'to die, dead'   |
| ?aj <sup>33</sup>     | ?aj <sup>213</sup>                   | 'to cough'       |
| bin <sup>33</sup>     | vin <sup>213</sup>                   | 'to fly'         |
| dam <sup>33</sup>     | lam <sup>213</sup>                   | 'black'          |
| kin <sup>33</sup>     | kɔn <sup>213</sup>                   | 'to eat'         |
| kaw <sup>33</sup>     | ɲiaw <sup>213</sup>                  | 'to scratch'     |
| ja: <sup>33</sup>     | ɗza <sup>213</sup>                   | 'medicine, drug' |
| pi: <sup>33</sup>     | vɣj <sup>454</sup>                   | 'year'           |
| pin <sup>33</sup>     | ɸian <sup>454</sup>                  | 'to climb'       |
| sa'dur: <sup>33</sup> | ɓoɾ <sup>454</sup> ɗɔ <sup>454</sup> | 'navel'          |
| baj <sup>33</sup>     | ɓɔ <sup>454</sup>                    | 'leaf'           |
| ku: <sup>33</sup>     | ku <sup>454</sup>                    | 'I'              |
| man <sup>33</sup>     | man <sup>454</sup>                   | 'fat, oil'       |
| mur: <sup>33</sup>    | mɔ <sup>454</sup>                    | 'hand'           |
| hon <sup>33</sup>     | hun <sup>454</sup>                   | 'person, people' |
| ɲu: <sup>33</sup>     | ɲia <sup>454</sup>                   | 'snake'          |
| mɛ:ɲ <sup>33</sup>    | min <sup>454</sup>                   | 'insect'         |
| faj <sup>33</sup>     | vɣj <sup>454</sup>                   | 'fire'           |
| wan <sup>33</sup>     | vɣn <sup>454</sup>                   | 'day'            |
| ɲɣn <sup>33</sup>     | ɲɔn <sup>454</sup>                   | 'silver'         |
| na: <sup>33</sup>     | nia <sup>454</sup>                   | 'paddy field'    |
| ruan <sup>33</sup>    | lan <sup>454</sup>                   | 'house'          |
| rua <sup>33</sup>     | lwa <sup>454</sup>                   | 'boat'           |
| loɲ <sup>33</sup>     | loɲ <sup>454</sup>                   | 'to descend'     |
| phi: <sup>33</sup>    | ɸuj <sup>454</sup>                   | 'fat'            |
| mon <sup>33</sup>     | vin <sup>454</sup>                   | 'round'          |



\*B

|                    |                   |                   |
|--------------------|-------------------|-------------------|
| khi: <sup>21</sup> | xɣj <sup>33</sup> | 'to ride'         |
| khaw <sup>21</sup> | kaw <sup>33</sup> | 'knee'            |
| thua <sup>21</sup> | hɔw <sup>33</sup> | 'peas, beans'     |
| paw <sup>21</sup>  | vɔw <sup>33</sup> | 'to blow'         |
| si: <sup>21</sup>  | ti <sup>21</sup>  | 'four'            |
| kaw <sup>21</sup>  | kaw <sup>21</sup> | 'old (of things)' |
| ʔun <sup>21</sup>  | lun <sup>21</sup> | 'warm'            |
| du:m <sup>21</sup> | lum <sup>33</sup> | 'to drink'        |
| ŋa:m <sup>51</sup> | kam <sup>33</sup> | 'fork, branch'    |
| num <sup>51</sup>  | num <sup>33</sup> | 'soft'            |

\*C

|                     |                   |                   |
|---------------------|-------------------|-------------------|
| ji: <sup>51</sup>   | ŋi <sup>21</sup>  | 'two'             |
| na: <sup>51</sup>   | ŋa <sup>33</sup>  | 'face'            |
| sa:j <sup>51</sup>  | tse <sup>33</sup> | 'intestines'      |
| fa: <sup>51</sup>   | ɬa <sup>33</sup>  | 'cloud, cloudy'   |
| khi: <sup>51</sup>  | kaj <sup>33</sup> | 'excrement, dung' |
| kha:w <sup>51</sup> | ŋaw <sup>33</sup> | 'rice'            |
| thaw <sup>51</sup>  | ɬaw <sup>33</sup> | 'ashes'           |
| ham <sup>51</sup>   | ɬam <sup>33</sup> | 'to cut'          |
| haj <sup>51</sup>   | ŋaj <sup>21</sup> | 'to cry'          |
| phuwŋ <sup>51</sup> | saŋ <sup>21</sup> | 'bee'             |
| khun <sup>51</sup>  | kun <sup>21</sup> | 'to ascend'       |
| kha: <sup>51</sup>  | ka <sup>21</sup>  | 'to kill'         |
| ha: <sup>51</sup>   | ŋa <sup>21</sup>  | 'five'            |
| ka:w <sup>51</sup>  | ku <sup>21</sup>  | 'nine'            |
| klaj <sup>51</sup>  | lo <sup>21</sup>  | 'near'            |
| fa: <sup>45</sup>   | ɸu <sup>21</sup>  | 'sky'             |
| na:m <sup>45</sup>  | nam <sup>33</sup> | 'water'           |
| ru: <sup>45</sup>   | hu <sup>33</sup>  | 'to know'         |
| lin <sup>45</sup>   | lin <sup>33</sup> | 'tongue'          |

