A sketch of Buyuan Jino tones and their development

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<tr>
<th>著者</th>
<th>林 範彦</th>
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A Sketch of Buyuan Jino Tones 
and Their Development*

Norihiko HAYASHI

Keywords: Jino (Jinuo), Buyuan Jino, Youle Jino, Xishuangbanna (Sipsongpanna), China, Lolo-Burmese, Tibeto-Burman, Tonal development, Word tonalization

1 Introduction: The Buyuan dialect of Jino and the goal of this paper

The Buyuan dialect of the Jino language (henceforth “Buyuan Jino”) is a Lolo-Burmese (henceforth “LB”) language of the Tibeto-Burman linguistic family spoken in the northeastern part of Xishuangbanna (Sipsongpanna) autonomous state in Yunnan province, China (See Figure 1).

Figure 1: The Jino villages, Yunnan

* An earlier version of this paper was presented at the 18th meeting of the Linguistic Circle for the Study of Eastern Eurasian Languages, held at Aoyama Gakuin University (Tokyo, Japan) on February 20, 2011. I thank Prof. Mitsuaki Endo and the participants for their insightful comments. All errors and misunderstandings are, of course, of my own.

1 This map is cited from Kato (2000) and revised by the present author. The shaded portion is Xishuangbanna (Sipsongpanna) autonomous state in Yunnan province, China.
The total Jino population in China amounts to 20,899 (2000 census), but the present author estimates that only 70 to 80 percent are fluent speakers of the Jino language. Ten percent of these speakers can be considered to speak Buyuan Jino, and the remainder Youle Jino (As for the genetic affiliation, see Figure 2).

Buyuan Jino has two main subdialects, namely Bagang-Banan and Kelian; these are mutually intelligible, though many differences can be found even in basic lexicons. In this paper, Bagang-Banan data drawn from my field research in 2004–2011 will be employed.²

![Figure 2: The genetic affiliation of Buyuan Jino (a simplified model of Matisoff [2003])](image)

This paper aims to describe the tonemes and tonal patterns (or tonal alternation) of Buyuan Jino, and attempts to undertake a tentative analysis of their historical development through comparison between Buyuan Jino and neighboring LB languages.

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² The present study has been supported by several Grants-in-Aid for Scientific Research from the Japan Society for the Promotion of Science (Nos. 05J10264, 20720111, 22320079, and 23720209). The present author expresses gratitude for this financial support. This paper is based mainly on data collected by the author (2004–2011).
2 Previous Work: Gai (1986)

Gai (1986) is the only previous published work on Buyuan Jino, and states that there are eight tonemes in the language (See Table 1). Some tonemes have the function of distinguishing lexical meanings, and others, grammatical meanings.

Table 1: Gai’s (1986: 125–126) tonemes and examples

<table>
<thead>
<tr>
<th>Tone value</th>
<th>Example</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>[1] 55; high level</td>
<td>vu55tsɔ35vu55nɔ44</td>
<td>‘diarrhea’</td>
</tr>
<tr>
<td>[2] 44; second high level</td>
<td>vu44</td>
<td>‘hatch’</td>
</tr>
<tr>
<td>[3] 33; mid level</td>
<td>vu33</td>
<td>‘sell’</td>
</tr>
<tr>
<td>[4] 42; mid falling</td>
<td>vu42mɔ44</td>
<td>‘belly’</td>
</tr>
<tr>
<td>[5] 31; low falling</td>
<td>vu31</td>
<td>‘buy’</td>
</tr>
<tr>
<td>[6] 13; low rising</td>
<td>vu13</td>
<td>‘cap (v.)’</td>
</tr>
<tr>
<td>[7] 11; low level</td>
<td>a31vu11</td>
<td>‘startle’</td>
</tr>
<tr>
<td>[8] 53; high falling</td>
<td>vu53</td>
<td>‘(the sound of a horn)’</td>
</tr>
</tbody>
</table>

Gai also describes the tonal correspondences between Youle Jino and Buyuan Jino, and remarks that the tones (and even the tone values) of these two dialects basically correspond. He gives two corresponding sets, as seen below (Gai 1986: 130–131).

