

## **Stem Alternations in Puxi Verb Inflection: Toward Validating the rGyalrongic Subgroup in Qiangic\***

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The paper examines four areas of marked inflectional morphology (affinity between the past and the progressive, aspiration inversion, tonal inversion, ablaut) in the formation of verb stems in the Puxi dialect of Shangzhai, an underexplored Tibeto-Burman language of northwestern Sichuan. Partial parallels in other languages of the rGyalrong Tibetans suggest retention of relic alternation patterns confined to these particular Tibeto-Burman languages. The morphological archaisms uncovered in this study not only vindicate the intimate ties between Horpa and Shangzhai noted earlier by this author (J. T.-S. Sun 2000), but constitute crucial individual-identifying evidence pointing to a unique low-level parent language PROTO-RGYALRONGIC shared by rGyalrong proper, Lavrung, and Horpa-Shangzhai, paving the way for rigorous comparative rGyalrongic linguistics.

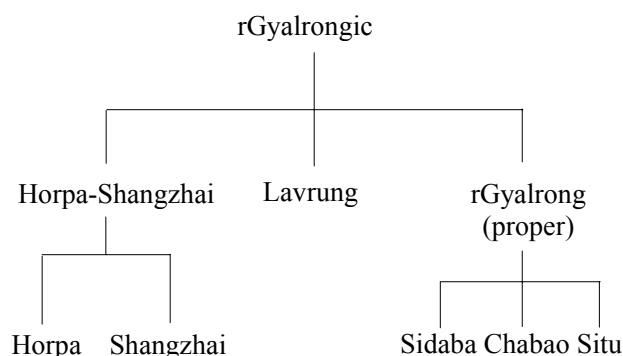
Key words: Puxi, rGyalrongic, Tibeto-Burman, Qiangic, verbal inflection

### **1. Introduction**

In an earlier study, I submitted as a working hypothesis that rGyalrong (proper), Lavrung, and Horpa-Shangzhai form a RGYALRONGIC subgroup under the Qiangic branch in Tibeto-Burman with a tripartite internal structure depicted in this tentative family tree (J. T.-S. Sun 2000):

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**Diagram I: Proposed rGyalrongic Stammbaum**

Implicit in the proposal is the claim that the three lower-level subgroups possess a special relationship not shared with any other external Tibeto-Burman language and yet, contra Qu 1990, are just too divergent to be regarded as mere dialects of a single language. In order to demonstrate the special affinities among rGyalrongic, I discussed in that paper three unusual processes of verbal morphology shared among dialects of rGyalrong and Lavrung with the conclusion that they are not produced by chance, borrowing, or convergence, but must rather be either archaisms inherited directly from Proto-rGyalrongic, or common innovations created by some of its descendants at a later date.

The present study ventures further afield on the intriguing subject of rGyalrongic verbal morphology, with the focus shifted to the third and more controversial rGyalrongic language, Horpa-Shangzhai. I have these objectives in mind: (1) to analyze primary data on certain uncommon alternations in the formation of basic verbs stems in the Puxi variety of Shangzhai (henceforth Puxi);<sup>1</sup> (2) to present Horpa parallels to the Puxi alternations in additional support to the proposed Horpa-Shangzhai unity, (3) to justify the linguistic position of Horpa-Shangzhai as a rGyalrongic language by examining intra-rGyalrongic parallels to the Puxi morphological operations which in most cases appear to continue archaic patterns of Proto-rGyalrongic.

In the remainder of the introductory section, brief background information is offered in section 1.1 on the Shangzhai-Horpa language; this is followed by outlines of Puxi phonology (section 1.2) and morphological structure of the Puxi verb (section 1.3). In the main body of the presentation, section 2 gives a preliminary analysis of the complicated segmental and suprasegmental alternations in the formation of the past and the progressive stems in Puxi. The next section, drawing on comparative data from

<sup>1</sup> For a more detailed survey, the reader is referred to J. T.-S. Sun 2000:165-166.