## \*D

|                      |                    |                     |
|----------------------|--------------------|---------------------|
| sip <sup>21</sup>    | tɔp <sup>45</sup>  | ‘ten’               |
| hok <sup>21</sup>    | sok <sup>22</sup>  | ‘six’               |
| lap <sup>21</sup>    | lap <sup>22</sup>  | ‘asleep’            |
| kop <sup>21</sup>    | ʔop <sup>45</sup>  | ‘frog’              |
| kat <sup>21</sup>    | kap <sup>45</sup>  | ‘to bite’           |
| tap <sup>21</sup>    | tap <sup>22</sup>  | ‘liver’             |
| tok <sup>21</sup>    | ɗok <sup>22</sup>  | ‘to fall’           |
| pet <sup>21</sup>    | bit <sup>22</sup>  | ‘duck’              |
| ʔok <sup>21</sup>    | ʔok <sup>22</sup>  | ‘chest’             |
| dap <sup>21</sup>    | jɔp <sup>22</sup>  | ‘to extinguish’     |
| nok <sup>45</sup>    | nok <sup>45</sup>  | ‘bird’              |
| lep <sup>45</sup>    | lip <sup>45</sup>  | ‘finger nail’       |
| mot <sup>45</sup>    | muʔ <sup>45</sup>  | ‘ant’               |
| khrok <sup>45</sup>  | hok <sup>45</sup>  | ‘mortar’            |
| lak <sup>45</sup>    | lɔk <sup>45</sup>  | ‘to steal’          |
| sak <sup>45</sup>    | ɗak <sup>45</sup>  | ‘to wash (clothes)’ |
| jep <sup>45</sup>    | ɲop <sup>45</sup>  | ‘to sew’            |
| tɕhet <sup>45</sup>  | sit <sup>45</sup>  | ‘to wipe’           |
| ma:k <sup>21</sup>   | mak <sup>45</sup>  | ‘fruit’             |
| pi:k <sup>21</sup>   | bik <sup>45</sup>  | ‘wing’              |
| khut <sup>21</sup>   | ket <sup>22</sup>  | ‘to scrape’         |
| pa:k <sup>21</sup>   | ɓak <sup>22</sup>  | ‘mouth’             |
| pe:t <sup>21</sup>   | ɓet <sup>22</sup>  | ‘eight’             |
| ʔɔ:k <sup>21</sup>   | ʔuk <sup>22</sup>  | ‘to go out’         |
| thak <sup>51</sup>   | ɗak <sup>22</sup>  | ‘land leech’        |
| mu:k <sup>51</sup>   | muk <sup>45</sup>  | ‘mucus’             |
| ra:k <sup>51</sup>   | ɗuak <sup>45</sup> | ‘to vomit’          |
| lu:k <sup>51</sup>   | lu:k <sup>45</sup> | ‘offspring’         |
| na:k <sup>51</sup>   | nak <sup>45</sup>  | ‘otter’             |
| khar:t <sup>51</sup> | kat <sup>45</sup>  | ‘to tie around’     |

**List B: Ngao Fon - Hlai cognates and \*Ngao Fon-Hlai tones**

\*NGF-L = Proto-Ngao Fon-Hlai; GL = Gei Li; MFL = Moifou Li; NGF = Ngao Fon; HL = Ha Li; BL = Bendi Li (Yuan).