1. a. Mid falling tone 42 in Youle corresponds to high level tone 55 in Buyuan.
   Youle Jino ə44cɛ42; Buyuan Jino α31cɛ:55 ‘near’
   Youle Jino tʃo31jɑ42; Buyuan Jino tɔɔ31jɑ55 ‘sparrow’

b. Mid level tone 33 in Youle corresponds to low falling tone 31 in Buyuan.
   Youle Jino ma33tʃhə33; Buyuan Jino ma33tʃhɤ31 ‘friend’
   Youle Jino kʰɛ33khɔ33; Buyuan Jino tʃe31khu31 ‘garden’
Gai’s (1986) phonological analysis and my own\(^3\) are totally different; therefore, the data presented by Gai is irrelevant to the discussion in the present paper; and in addition, Gai does not discuss tonal development from Proto-Lolo-Burmese to Buyuan Jino. These are the main differences between Gai (1986) and the current paper.

3 Synchrony of Buyuan Jino tones

Based on my field data, I argue that there are at present five tones in Buyuan Jino, which can be exemplified as follows (Hayashi forthcoming).

(2) a. 55 (High level tone): high and level. It tends to exhibit vowels that are phonetically shortened.

/ŋ55tv31/ ‘fish’

b. 44 (Mid level tone): lower than 55, though still high.

/ja44/ ‘sweep’, /fu44/ ‘roll/ maggot’, /ŋə44/ ‘five’

c. 31 (Low falling tone): low.


d. 35 (Rising tone): rising. Found in relatively few words.

/a31fu31fu35/ ‘very hot’, /ŋə35/ ‘cry’, /ŋə35/ ‘genuine, true’

e. 53 (High falling tone): falling from the top level.

/ʦɔ53/ [ʦɔ53] ‘(perfect marker)’, /mi31cao53/ [mi31ɕɔɔ53] ‘beautiful’,
/xɔ55tɔ44mje53/ [xɔ55tɔ44mje53] ‘how’

---

\(^3\) Phonological Inventory of Buyuan Jino (Except Tonemes) by the present author (Hayashi forthcoming):

Consonants: /p, ph, t, th, k, kh; ts, tsh, tɕ, tɕh; m, n, n, ŋ; l; f, s, ɕ, ʃ; w, j/

Vowels: /i, e, ɛ, a, ɑ, ɔ, x, o, u/

Syllable Structure: (C1)(C2)V1(V2)(V3)(C3)/T <C2: -j-, C3: -n or -N>
[53] is a tone value which should be considered to place at the special position; in fact, it is difficult to tell whether this is a distinctive toneme or not. Following are some examples of the [53] tone. Note that the examples in (3) are illustrated on the phonetic level.

(3) a. [tɔ53] ‘(perfect)’, [kɔ31tɔ53] ‘(have) arrived’, [mɔ55kɔ55tɔ53] ‘(I am) defeated’, etc.

As demonstrated in (3), the tone value [53] occurs at the end of a ‘morphological word’. It seems to be found in grammatical morphemes (tsɔ53 functions as an aspectual marker, ɔao53 as an ending for stative verbs, etc.). In addition, the tonal patterns of disyllabic words reveal that there have not yet been found words beginning with [53], as seen in Table 2.

<table>
<thead>
<tr>
<th>First Syllable (S1)</th>
<th>Second Syllable (S2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>55</td>
<td>○ ○ ○ △ △</td>
</tr>
<tr>
<td>44</td>
<td>△ ○ × × ×</td>
</tr>
<tr>
<td>31</td>
<td>○ ○ △ △ △</td>
</tr>
<tr>
<td>35</td>
<td>△ △ △ △ △</td>
</tr>
<tr>
<td>53</td>
<td>× × × × ×</td>
</tr>
</tbody>
</table>

(○: frequently found, △: seldom found, ×: not found so far)

The tonal patterns of disyllabic words are limited, probably because the morphophonology of this language has also been affected by disyllabization and word tonalization. Hence, it seems that the 53 tone can be better analyzed as being
influenced by positional constraints, with a relatively low functional load in the phonology of Buyuan Jino, though at present it should still be marked (/53/), because it cannot be analyzed as an allotone of any other toneme.