Horpa and other rGyalrongic dialects, probes external parallels to the peculiar alternations types observed in Puxi, including aspiration inversion, tonal inversion, and ablaut. Discussions on the methodological implications of this study on rGyalrongic linguistics conclude the paper.

### 1.1 The target language

The Horpa-Shangzhai affinities are not recognized in the existing classifications from China,<sup>2</sup> but Shangzhai and Horpa are in fact so closely related in vocabulary (for a sample comparison, see J. T.-S. Sun 2000:footnote 10) and in grammar (as I hope to demonstrate in this study), they are to be regarded as dialects of a single language on the scale of rGyalrongic internal diversification. The dialectal ramification of this language is not yet known; judging by all the available data, however, the main dividing line ought to be between Horpa and Shangzhai. Horpa shows a wider geographical dispersion, spoken in pockets in central and eastern Daofu County, central and northwestern Danba County, and parts of Luhuo and Xinlong Counties (Huang 1991b:210). As one of the ‘Xifan’ languages of the Sino-Tibetan borderland, Horpa also received scholarly attention from early on; our knowledge about its structure has considerably improved thanks to recent descriptive endeavors, especially Huang 1991a and Duo’erji 1998. In contrast, Shangzhai is confined to the southern corner of Rangtang County and remains poorly known to this day. A thorough documentation of Shangzhai is bound to be rewarding, for Shangzhai seems to preserve certain archaic features missing in Horpa and thus may provide an important key to unraveling the linguistic history of this rGyalrongic subgroup, as this paper sets out to demonstrate from the angle of inflectional morphology.<sup>3</sup>

<sup>2</sup> Qu Aitang (1990:2), for instance, considers Shangzhai, Zhongzhai (=Lavrung in our terminology), and Danba (= Horpa in our terminology) as three independent subdialects of the ‘western dialect’ of rGyalrong (in the extended sense).

<sup>3</sup> As a phonological example of old distinctions surviving in Shangzhai but not in Horpa, consider the sets below where Puxi preserves consonant codas no longer seen in their Horpa cognates:

| Puxi Shangzhai | Geshizha Horpa | Daofu Horpa | Gloss               |
|----------------|----------------|-------------|---------------------|
| ydʒ u r        | wdzo           | ydzu        | ‘to grind; to mill’ |
| zpe y          | sne            | sne         | ‘seven’             |
| stɬχ           | stɔ            | sta         | ‘tiger’             |

Incidentally, the coda *y-* in Puxi word for ‘seven’ reflects Proto-rGyalrongic *\*-s*, cf. Caodeng rGyalrong *kɕ-fnes*. Other examples are: Puxi *bo y*, Caodeng *tɕ<sup>h</sup>bos* ‘mudflow’; Puxi *fɪfəy*, Caodeng *fɪfəs?* ‘to castrate’.

Puxi is one of the three townships in southern Rangtang County in which Shangzhai speakers dwell, the other two being Shili and Zongke. Of the five villages within Puxi Township, Shangzhai is used in Dayili Village and those hamlets of Puxi and Xiaoyili Villages north of the Rangtang River, abutting Lavrung-speaking hamlets across the river in the same villages. The latter language is distributed in Siyaowu Village also, while the inhabitants of Youri Village speak Amdo-Tibetan, the dominant language of the county. The Puxi data reported in this paper, representing the speech of *tʃʁgə* Hamlet of Puxi (*p<sup>h</sup>osi*) Village in Puxi Township, were collected during field work conducted in the summers of 1995, 1998, and 1999.