| *NGF-L tones | NGF                  | GL                   | MFL                  | HL                 | BL                  | Gloss         |
|--------------|----------------------|----------------------|----------------------|--------------------|---------------------|---------------|
| *A           | haw <sup>354</sup>   | haw <sup>44</sup>    | haw <sup>51</sup>    | haw <sup>51</sup>  | how <sup>33</sup>   | 'horn'        |
|              | tow <sup>354</sup>   | tau <sup>44</sup>    | tau <sup>51</sup>    | tiw <sup>51</sup>  | tu <sup>33</sup>    | 'male-in-law' |
|              | mɔj <sup>354</sup>   | muj <sup>44</sup>    | muj <sup>51</sup>    | muj <sup>51</sup>  | moj <sup>33</sup>   | 'bear (n.)'   |
|              | fɔn <sup>354</sup>   | fun <sup>44</sup>    | fon <sup>51</sup>    | fun <sup>51</sup>  | fon <sup>33</sup>   | 'rain'        |
|              | ham <sup>354</sup>   | hɔm <sup>44</sup>    | hom <sup>51</sup>    | hɔm <sup>51</sup>  | huam <sup>33</sup>  | 'bitter'      |
|              | laj <sup>354</sup>   | laj <sup>44</sup>    | laj <sup>51</sup>    | laj <sup>51</sup>  | la <sup>33</sup>    | 'far'         |
|              | ɔw <sup>354</sup>    | ɔau <sup>44</sup>    | ɔau <sup>51</sup>    | ɔau <sup>51</sup>  | ɔau <sup>33</sup>   | 'leaf'        |
|              | kxhaj <sup>354</sup> | khaj <sup>44</sup>   | khaj <sup>51</sup>   | khaj <sup>51</sup> | khaj <sup>33</sup>  | 'chicken'     |
|              | jɔ <sup>354</sup>    | dza <sup>22</sup>    | dza <sup>51</sup>    | za <sup>51</sup>   | za <sup>33</sup>    | 'drug'        |
|              | mɔw <sup>354</sup>   | mau <sup>44</sup>    | mau <sup>51</sup>    | -                  | mau <sup>33</sup>   | 'hand'        |
|              | sin <sup>354</sup>   | fan <sup>44</sup>    | sen <sup>51</sup>    | fan <sup>51</sup>  | fan <sup>33</sup>   | 'tooth'       |
|              | ɣuan <sup>354</sup>  | hun <sup>44</sup>    | ɣon <sup>51</sup>    | huɔn <sup>51</sup> | ɣuan <sup>33</sup>  | 'smoke'       |
|              | kxhom <sup>354</sup> | khom <sup>44</sup>   | khɔm <sup>51</sup>   | khɔm <sup>51</sup> | kxhom <sup>33</sup> | 'itchy'       |
|              | tɕham <sup>354</sup> | sɔm <sup>44</sup>    | tshuam <sup>51</sup> | sɔm <sup>51</sup>  | tɕam <sup>33</sup>  | 'sharp'       |
|              | mɔw <sup>354</sup>   | vau <sup>44</sup>    | ɣau <sup>51</sup>    | gwau <sup>51</sup> | pau <sup>33</sup>   | 'to know'     |
|              | fɔj <sup>354</sup>   | fuj <sup>44</sup>    | vu <sup>51</sup>     | -                  | foj <sup>33</sup>   | 'cooked'      |
|              | fɔn <sup>51</sup>    | fan <sup>44</sup>    | ɣan <sup>51</sup>    | -                  | fan <sup>33</sup>   | 'village'     |
|              | naɲ <sup>51</sup>    | noɲ <sup>44</sup>    | noɲ <sup>51</sup>    | noɲ <sup>51</sup>  | nuan <sup>33</sup>  | 'skin'        |
|              | vaw <sup>51</sup>    | dow <sup>44</sup>    | row <sup>51</sup>    | row <sup>51</sup>  | drow <sup>33</sup>  | 'knee'        |
|              | few <sup>51</sup>    | sow <sup>44</sup>    | fow <sup>51</sup>    | fow <sup>51</sup>  | fow <sup>33</sup>   | 'head louse'  |
|              | mɔ <sup>51</sup>     | mau <sup>44</sup>    | mau <sup>51</sup>    | mau <sup>51</sup>  | mu <sup>33</sup>    | 'you'         |
|              | tɕhin <sup>51</sup>  | tɕhian <sup>44</sup> | tshin <sup>51</sup>  | sian <sup>51</sup> | tɕhin <sup>51</sup> | 'stone, rock' |
|              | phen <sup>51</sup>   | phen <sup>44</sup>   | phen <sup>51</sup>   | phen <sup>51</sup> | phian <sup>33</sup> | 'to buy'      |
|              | fon <sup>51</sup>    | fan <sup>44</sup>    | fan <sup>51</sup>    | fan <sup>51</sup>  | fan <sup>33</sup>   | 'to dream'    |
|              | von <sup>51</sup>    | ɣuan <sup>44</sup>   | ɣan <sup>51</sup>    | -                  | van <sup>44</sup>   | 'sweat'       |
|              | kxhaw <sup>51</sup>  | thaw <sup>44</sup>   | khaw <sup>51</sup>   | khaw <sup>51</sup> | kxhaw <sup>33</sup> | 'white'       |
|              | khej <sup>51</sup>   | tɕau <sup>44</sup>   | tsau <sup>51</sup>   | tɕau <sup>51</sup> | khej <sup>51</sup>  | 'breath'      |
|              | nɔ <sup>51</sup>     | na <sup>44</sup>     | na <sup>51</sup>     | na <sup>51</sup>   | na <sup>33</sup>    | 'thick'       |
|              | hɔ <sup>51</sup>     | sa <sup>44</sup>     | tsha <sup>51</sup>   | sa <sup>51</sup>   | sa <sup>33</sup>    | 'eye'         |
|              | ben <sup>51</sup>    | ben <sup>44</sup>    | ben <sup>51</sup>    | ben <sup>51</sup>  | ben <sup>33</sup>   | 'to fly'      |