4 Development of Buyuan Jino tones

In historical LB linguistics, the tonal correspondences with Written Burmese (henceforth “WB”) forms can be considered most useful to the scholar. The proto-tones of Proto-Lolo-Burmese (henceforth “PLB”) established by Bradley (1979) and Matisoff (2003) basically correspond to Written Burmese tones.4 Proto-Tone 1 of PLB corresponds to WB tone 1 (corresponding to the level tone5 in Colloquial Burmese), Proto-Tone 2 of PLB to WB tone 2 (corresponding to the heavy tone in Colloquial Burmese), and Proto-Tone 3 of PLB to WB tone 3 (corresponding to the creaky tone in Colloquial Burmese).

Hereafter, we will demonstrate the tonal correspondence between LB languages and WB and discuss the development of Buyuan Jino tones. Tonal sets corresponding to the unchecked WB syllables will be examined in 4.1 and to the checked syllables in 4.2.

4.1 Sets corresponding to unchecked WB syllables

First, we will investigate the tonal correspondence of Buyuan Jino and LB languages to unchecked WB syllables. The following tables (Tables 3 to 5) show tonal sets corresponding to WB tones 1, 2 and 3.

4 It would be useful to utilize the Old Burmese (OB) forms for comparison of Lolo-Burmese tones if this were possible, but as we lack tonal information for this language, we employ WB forms in place of OB ones.

5 The terminology for colloquial Burmese tones is adopted from Okell (1969).
### 4.1.1 Tonal sets corresponding to WB tone 1

Table 3 illustrates the tonal correspondence between Buyuan Jino (hereafter “BJ”) tones and those in other LB languages.

#### Table 3: Tonal sets corresponding to WB tone 1

<table>
<thead>
<tr>
<th>Gloss</th>
<th>BJ</th>
<th>YJ</th>
<th>H</th>
<th>ACH</th>
<th>ZW</th>
<th>WB</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘die’</td>
<td>a5si31</td>
<td>ji42</td>
<td>si55</td>
<td>şi55</td>
<td>ji51</td>
<td>sei-</td>
</tr>
<tr>
<td>‘enter’</td>
<td>u31</td>
<td>o42</td>
<td>(thø33)</td>
<td>øñ55</td>
<td>van51</td>
<td>wang-</td>
</tr>
<tr>
<td>‘come’</td>
<td>lə31</td>
<td>lə42</td>
<td>la55</td>
<td>(zş35)</td>
<td>le55</td>
<td>laa-</td>
</tr>
<tr>