## 1.2 Puxi phonology: an outline

### 1.2.1 Consonants and vowels

As in the other rGyalrongic languages, Puxi boasts a huge consonantal inventory with forty-eight phonemes, shown in the chart below:<sup>4</sup>

|     |                      |                       |                       |                       |                      |                      |          |
|-----|----------------------|-----------------------|-----------------------|-----------------------|----------------------|----------------------|----------|
| (1) | <i>p</i>             | <i>t</i>              |                       | <i>c</i>              | <i>k</i>             | <i>q</i>             |          |
|     | <i>p<sup>h</sup></i> | <i>t<sup>h</sup></i>  |                       | <i>c<sup>h</sup></i>  | <i>k<sup>h</sup></i> | <i>q<sup>h</sup></i> |          |
|     | <i>b</i>             | <i>d</i>              |                       | <i>ʃ</i>              | <i>g</i>             |                      |          |
|     |                      | <i>ts</i>             | <i>tʂ</i>             | <i>tʃ</i>             |                      |                      |          |
|     |                      | <i>ts<sup>h</sup></i> | <i>tʂ<sup>h</sup></i> | <i>tʃ<sup>h</sup></i> |                      |                      |          |
|     |                      | <i>dz</i>             | <i>dʒ</i>             | <i>dʒ</i>             |                      |                      |          |
|     | <i>m</i>             | <i>n</i>              |                       | <i>ɲ</i>              |                      |                      |          |
|     | <i>(f)</i>           | <i>s</i>              |                       | <i>ʃ</i>              | <i>x</i>             | <i>χ</i>             |          |
|     |                      | <i>s<sup>h</sup></i>  |                       | <i>ʃ<sup>h</sup></i>  | <i>ʃ<sup>h</sup></i> |                      |          |
|     | <i>v</i>             | <i>z</i>              |                       | <i>ʒ</i>              | <i>ʝ</i>             | <i>ʝ</i>             | <i>ɦ</i> |
|     |                      | <i>ʈ</i>              |                       |                       |                      |                      |          |
|     |                      | <i>ʈ</i>              |                       |                       |                      |                      |          |
|     |                      | <i>r</i>              |                       |                       |                      |                      |          |
|     |                      | <i>l</i>              |                       |                       |                      |                      |          |
|     | <i>w</i>             |                       |                       |                       |                      |                      |          |

The exceptional abundance of complex initials permitted in Puxi, including many four-member consonant clusters such as in (2) below, is formidable even by rGyalrongic standards:

<sup>4</sup> The voiceless fricative /f/ occurs contrastively in consonant clusters only.

|                   |                                    |
|-------------------|------------------------------------|
| (2) <i>ɤldʒvə</i> | ‘to bud’                           |
| <i>nscvi</i>      | ‘to lock up’                       |
| <i>nybjo</i>      | ‘to fly’                           |
| <i>ɤvrdʒɣ</i>     | ‘to sink’                          |
| <i>fʰtsjæ</i>     | ‘to make someone put out (a fire)’ |

Only a handful of the consonants function as syllable codas: *-v*, *-m*, *-t*, *-n*, *-ʒ*, *-ɣ*, *-ŋ*, *-r*, and *-l*.

The Puxi vocalic system contains the following contrastive vowels:

|              |          |
|--------------|----------|
| (3) <i>i</i> | <i>u</i> |
| <i>e</i>     | <i>ə</i> |
|              | <i>o</i> |
|              | <i>ʌ</i> |
|              | <i>ɔ</i> |
| <i>æ</i>     | <i>a</i> |

The phenomenon of VELARIZATION is far and away the most remarkable feature of Puxi phonology. Most Puxi vowel phonemes have a corresponding velarized counterpart.<sup>5</sup> The entire syllable containing one of these vowels are velarized, pronounced with the dorsum of the tongue arched toward the soft palate.<sup>6</sup> Consider the minimal pairs below:

|               |                      |
|---------------|----------------------|
| (4) <i>zə</i> | ‘male person’        |
| <i>zəʷ</i>    | ‘to be tender’       |
| <i>rtsʌ</i>   | ‘root’               |
| <i>rtsʌʷ</i>  | ‘deer’               |
| <i>spu</i>    | ‘solid food in soup’ |
| <i>spuʷ</i>   | ‘lid’                |

<sup>5</sup> Velarized /iʷ/ and /æʷ/ have not been attested yet. Following Laver 1994:325-326, velarization is transcribed here by a small superscript *y* after the vowel.