|                    |                    |                    |                    |                     |                  |
|--------------------|--------------------|--------------------|--------------------|---------------------|------------------|
| ɲaw <sup>15</sup>  | ʔaw <sup>44</sup>  | ʔaw <sup>51</sup>  | ʔaw <sup>51</sup>  | ɲaw <sup>51</sup>   | ‘person, people’ |
| fo <sup>51</sup>   | fej <sup>4</sup>   | fej <sup>51</sup>  | fej <sup>51</sup>  | fej <sup>33</sup>   | ‘fire’           |
| ɲon <sup>51</sup>  | ɲan <sup>44</sup>  | ɲan <sup>51</sup>  | ɲan <sup>51</sup>  | ɲan <sup>33</sup>   | ‘liver’          |
| khon <sup>51</sup> | khun <sup>44</sup> | khɲɲ <sup>51</sup> | khun <sup>51</sup> | kxhɲɲ <sup>33</sup> | ‘heavy’          |
| tɕeɲ <sup>51</sup> | dɕeɲ <sup>44</sup> | dian <sup>51</sup> | dɕeɲ <sup>51</sup> | dian <sup>33</sup>  | ‘sweet’          |
| jɔ <sup>51</sup>   | dza <sup>22</sup>  | dza <sup>51</sup>  | za <sup>51</sup>   | za <sup>33</sup>    | ‘old age’        |
| tɔ <sup>51</sup>   | ɬaj <sup>44</sup>  | ɬoj <sup>51</sup>  | ɬoj <sup>51</sup>  | ɬuaj <sup>33</sup>  | ‘plenty’         |
| khon <sup>51</sup> | khan <sup>44</sup> | khan <sup>51</sup> | khan <sup>51</sup> | khan <sup>33</sup>  | ‘to ascend’      |
| ɓɔ <sup>13</sup>   | pa <sup>22</sup>   | pa <sup>51</sup>   | pa <sup>51</sup>   | pa <sup>33</sup>    | ‘five’           |
| ɲɲn <sup>13</sup>  | hun <sup>44</sup>  | ɲow <sup>51</sup>  | hun <sup>51</sup>  | ɲon <sup>33</sup>   | ‘hair, fur’      |
| vɔw <sup>13</sup>  | fau <sup>44</sup>  | ɣau <sup>51</sup>  | -                  | fui <sup>33</sup>   | ‘navel’          |
| laj <sup>13</sup>  | ɬaj <sup>44</sup>  | dzaj <sup>51</sup> | zaj <sup>51</sup>  | zaj <sup>33</sup>   | ‘ear’            |
| vɔj <sup>13</sup>  | pow <sup>44</sup>  | paw <sup>51</sup>  | paw <sup>51</sup>  | pow <sup>33</sup>   | ‘pig’            |
| tɕɔj <sup>13</sup> | tiw <sup>22</sup>  | tiw <sup>51</sup>  | tiw <sup>51</sup>  | tiaw <sup>33</sup>  | ‘rat, mouse’     |
| lin <sup>13</sup>  | ɬin <sup>22</sup>  | dzen <sup>51</sup> | zin <sup>51</sup>  | zen <sup>33</sup>   | ‘water leech’    |
| tɕem <sup>13</sup> | tom <sup>22</sup>  | tom <sup>51</sup>  | tom <sup>51</sup>  | tom <sup>33</sup>   | ‘six’            |
| law <sup>13</sup>  | ɔɖaw <sup>22</sup> | raw <sup>51</sup>  | raw <sup>51</sup>  | draw <sup>33</sup>  | ‘star’           |
| vɔ <sup>13</sup>   | fa <sup>22</sup>   | ɣa <sup>51</sup>   | va <sup>51</sup>   | -                   | ‘boat’           |
| hun <sup>13</sup>  | van <sup>44</sup>  | van <sup>51</sup>  | van <sup>51</sup>  | van <sup>33</sup>   | ‘day’            |
| jaw <sup>13</sup>  | taw <sup>22</sup>  | taw <sup>51</sup>  | raw <sup>51</sup>  | tɕaw <sup>33</sup>  | ‘to laugh’       |
| hia <sup>13</sup>  | ɣia <sup>44</sup>  | xi <sup>51</sup>   | ɣia <sup>51</sup>  | kxhi <sup>33</sup>  | ‘to cough’       |