<td>‘look for’</td>
<td>xə31li55</td>
<td>şo42</td>
<td>(tño33mo55)</td>
<td>tuai55xo31-</td>
<td>mjan51xo31</td>
<td>hra-</td>
</tr>
<tr>
<td>‘rain (v.)’</td>
<td>fu31</td>
<td>xo42</td>
<td>ş31ze55-</td>
<td>zş55</td>
<td>vo51</td>
<td>ywaa-</td>
</tr>
<tr>
<td>‘iron’</td>
<td>ce31xə55</td>
<td>şe42</td>
<td>sə55</td>
<td>šam55</td>
<td>jam51tə55</td>
<td>sanə</td>
</tr>
<tr>
<td>‘1SG NOM’</td>
<td>nə31</td>
<td>nə42</td>
<td>nə55</td>
<td>nə55</td>
<td>nọ51</td>
<td>ngaa</td>
</tr>
<tr>
<td>‘ten’</td>
<td>tshy31</td>
<td>tshv42</td>
<td>tshe55</td>
<td>tshe55</td>
<td>tshe51</td>
<td>chay</td>
</tr>
<tr>
<td>‘thick’</td>
<td>a55tha31-lə31</td>
<td>a33thu55</td>
<td>thu55</td>
<td>(kan31)</td>
<td>thu51</td>
<td>thu-u-</td>
</tr>
<tr>
<td>‘name’</td>
<td>a55mi31</td>
<td>a33nə55</td>
<td>tsho55mo55</td>
<td>a31niə55</td>
<td>mjiə51</td>
<td>maň</td>
</tr>
<tr>
<td>‘guts’</td>
<td>a55vu31</td>
<td>a33vu55</td>
<td>u55</td>
<td>a31u55</td>
<td>u51</td>
<td>uu</td>
</tr>
<tr>
<td>‘bear’</td>
<td>a55jə31</td>
<td>a33ə55</td>
<td>xo31ə55</td>
<td>əm55</td>
<td>vam51</td>
<td>waň</td>
</tr>
<tr>
<td>(animal)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘water’</td>
<td>i31tshu55</td>
<td>jı33ftʃo55</td>
<td>u55tʃu31</td>
<td>(ti55)</td>
<td>vui51</td>
<td>rei</td>
</tr>
<tr>
<td>‘nose’</td>
<td>nɔ31pje31</td>
<td>nɔə33to55</td>
<td>na55me55</td>
<td>nəə55</td>
<td>no51</td>
<td>hnaa-khɔŋ:</td>
</tr>
<tr>
<td>‘mosquito’</td>
<td>–sı31tɛɾ31</td>
<td>çə33kʃə55</td>
<td>ja55go31</td>
<td>(pʰəp55)</td>
<td>(kjaŋ51)</td>
<td>ɣanɡ</td>
</tr>
<tr>
<td>‘long’</td>
<td>cu44mjʊ31</td>
<td>jə55ʃu55</td>
<td>(mo55)</td>
<td>səŋ55</td>
<td>xıŋ51</td>
<td>hraŋ-</td>
</tr>
<tr>
<td>‘sweet’</td>
<td>a55tʃi31</td>
<td>a33ʃi55</td>
<td>tʃu55</td>
<td>(uai31)</td>
<td>tʃhui31</td>
<td>khɔŋ-</td>
</tr>
</tbody>
</table>
The first section of this table (from ‘die’ to ‘ten’) show that Buyuan Jino 31 tone corresponds to Youle Jino (YJ) tone 42, Hani (H [Loloish: spoken in China, Myanmar, Laos, Thailand, and Vietnam]) 55, Achang (ACH [Burmish: China, Myanmar]) 55, Zaiwa (ZW [Burmish: China, Myanmar]) 51 or 55, and WB tone 1. 