<sup>6</sup> One important source of Puxi velarization may be rounding in the proto-rhymes, as indicated by comparative rGyalrongic evidence:

| Puxi         | Geshizha     | Mu'erzong    | Caodeng       | Zhuokeji      | Gloss       |
|--------------|--------------|--------------|---------------|---------------|-------------|
| <i>lməʷ</i>  | <i>lmu</i>   | <i>lmoʔ</i>  | <i>tə-rmu</i> | <i>tə-rmo</i> | ‘hail’      |
| <i>tsʰəʷ</i> | <i>tsʰuə</i> | <i>tsʰoʔ</i> | <i>tsʰo</i>   | <i>tsʰo</i>   | ‘to be fat’ |
| <i>dʒvəʷ</i> | <i>dʒə</i>   | <i>dʒə</i>   | <i>ⁿdʒwiʔ</i> | ---           | ‘to melt’   |
| <i>znəʷ</i>  | <i>snə</i>   | <i>mnə</i>   | <i>ⁿnos</i>   | <i>nos</i>    | ‘to dare’   |

### 1.2.2 Tonality

Puxi distinguishes a simple tone system with two contrastive tones, high and low.<sup>7</sup> High and low tones are normally realized by high-falling pitch and low-rising pitch respectively, as seen in these tonally differentiated pairs:

|   |         |
|---|---------|
| (5) <i>grə</i> [ <i>grə</i> <sup>53</sup> ] | ‘sinew’ |
| <i>grə</i> [ <i>grə</i> <sup>13</sup> ]     | ‘water’ |
| <i>reɣ</i> [ <i>reɣ</i> <sup>53</sup> ]     | ‘one’   |
| <i>reɣ</i> [ <i>reɣ</i> <sup>13</sup> ]     | ‘cloth’ |

The pitch patterns in words containing more than one syllable are conspicuously limited, owing to an interlocking system of accent. In fact, the two-way tonal contrast can be carried only by the accented syllable in a polysyllabic word.<sup>8</sup> Accent, borne potentially by any of the last three syllables of a word, is henceforth represented by the acute accent ´; since final accent is by far the most common accent position, it can be regarded as a default and left unmarked. The data set below illustrates the two tones in contrast on the accented antepenult:

|   |             |
|---|-------------|
| (6) <i>jó-və-zə</i> [ <i>jó</i> <sup>13</sup> - <i>və</i> <sup>11</sup> - <i>zə</i> <sup>11</sup> ] | ‘sparrow’   |
| <i>nəl-bə-dʒa</i> [ <i>nəl</i> <sup>53</sup> - <i>bə</i> <sup>11</sup> - <i>dʒa</i> <sup>11</sup> ] | ‘earthworm’ |

As in (6) above, syllables after the accented syllable are associated with a predictable low-level pitch, phonetically distinct from the low tone, which implements the step-down of pitch characteristic of pitch accent systems. Pre-accent syllables usually take a redundant mid-level pitch:

|   |                |
|---|----------------|
| (7) <i>nə-nskʰAtfʰətfʰə</i> [ <i>nə</i> <sup>33</sup> - <i>skʰA</i> <sup>33</sup> - <i>tfʰə</i> <sup>33</sup> - <i>tfʰə</i> <sup>13</sup> ] | ‘they chatted’ |
|---|----------------|

### 1.3 Inflectional morphology of the Puxi verb

Verbs in Puxi make ample use of inflectional morphology, involving both stem modification and affixation. Finite verbs comprise a stem with a string of derivational

<sup>7</sup> In my phonemic notation, the high tone is unmarked while the low tone is represented by an underline.