## \*B

|                     |                    |                    |                    |                   |            |
|---------------------|--------------------|--------------------|--------------------|-------------------|------------|
| vaw <sup>31</sup>   | ɣow <sup>51</sup>  | ɣow <sup>44</sup>  | ɣow <sup>44</sup>  | vow <sup>51</sup> | ‘to run’   |
| ɓa <sup>31</sup>    | pɔ <sup>31</sup>   | paw <sup>44</sup>  | paw <sup>44</sup>  | pow <sup>51</sup> | ‘year’     |
| tɕi <sup>31</sup>   | tɕu <sup>31</sup>  | tshe <sup>44</sup> | tɕau <sup>44</sup> | tɕu <sup>51</sup> | ‘one’      |
| ka <sup>31</sup>    | kɔ <sup>31</sup>   | kaw <sup>44</sup>  | kaw <sup>44</sup>  | kow <sup>51</sup> | ‘to sleep’ |
| maj <sup>31</sup>   | thaj <sup>51</sup> | thaj <sup>44</sup> | thaj <sup>44</sup> | -                 | ‘to shoot’ |
| tɕho <sup>31</sup>  | tha <sup>51</sup>  | tha <sup>44</sup>  | tha <sup>44</sup>  | tha <sup>51</sup> | ‘rice’     |
| ɲian <sup>31</sup>  | ɲian <sup>51</sup> | ɲan <sup>44</sup>  | hian <sup>44</sup> | ɲan <sup>51</sup> | ‘insect’   |
| la <sup>31</sup>    | law <sup>51</sup>  | law <sup>44</sup>  | la <sup>44</sup>   | lɔ <sup>22</sup>  | ‘to eat’   |
| ʔow <sup>31</sup>   | ʔow <sup>51</sup>  | ʔow <sup>44</sup>  | ʔow <sup>44</sup>  | ʔow <sup>51</sup> | ‘to blow’  |
| tɕian <sup>31</sup> | -                  | tuɲ <sup>44</sup>  | tuɲ <sup>44</sup>  | -                 | ‘to give’  |
| naj <sup>31</sup>   | ɬa <sup>31</sup>   | dza <sup>44</sup>  | za <sup>44</sup>   | za <sup>44</sup>  | ‘snake’    |