The second section (from ‘thick’ to ‘foot’) shows essentially the same correspondences as the first section, though YJ in the second section has a 55 tone, likely caused by (morphological) disyllabization.6 

However, as can also be seen in Table 3, there are some irregularities in tonal correspondences. In the words for ‘fly’ and ‘painful’, BJ has a 35 tone, not 31. Further, the last two columns show two BJ tones (namely, 55 and 44) corresponding to WB tone 1. These cases demand further analysis.

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6 For a more detailed discussion of the influence of disyllabization on tonal alternation in YJ, see Hayashi (2009b).
4.1.2 Tonal sets corresponding to WB tone 2

Table 4 illustrates the tonal correspondences between LB languages and WB tone 2.

<table>
<thead>
<tr>
<th>Gloss</th>
<th>BJ</th>
<th>YJ</th>
<th>H</th>
<th>ACH</th>
<th>ZW</th>
<th>WB</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘walk’</td>
<td>ju55</td>
<td>zo55</td>
<td>zu31</td>
<td>so31</td>
<td>so21</td>
<td>swaa:-</td>
</tr>
<tr>
<td>‘eat’</td>
<td>tsø55</td>
<td>tsø55</td>
<td>dza31</td>
<td>tœ31</td>
<td>tso21</td>
<td>caa:-</td>
</tr>
<tr>
<td>‘steal’</td>
<td>tøha55ja31</td>
<td>khju55</td>
<td>xo31</td>
<td>xau31</td>
<td>khau21</td>
<td>kho:-</td>
</tr>
<tr>
<td>‘hear’</td>
<td>tø55</td>
<td>kjø55</td>
<td>ga31</td>
<td>kʒua31</td>
<td>vo55kjo21</td>
<td>krah:-</td>
</tr>
<tr>
<td>‘give’</td>
<td>pi55</td>
<td>pi55</td>
<td>bi31</td>
<td>tsi31</td>
<td>pji21</td>
<td>pei:-</td>
</tr>
<tr>
<td>‘expensive’</td>
<td>phja55</td>
<td>phu55</td>
<td>phø31</td>
<td>(kø55)</td>
<td>phau21</td>
<td>a-pho:</td>
</tr>
<tr>
<td>‘horse’</td>
<td>mju55</td>
<td>mjo55</td>
<td>mo31</td>
<td>mʒan31</td>
<td>mjaŋ21</td>
<td>mran:</td>
</tr>
<tr>
<td>‘fire’</td>
<td>mi55</td>
<td>mi55</td>
<td>mi31</td>
<td>dza31</td>
<td>(poi31)</td>
<td>mji21</td>
</tr>
<tr>
<td>‘bitter’</td>
<td>a55kha55</td>
<td>a55kha55</td>
<td>xa31</td>
<td>xo31</td>
<td>kho21</td>
<td>khaa:-</td>
</tr>
<tr>
<td>‘feces’</td>
<td>a55tchi55</td>
<td>a55khi55</td>
<td>ci31</td>
<td>tchi31</td>
<td>khji21</td>
<td>khyei:</td>
</tr>
<tr>
<td>‘salt’</td>
<td>tshø55ly44</td>
<td>tsha55kho42</td>
<td>tsha31</td>
<td>dʒ31</td>
<td>tcho31</td>
<td>tsho55</td>
</tr>
<tr>
<td>‘bee’</td>
<td>pji55ji55</td>
<td>pja55ja55</td>
<td>bja31si55</td>
<td>tʃua31caŋ31</td>
<td>pjö21jan21</td>
<td>pyaa:</td>
</tr>
<tr>
<td>‘fruit’</td>
<td>a55si55</td>
<td>a55su55</td>
<td>a55si31</td>
<td>şo31</td>
<td>ji21</td>
<td>a-sii:</td>
</tr>
<tr>
<td>‘liver’</td>
<td>a55tshi55</td>
<td>a33tshu55</td>
<td>tʃhø31</td>
<td>a31ʃøŋ31</td>
<td>sin21</td>
<td>a-sañ:</td>
</tr>
<tr>
<td>‘dog’</td>
<td>khr55no55</td>
<td>khr55ni55</td>
<td>a31khu31</td>
<td>xui31</td>
<td>khui21</td>
<td>khwe:i</td>
</tr>
<tr>
<td>‘slippery’</td>
<td>a31ka55la55</td>
<td>a33kro55</td>
<td>dʒu55lu55ne33</td>
<td>ne35</td>
<td>tʃu55</td>
<td>khy:-</td>
</tr>
<tr>
<td>‘five’</td>
<td>ŋ44</td>
<td>ŋo55</td>
<td>ŋa31</td>
<td>ŋo31</td>
<td>ŋo21</td>
<td>ngaa:</td>
</tr>
<tr>
<td>‘nine’</td>
<td>tɕa44</td>
<td>kju55</td>
<td>yo31</td>
<td>kau31</td>
<td>kau21</td>
<td>ko:</td>
</tr>
<tr>
<td>‘wash’</td>
<td>ja55tshi44</td>
<td>tshi55</td>
<td>tshi31</td>
<td>(phøp55)</td>
<td>chi21</td>
<td>chei:-</td>
</tr>
</tbody>
</table>

The examples in the first section of Table 4 (from ‘walk’ to ‘slippery’) show that Buyuan Jino 55 tone corresponds to YJ 55, H 31, ACH 31, ZW 21/55 and WB tone 2, a corresponding set that should be the most stable in this paper. The ones in the
second section (‘five’ and ‘nine’) seem to have a different correspondence from those in the first section, which might relate to the fact that these two words are numerals. The word for ‘wash’ also has a 44 tone, like the words in the second column. This could be as a result of the influence of word tonalization or tone sandhi, though this is an issue that still needs further analysis.

4.1.3 Tonal sets corresponding to WB tone 3

Table 5 illustrates the tonal correspondences between LB languages and WB tone 3.