<sup>8</sup> This bears some resemblance to partial word tones of the Baltic (Lithuanian) and South Slavic (i.e. Serbo-Croatian and Slovene) type. However, the Indo-European word tones are intertwined with vocalic length and are not contrastive on monosyllables (cf. Lehiste 1970 Chapter 3, Bethin 1996:112-187, 236-243).

and inflectional affixes. Two verb stems are distinguished along tense-aspect lines, whereas inflectional affixes denote such grammatical information as person-number, orientation, transitivity, direction, evidentiality, as well as tense-aspect. The attested morpheme slots in inflected Puxi verbs, as exemplified in (8a-c), can be given tentatively as the following: ORIENTATION/ASPECT/IMPERATIVE PREFIX + NEGATOR PREFIX + TRANSITIVITY PREFIX<sup>9</sup> + REFLEXIVE PREFIX + STEM + PERSON-NUMBER AGREEMENT SUFFIX + EVIDENTIAL SUFFIX.

- (8) (a) *tʰə-ɣə*      *ŋʌ-də*      *pʰosi-skʌt*      *gə-v-ldzi-aŋ*  
 3S-ERG      1S-DAT      Puxi-language      PF-TR-teach:PT-1S  
 ‘S/he taught me the Puxi language.’  
 (b) *nə-də-ŋjʌ-sʰʌ-n*  
 IMP-NEG-REFL-kill-2  
 ‘Don’t kill yourself!’  
 (c) *ptʂʌfi*      *dʌvju*      *tʰʌro*      *vɛf-tʰə-si*  
 Trashī      now      meal      PRG:Q-TR-drink:PRG-EV<sup>10</sup>  
 ‘Is Trashī dining now?’

A set of ORIENTATION<sup>11</sup> prefixes occur on most verb forms in Puxi, coding aspectual, modal, as well as spatial-deictic information. Furthermore, the progressive is

<sup>9</sup> These include the intransitive prefix *n-* and the transitive-inverse prefix *v-*, the latter has an allomorph *f-* before a voiceless consonant, and is omitted altogether before labial consonants and those preceded by nasals. The marker *v-* is required if the verb predicates a transitive event with a non-SAP (speech-act participant) agent acting on a non-SAP patient, as well as in all inverse argument configurations (2>1, 3>1, 3>2). Since the Puxi verb agrees with the patient when the speaker and hearer interact (SAP<>SAP), but otherwise always with the SAP, transitivity-inverse marking in Puxi serves a useful function of disambiguating argument relations. Thus *v-*, a direct reflex of the Proto-rGyalrongic inverse prefix \**wə-*, now serves two originally separate functions, transitivity-marking and inverse-marking. This is paralleled exactly by transitivity-inverse marking in the Mu’erzong dialect of Lavrung, even though completely different coding devices are involved (J. T.-S. Sun 2000:§2.3.2).

<sup>10</sup> The progressive prefix here occurs in a distinct accented INTERROGATIVE form with an *i*-vocalism.

<sup>11</sup> The Puxi orientation system includes three geographically based subsystems, each with two opposing terms: vertical (up-down), riverine (upstream-downstream), and solar (east-west). The same system is utilized by rGyalrong proper and Lavrung, and therefore reconstructible to Proto-rGyalrongic; the riverine subsystem seems to have been eroded in Horpa (Duo’erji 1998: 70-71, Huang 1991a:26-27), however. The six Puxi orientation prefixes, essentially identical to those reported in the Dayili variety (Qu 1990:40), are given in the table below:

| up        | down      | upstream   | downstream | eastward  | westward  |
|-----------|-----------|------------|------------|-----------|-----------|
| <i>rə</i> | <i>nə</i> | <i>ldə</i> | <i>və</i>  | <i>ɣə</i> | <i>gə</i> |

marked by the prefix *və*, identical in form to the orientation prefix for ‘downstream’. In the ensuing sections, prefixed third-person singular verb forms are cited wherever needed to facilitate the presentation of accentual alternations.