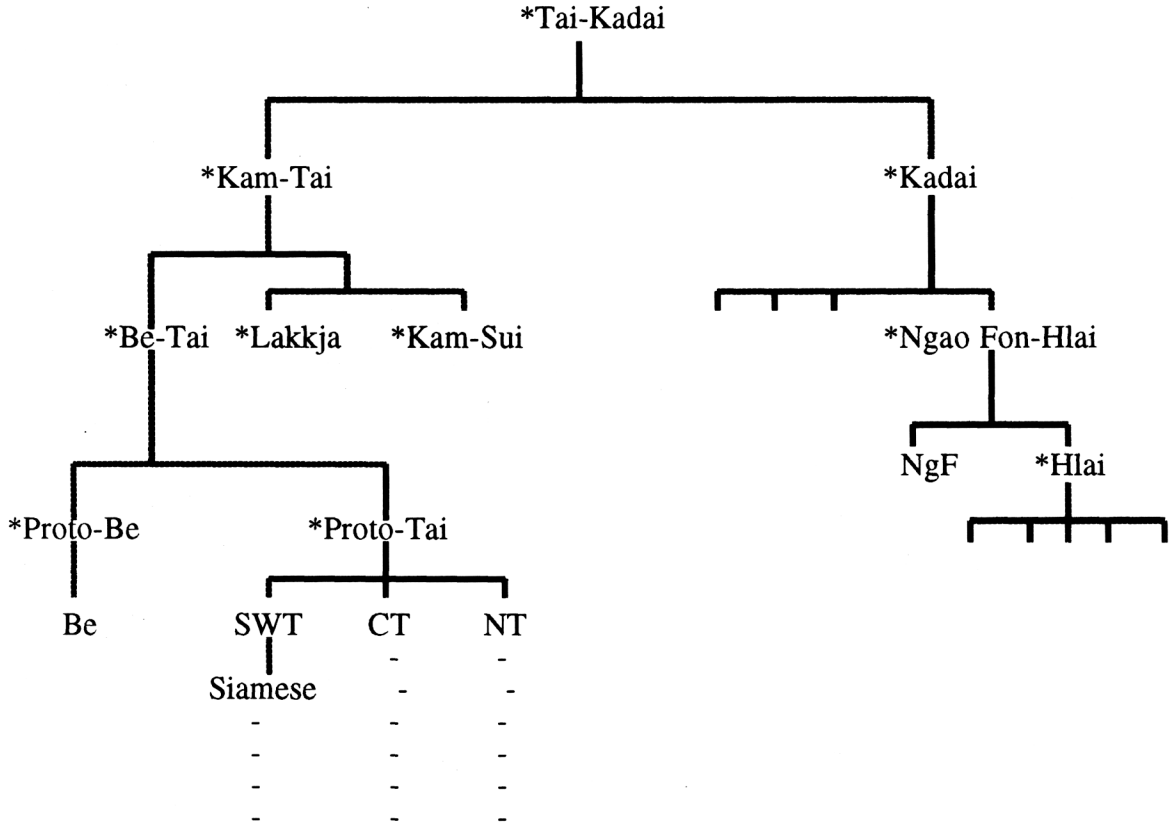
\*C

|                     |                     |                     |                     |                     |                     |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| vaw <sup>31</sup>   | yo <sup>13</sup>    | ywo <sup>13</sup>   | vaw <sup>44</sup>   | vow <sup>44</sup>   | 'hair'              |
| tin <sup>31</sup>   | ɬian <sup>13</sup>  | ɬin <sup>13</sup>   | ɬian <sup>44</sup>  | ɬin <sup>22</sup>   | 'tongue'            |
| ha <sup>31</sup>    | haj <sup>13</sup>   | haj <sup>13</sup>   | haj <sup>44</sup>   | haj <sup>22</sup>   | 'excrement'         |
| tem <sup>31</sup>   | ɬaw <sup>13</sup>   | ɬaw <sup>13</sup>   | -                   | ɬaw <sup>44</sup>   | 'heart'             |
| tɕhen <sup>31</sup> | saŋ <sup>13</sup>   | tshen <sup>13</sup> | zaw <sup>44</sup>   | tɕoŋ <sup>44</sup>  | 'mushroom'          |
| taj <sup>31</sup>   | taw <sup>13</sup>   | saw <sup>13</sup>   | hwoj <sup>22</sup>  | sow <sup>44</sup>   | 'ashes'             |
| ŋaw <sup>31</sup>   | ŋua <sup>13</sup>   | ŋo <sup>13</sup>    | hwaw <sup>22</sup>  | ŋo <sup>44</sup>    | 'mountain'          |
| niaw <sup>31</sup>  | ɲaw <sup>13</sup>   | ɲaw <sup>13</sup>   | ɲaw <sup>44</sup>   | ɲaw <sup>44</sup>   | 'salt'              |
| fɔ <sup>31</sup>    | fa <sup>13</sup>    | fa <sup>13</sup>    | fa <sup>22</sup>    | fa <sup>44</sup>    | 'sky'               |
| nam <sup>31</sup>   | nam <sup>13</sup>   | nam <sup>13</sup>   | nɔm <sup>22</sup>   | nam <sup>44</sup>   | 'water'             |
| ŋwɔn <sup>31</sup>  | huɔn <sup>13</sup>  | ŋɔŋ <sup>13</sup>   | hun <sup>22</sup>   | ŋɔŋ <sup>44</sup>   | 'thorn'             |
| phaj <sup>31</sup>  | phow <sup>13</sup>  | phaw <sup>13</sup>  | phaw <sup>22</sup>  | -                   | 'to prick'          |
| ta <sup>31</sup>    | ɬaw <sup>13</sup>   | ɬaw <sup>13</sup>   | ɬaw <sup>22</sup>   | ɬow <sup>22</sup>   | 'two'               |
| fu <sup>31</sup>    | su <sup>13</sup>    | fu <sup>13</sup>    | fu <sup>22</sup>    | fow <sup>22</sup>   | 'three'             |
| koj <sup>31</sup>   | fau <sup>13</sup>   | yɯ <sup>13</sup>    | fau <sup>22</sup>   | fau <sup>44</sup>   | 'nine'              |