<table>
<thead>
<tr>
<th>Gloss</th>
<th>BJ</th>
<th>YJ</th>
<th>H</th>
<th>ACH</th>
<th>ZW</th>
<th>WB</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘ripe’</td>
<td>mju44</td>
<td>mjx44</td>
<td>mjx33</td>
<td>ṭeŋ35</td>
<td>mjiŋ55-</td>
<td>hmaŋ-</td>
</tr>
<tr>
<td>‘full’</td>
<td>pju44</td>
<td>a55pru44</td>
<td>bjɔ33</td>
<td>pɔŋ35</td>
<td>pjiŋ55</td>
<td>praŋ-</td>
</tr>
<tr>
<td>‘moon’</td>
<td>pja55x344</td>
<td>pu55jɔ44</td>
<td>la33si31</td>
<td>pau51jɔ35</td>
<td>lɔ55мо55</td>
<td>la.</td>
</tr>
<tr>
<td>‘day’</td>
<td>a31nji44</td>
<td>ŋ55</td>
<td>nɔ33</td>
<td>nɛn31</td>
<td>ŋji55</td>
<td>nei.</td>
</tr>
<tr>
<td>‘seed’</td>
<td>a31tsi44</td>
<td>a33tsu55</td>
<td>a55zɔ31</td>
<td>(a31nau31)</td>
<td>(a21mji21)</td>
<td>a-cei.</td>
</tr>
<tr>
<td>‘open’</td>
<td>phu55tsi55</td>
<td>phɔ55</td>
<td>phɔ33</td>
<td>phɔŋ35</td>
<td>phɔŋ55</td>
<td>phwang-</td>
</tr>
<tr>
<td>‘know’</td>
<td>si55tcha53</td>
<td>su55</td>
<td>xɔ33</td>
<td>sa35</td>
<td>se55</td>
<td>si.-</td>
</tr>
<tr>
<td>‘fall (v.)’</td>
<td>kɔ31</td>
<td>kɾɔ44</td>
<td>ja33</td>
<td>kzua35</td>
<td>kjo55</td>
<td>kya.-</td>
</tr>
</tbody>
</table>

There are considerably fewer examples of sets corresponding to WB tone 3 than of those to tones 1 and 2. The examples in the first column of Table 5 (from ‘ripe’ to ‘seed’) show that the 44 tone in Buyuan Jino basically corresponds to YJ 44, H 33, ACH 35/31, ZW 55, and WB tone 3, which constitutes a regular correspondence with the exception of the word for ‘seed’.

There are, of course, different set of tonal correspondences from the one shown in

7 The cardinal numbers in Youle Jino (especially from one to nine) also have irregular correspondences with PLB, in the sense that one would expect their tones to have been leveled to 55.
the first column. As for the words for ‘open’ and ‘know’, BJ 55 corresponds to YJ 55, H 33, ACH 35, ZW 55, and WB tone 3, and in ‘fall’, BJ 31 corresponds to YJ 44, H 33, ACH 35, ZW 55, and WB tone 3. Considering the stability of tonal correspondences among H, ACH, and ZW, it is clear that the tones of these three examples from BJ developed independently after divergence from YJ.

4.2 Sets corresponding to Written Burmese checked syllables

Secondly, we will investigate the tonal correspondence of Buyuan Jino and LB languages to WB checked syllables. Table 6 shows tonal sets corresponding to WB checked syllables.

Matisoff (1972) divided the tonal sets of checked syllables in LB into two types—a HIGH group and a LOW group—which Bradley (1979) utilized for the reconstruction of PLB. The former group has higher tone values than the latter in most modern LB languages, though in some languages there can be found tonal flips. According to the reconstruction performed by Matisoff (1972) and Bradley (1979), Group A in Table 6 exemplifies the tonal sets corresponding to the LOW group (PLB *L) and Group B to the HIGH group (PLB *H).\(^8\)

In Group A, BJ 55 corresponds to YJ 55, H 31, ACH 55, and ZW 21 or 55, whereas in Group B, BJ 55 or 44 or 31 corresponds to YJ 42 (or 33), H 33, ACH 55, and ZW 21 or 55, which might lead us to conclude that Group A has much more stable correspondences than Group B.

At this moment, it is not possible to state with a large degree of confidence which BJ tone in Group B participates in regular correspondence, but it is arguable that the BJ tonal sets in Group B are in the process of merging into tone 55, though of course it should be noted that the words for ‘ascend’, ‘bird’, and ‘eye’ are disyllabic words

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\(^8\) As can be seen in Table 6, Zaiwa tones do not correspond straightforwardly to PLB checked syllables. Nishi (1999) puts the tonal correspondences of Burmish checked syllables in order, based on tone values of the Maruic languages.
and may not be affected by this process.