## 2. Alternations in Puxi stem-formation

Verb-stem formation in Puxi involves a high degree of complexity. The nonpast stem, as in the other rGyalrongic languages, is the verb base occurring in a wide range of verb forms, including the infinitive, the gnomic, the habitual, as well as the future. The main derived stem in Puxi is the past stem, on which the aorist (perfective past), the imperfect (imperfective past), as well as the progressive forms are built. The formation of the past stem involves considerable internal modification by means of segmental, tonal, and accentual alternations.

### 2.1 Segmental alternations

Generally speaking, vocalic alternation does not figure much in Puxi verb-stem formation; ablauting verbs, as in (9), are rare exceptions:<sup>12</sup>

| (9) BASE                 | AOR             | PRG            |                   |
|--------------------------|-----------------|----------------|-------------------|
| <i>tʃ<sup>h</sup>Δ t</i> | <i>gəʃ-tʃet</i> | <i>və-tʃet</i> | ‘to be exhausted’ |
| <i>nvΔ</i>               | <i>nvɿ</i>      | <i>və-nvɿ</i>  | ‘to take away’    |

Instead, the past and progressive stems both undergo a strange type of consonantal alternation whereby an originally unaspirated initial consonant turns into a corresponding aspirated consonant (10), and vice versa (11):

| (10) BASE              | AOR                                     | PRG                                     |                      |
|------------------------|---|---|----------------------|
| <i>tsə<sup>v</sup></i> | <i>gəʃ-ts<sup>h</sup>ə<sup>v</sup>v</i> | <i>vəʃ-ts<sup>h</sup>ə<sup>v</sup>v</i> | ‘to strangle’        |
| <i>tʃΔ<sup>v</sup></i> | <i>rəʃ-tʃ<sup>h</sup>Δ<sup>v</sup></i>  | <i>vəʃ-tʃ<sup>h</sup>Δ<sup>v</sup></i>  | ‘to wear (hats)’     |
| <i>qrə</i>             | <i>nəʃ-q<sup>h</sup>rə</i>              | <i>vəʃ-q<sup>h</sup>rə</i>              | ‘to chop (firewood)’ |

| (11) BASE              | AOR            | PRG            |                     |
|------------------------|----------------|----------------|---------------------|
| <i>p<sup>h</sup>i</i>  | <i>nəʃ-pi</i>  | <i>vəpi</i>    | ‘to escape’         |
| <i>ts<sup>h</sup>ə</i> | <i>nəʃ-tsə</i> | <i>vəʃ-tsə</i> | ‘to hit; to strike’ |
| <i>lp<sup>h</sup>ə</i> | <i>nəʃ-lpa</i> | <i>vəlpə</i>   | ‘to cut open’       |

<sup>12</sup> In the data sets that follow, three verb forms will be cited to illustrate Puxi stem alternations: the citation or base form, the aorist, and the progressive. The progressive verb form is identical in form to the aorist form marked with the orientation prefix *və* ‘downstream’.



Aspiration inversion takes as input not only stops and affricates as in (10-11) but also spirant consonants, with quite striking results:

| (12) BASE         | AOR                               | PRG                        |                        |
|-------------------|-----------------------------------|----------------------------|------------------------|
| $\zeta^h i$       | $r\acute{\sigma}f\text{-}\zeta i$ | $v\sigma f\text{-}\zeta i$ | ‘to wear (shoes)’      |
| $\int^h \Delta r$ | $g\acute{\sigma} \int \Delta r$   | $v\sigma \int \Delta r$    | ‘to shine; to show up’ |
| $nfs^h \sigma$    | $n\acute{\sigma} nfs \sigma$      | $v\sigma nfs \sigma$       | ‘to lead along’        |