| ŋaj <sup>31</sup>   | ŋaj <sup>13</sup>   | ŋaj <sup>13</sup>   | ŋaj <sup>22</sup>   | ŋaj <sup>44</sup>   | 'to cry'            |
| tɕum <sup>31</sup>  | tɕuŋ <sup>13</sup>  | tsɔŋ <sup>13</sup>  | tɕoŋ <sup>22</sup>  | tɕoŋ <sup>44</sup>  | 'to sit'            |
| la <sup>31</sup>    | laɲ <sup>13</sup>   | laɲ <sup>13</sup>   | laɲ <sup>22</sup>   | laɲ <sup>44</sup>   | 'to see'            |
| lej <sup>31</sup>   | lej <sup>13</sup>   | lej <sup>13</sup>   | lej <sup>22</sup>   | lej <sup>44</sup>   | 'skinny'            |
| kxho <sup>31</sup>  | khaw <sup>13</sup>  | khaw <sup>13</sup>  | khaw <sup>44</sup>  | kxhaw <sup>44</sup> | 'light (of weight)' |
| phuaŋ <sup>31</sup> | phuaŋ <sup>13</sup> | phuŋ <sup>13</sup>  | phuaŋ <sup>22</sup> | phuŋ <sup>44</sup>  | 'to let go'         |
| haj <sup>31</sup>   | haw <sup>13</sup>   | haw <sup>13</sup>   | haw <sup>22</sup>   | how <sup>44</sup>   | 'to kill'           |
| tɕhoj <sup>31</sup> | suj <sup>13</sup>   | tshuj <sup>13</sup> | suj <sup>22</sup>   | soj <sup>44</sup>   | 'to burn'           |
| la <sup>13</sup>    | laɲ <sup>13</sup>   | raɲ <sup>13</sup>   | zaj <sup>22</sup>   | draj <sup>44</sup>  | 'intestines'        |
| ɔoŋ <sup>13</sup>   | pam <sup>13</sup>   | pom <sup>13</sup>   | pom <sup>44</sup>   | pom <sup>44</sup>   | 'mouth'             |
| loŋ <sup>13</sup>   | ɬoŋ <sup>13</sup>   | dzɔŋ <sup>13</sup>  | -                   | zɔŋ <sup>44</sup>   | 'neck'              |
| ko <sup>13</sup>    | ka <sup>13</sup>    | ka <sup>13</sup>    | ka <sup>22</sup>    | ka <sup>44</sup>    | 'horse'             |
| kan <sup>13</sup>   | kan <sup>13</sup>   | kaŋ <sup>13</sup>   | kan <sup>44</sup>   | kaŋ <sup>44</sup>   | 'grass'             |
| kaw <sup>13</sup>   | ɲjo <sup>13</sup>   | niaw <sup>13</sup>  | hiaw <sup>44</sup>  | ɲow <sup>44</sup>   | 'shadow'            |
| huj <sup>13</sup>   | ywoj <sup>13</sup>  | xuj <sup>13</sup>   | yɔj <sup>22</sup>   | kxhuɲ <sup>44</sup> | 'fat'               |
| tɕaw <sup>13</sup>  | taw <sup>13</sup>   | taw <sup>13</sup>   | taw <sup>22</sup>   | taw <sup>44</sup>   | 'long (of space)'   |
| hiw <sup>13</sup>   | yɲaw <sup>13</sup>  | xiw <sup>13</sup>   | zuɲ <sup>22</sup>   | kxhiw <sup>44</sup> | 'to sell'           |