Table 6: Tonal sets corresponding to Written Burmese checked syllables

<table>
<thead>
<tr>
<th>Group</th>
<th>Gloss</th>
<th>BJ</th>
<th>YJ</th>
<th>H</th>
<th>ACH</th>
<th>ZW</th>
<th>WB</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>‘kill’</td>
<td>ce55</td>
<td>se55</td>
<td>sg31</td>
<td>sat55</td>
<td>sat21</td>
<td>sat-</td>
</tr>
<tr>
<td></td>
<td>‘pig’</td>
<td>wa55</td>
<td>va55</td>
<td>a31ya31</td>
<td>o^55</td>
<td>va^21</td>
<td>wak</td>
</tr>
<tr>
<td></td>
<td>‘sew’</td>
<td>tea55</td>
<td>kju55</td>
<td>gu31</td>
<td>xzop55</td>
<td>khjup55</td>
<td>khyup-</td>
</tr>
<tr>
<td></td>
<td>‘lick’</td>
<td>mje55</td>
<td>mra55</td>
<td>mje31</td>
<td>lia55</td>
<td>jo^21</td>
<td>lyak-</td>
</tr>
<tr>
<td></td>
<td>‘sleep’</td>
<td>i55thi55</td>
<td>ji55</td>
<td>ju31</td>
<td>e31</td>
<td>jup55</td>
<td>ip-</td>
</tr>
<tr>
<td></td>
<td>‘two’</td>
<td>ni55</td>
<td>n^55</td>
<td>ni31</td>
<td>(sok55)</td>
<td>i55</td>
<td>hnam</td>
</tr>
<tr>
<td></td>
<td>‘six’</td>
<td>t^chu55</td>
<td>khjo55</td>
<td>ku31</td>
<td>xzop^55</td>
<td>khjup^55</td>
<td>khr^k</td>
</tr>
<tr>
<td></td>
<td>‘deep’</td>
<td>a31na55la55</td>
<td>a33na55</td>
<td>na31</td>
<td>(lak55)</td>
<td>nik21</td>
<td>nak-</td>
</tr>
<tr>
<td></td>
<td>‘new’</td>
<td>a31si55</td>
<td>a33ji55</td>
<td>s^31</td>
<td>sok55</td>
<td>a21sik55</td>
<td>sac-</td>
</tr>
<tr>
<td></td>
<td>‘hand’</td>
<td>la55pu44</td>
<td>la55pu44</td>
<td>a31la31</td>
<td>l^55</td>
<td>lo^21</td>
<td>lak</td>
</tr>
<tr>
<td></td>
<td>‘be bent’</td>
<td>ta31khu55</td>
<td>a55kho44</td>
<td>yu31</td>
<td>kok55</td>
<td>koi55</td>
<td>kok-</td>
</tr>
<tr>
<td></td>
<td>‘eight’</td>
<td>ci44</td>
<td>xe55</td>
<td>ce31</td>
<td>c^e55</td>
<td>f^it55</td>
<td>hraj</td>
</tr>
<tr>
<td>B</td>
<td>‘chicken’</td>
<td>ja55</td>
<td>ja42</td>
<td>a31xa33</td>
<td>kzu^a^55</td>
<td>vo^21</td>
<td>krak</td>
</tr>
<tr>
<td></td>
<td>‘sharp’</td>
<td>tha55</td>
<td>tha42</td>
<td>ta33</td>
<td>th^35</td>
<td>tho^21</td>
<td>thak-</td>
</tr>
<tr>
<td></td>
<td>‘black’</td>
<td>a55na55</td>
<td>a55na42</td>
<td>na33</td>
<td>(lak55)</td>
<td>no^21</td>
<td>nak-</td>
</tr>
<tr>
<td></td>
<td>‘fear’</td>
<td>tchi55lb55</td>
<td>kho44</td>
<td>gu33</td>
<td>zo^55</td>
<td>kju^21</td>
<td>kro^k</td>
</tr>
<tr>
<td></td>
<td>‘pick up’</td>
<td>ku44</td>
<td>ko42</td>
<td>(u31)</td>
<td>k^55</td>
<td>kui51</td>
<td>kok-</td>
</tr>
<tr>
<td></td>
<td>‘wrap’</td>
<td>the44</td>
<td>tho42</td>
<td>to33</td>
<td>tshet55</td>
<td>(kje^21)</td>
<td>thup-</td>
</tr>
<tr>
<td></td>
<td>‘ascend’</td>
<td>ta31ji31</td>
<td>ta42</td>
<td>da33</td>
<td>t^o^55</td>
<td>to^21</td>
<td>tak-</td>
</tr>
<tr>
<td></td>
<td>‘bird’</td>
<td>n^a31jo55</td>
<td>n^a33zo55</td>
<td>(a55dzi55)</td>
<td>m^55</td>
<td>n^o^25</td>
<td>hngak</td>
</tr>
<tr>
<td></td>
<td>‘eye’</td>
<td>mja31tsi44</td>
<td>mja33tsi55</td>
<td>mja33</td>
<td>n^o^25tsi^255</td>
<td>mjo^21tj^55</td>
<td>myak-cei</td>
</tr>
</tbody>
</table>
5 Concluding Remarks

As shown in the discussion above, BJ has four distinctive tonemes and one positional tone (/53/); the tonal correspondences between BJ and LB languages can be summarized as in Table 7.9

Table 7: Summary of tonal correspondences between BJ and LB languages

<table>
<thead>
<tr>
<th>PLB</th>
<th>BJ</th>
<th>YJ</th>
<th>H</th>
<th>ACH</th>
<th>ZW</th>
</tr>
</thead>
<tbody>
<tr>
<td>*1</td>
<td>31/35/55/44</td>
<td>42/33/55</td>
<td>55</td>
<td>55</td>
<td>51/21</td>
</tr>
<tr>
<td>*2</td>
<td>55/44</td>
<td>55/33</td>
<td>31</td>
<td>31</td>
<td>21/55</td>
</tr>
<tr>
<td>*3</td>
<td>44/55/31</td>
<td>44/55/42</td>
<td>33</td>
<td>35/31</td>
<td>55</td>
</tr>
</tbody>
</table>

The toneme written in boldface in each column should be understood to indicate the regular correspondence in the relevant language. The tones 31 and 44 in BJ may be derived from PLB tones *1 and *3 respectively, while 55 in BJ may be traceable to PLB tones *2, *L, and *H. Tone 35 in BJ may be traceable back to PLB tone *1, which would indicate that PLB tone *1 had split up into 31 and 35 in BJ after the divergence from YJ.

From the viewpoint of tone values, BJ seems to be very similar to YJ in unchecked syllables but not in checked syllables. This may imply that the tones in the unchecked syllables of BJ and YJ developed in the same way, whereas those in checked syllables developed independently after the split into two dialects.

As is widely attested in many Asian languages of several language families, the historical development of tones may relate to onset and/or rhyme groups. However, the tonal development of BJ apparently has nothing to do with those groups at the PLB stage, where the proto-tone system is inherently assigned. There is a relatively

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9 WB tones were replaced with PLB tones in Table 7.
clear correspondence between BJ tones and PLB tones. The irregularities in the corresponding rules may thus be affiliated with morphophonological layers than with phonological ones in narrow sense, a possibility that demands further analysis.

Data Resources

Abbreviation
“*” marks a proto-form. Parenthesized forms in the tables cannot be considered to be cognate.

Bibliography


Matisoff, James A. (1972)  *The Loloish Tonal Split Revisited*. (Research Monograph No. 7.) Berkeley: Center for South and Southeast Asia Studies, University of California.


**Acknowledgements**/鸣谢

The author expresses his deepest gratitude to the Buyuan Jino people (勐旺乡基诺族), the Jinghong municipal government (景洪市勐旺乡人民政府), Yunnan Nationalities Museum (云南民族博物馆), the Xishuangbanna Bureau of Nationalities (西双版纳傣族自治州民族宗教局), and the Yunnan Nationalities Committee (云南省民族事务委员会).