|    |                      |                     |                     |                     |                    |                        |
|----|----------------------|---------------------|---------------------|---------------------|--------------------|------------------------|
| *D | jek <sup>21</sup>    | veŋ <sup>45</sup>   | vur <sup>45</sup>   | ʔwek <sup>45</sup>  | veŋ <sup>2</sup>   | ‘banana’               |
|    | khok <sup>21</sup>   | khok <sup>45</sup>  | khok <sup>45</sup>  | -                   | khok <sup>21</sup> | ‘foot’                 |
|    | khat <sup>21</sup>   | khat <sup>21</sup>  | khak <sup>45</sup>  | khat <sup>45</sup>  | khat <sup>45</sup> | ‘nose’                 |
|    | fek <sup>21</sup>    | fɛŋ <sup>45</sup>   | -                   | fek <sup>45</sup>   | fɛŋ <sup>21</sup>  | ‘bark, skin’           |
|    | tɕhɔt <sup>21</sup>  | tɕhut <sup>45</sup> | tshɔt <sup>45</sup> | sut <sup>45</sup>   | sut <sup>21</sup>  | ‘tail’                 |
|    | phiak <sup>21</sup>  | phiak <sup>45</sup> | phik <sup>45</sup>  | phiak <sup>45</sup> | phit <sup>45</sup> | ‘wing’                 |
|    | lip <sup>21</sup>    | liap <sup>45</sup>  | lip <sup>45</sup>   | liap <sup>45</sup>  | lip <sup>21</sup>  | ‘finger’               |
|    | fɛk <sup>21</sup>    | fɛŋ <sup>45</sup>   | -                   | fek <sup>45</sup>   | fɛŋ <sup>21</sup>  | ‘root’                 |
|    | tiak <sup>21</sup>   | ʔak <sup>45</sup>   | ʔuk <sup>45</sup>   | ʔuk <sup>45</sup>   | ʔuk <sup>21</sup>  | ‘offspring’            |
|    | tɕhiat <sup>21</sup> | tat <sup>45</sup>   | sat <sup>45</sup>   | tat <sup>45</sup>   | sat <sup>21</sup>  | ‘bird’                 |
|    | thok <sup>21</sup>   | thok <sup>45</sup>  | thok <sup>45</sup>  | thok <sup>45</sup>  | thok <sup>21</sup> | ‘to fall’              |
|    | sok <sup>21</sup>    | suk <sup>45</sup>   | tshok <sup>45</sup> | sok <sup>45</sup>   | sok <sup>21</sup>  | ‘painful’              |
|    | thiak <sup>21</sup>  | thiaŋ <sup>45</sup> | thik <sup>45</sup>  | thiak <sup>45</sup> | hit <sup>21</sup>  | ‘full’                 |
|    | phek <sup>21</sup>   | pheŋ <sup>45</sup>  | phur <sup>45</sup>  | phek <sup>21</sup>  | pheŋ <sup>21</sup> | ‘high, tall’           |
|    | hiat <sup>21</sup>   | sat <sup>45</sup>   | tshat <sup>45</sup> | sat <sup>45</sup>   | sat <sup>21</sup>  | ‘to buy’               |
|    | niap <sup>21</sup>   | niap <sup>45</sup>  | -                   | noŋ <sup>45</sup>   | nap <sup>21</sup>  | ‘to sew’               |
|    | fiak <sup>21</sup>   | suŋ <sup>45</sup>   | fuuk                | fuak <sup>45</sup>  | fuuk <sup>21</sup> | ‘to weave’             |
|    | nok <sup>31</sup>    | nuk <sup>45</sup>   | nok <sup>45</sup>   | nok <sup>45</sup>   | nok <sup>21</sup>  | ‘monkey’               |
|    | kuat <sup>31</sup>   | huat <sup>45</sup>  | khut <sup>45</sup>  | huat <sup>21</sup>  | huuk <sup>21</sup> | ‘to scratch’           |
|    | thek <sup>31</sup>   | theŋ <sup>45</sup>  | -                   | thak <sup>45</sup>  | thet <sup>45</sup> | ‘to kick’              |
|    | ɔk <sup>35</sup>     | -                   | pok <sup>45</sup>   | poŋ <sup>45</sup>   | pok <sup>45</sup>  | ‘belly’                |
|    | tɔt <sup>35</sup>    | ʔat <sup>45</sup>   | ʔot <sup>45</sup>   | ʔat <sup>45</sup>   | ʔat <sup>21</sup>  | ‘blood’                |
|    | viak <sup>35</sup>   | fuŋ <sup>45</sup>   | ɣuk <sup>45</sup>   | vɤk <sup>45</sup>   | fuuk <sup>21</sup> | ‘bone’                 |
|    | ɔɣt <sup>35</sup>    | put <sup>21</sup>   | pɣt <sup>45</sup>   | put <sup>45</sup>   | put <sup>21</sup>  | ‘needle’               |
|    | tak <sup>35</sup>    | tok <sup>21</sup>   | sok <sup>45</sup>   | sat <sup>45</sup>   | soŋ <sup>21</sup>  | ‘to wash<br>(clothes)’ |

## APPENDIX 2

### Genetic Affiliation of Tai-Kadai



APPENDIX 3