The aspiration and deaspiration operations must permeate the entire multisyllabic stem, as in:

| (13) BASE                                | AOR   | PRG   |                     |
|--|---|---|---------------------|
| $p\acute{\sigma} tev$                    | $n\sigma p^h \sigma t^h \acute{\sigma} v$         | $v\sigma p^h \sigma t^h \acute{\sigma} v$         | ‘to smash (a bowl)’ |
| $nq \acute{a} q \sigma$                  | $r\sigma nq^h \sigma aq^h \sigma$                 | $v\sigma nq^h \sigma aq^h \sigma$                 | ‘to pull’           |
| $rts^h \acute{\sigma} p^h \sigma \gamma$ | $n\sigma rts \sigma \acute{\sigma} \sigma \gamma$ | $v\sigma rts \sigma \acute{\sigma} \sigma \gamma$ | ‘to cough’          |

Aspiration alternation, of course, exerts no effect where aspiration is not a relevant phonological feature; consequently, for verbs containing voiced initials the past and progressive stems are identical to the nonpast stem with regard to their segmental makeup.

## 2.2 Suprasegmental alternations

In addition to the phonologically restricted segmental alternations described in the foregoing section, the past and progressive forms of the majority of Puxi verbs also exhibit systematic tonal and accentual differences.

The primary alternation mechanism is TONAL INVERSION. As evidenced in the following data sets exemplifying monosyllabic verb stems, the input high tone changes to low tone (14) while an input low tone changes to high tone (15) in the aorist and progressive:

| (14) BASE                | AOR                                   | PRG                             |                          |
|--------------------------|---------------------------------------|---------------------------------|--------------------------|
| $d\zeta v \sigma^V$      | $\gamma \sigma d\zeta v \sigma^V$     | $v\sigma d\zeta v \sigma^V$     | ‘to melt [INTR]’         |
| $zK \sigma$              | $g\sigma v\text{-}zK \sigma$          | $v\sigma v\text{-}zK \sigma$    | ‘to boil (food)’         |
| $r\eta \sigma$           | $\gamma \sigma v\text{-}r\eta \sigma$ | $v\sigma v\text{-}r\eta \sigma$ | ‘to borrow’              |
| (15) BASE                | AOR                                   | PRG                             |                          |
| $ndzu$                   | $\gamma \sigma ndzu$                  | $v\sigma ndzu$                  | ‘to sit’                 |
| $v\zeta \underline{u}$   | $\gamma \sigma vlu$                   | $v\sigma vlu$                   | ‘to string (e.g. beads)’ |
| $t^h \underline{\sigma}$ | $\gamma \sigma f\text{-}t\sigma$      | $v\sigma f\text{-}t\sigma$      | ‘to put’                 |

In numerous cases, accentual variation is also observed in the high-toned aorist form, with the accent falling on the aspect/orientation prefix instead of on the verb stem, e.g.

| (16) BASE     | AOR               | PRG               |                            |
|---------------|-------------------|-------------------|----------------------------|
| <i>nzrɔ̃v</i> | <i>rɔ̃-nzrɔ̃v</i> | <i>vɔ̃-nzrɔ̃v</i> | ‘to suck’                  |
| <i>bɔ̃v</i>   | <i>nɔ̃-bɔ̃v</i>   | <i>vɔ̃-bɔ̃v</i>   | ‘to land; to dismount’     |
| <i>mɑ̃r</i>   | <i>gɔ̃-mɑ̃r</i>   | <i>vɔ̃-mɑ̃r</i>   | ‘to apply (e.g. ointment)’ |

Upon further investigation, this accentual discrepancy turns out to result from a general rule in the language whereby the four aspect/orientation prefixes *rɔ̃* ‘upward’, *nɔ̃* ‘downward’, *gɔ̃* ‘westward’, and *ldɔ̃* ‘upstream’ obligatorily receive accent in high-toned, non-negated<sup>13</sup> verb forms, whereas the other two aspect/orientation prefixes *ɣɔ̃* ‘eastward’, and *vɔ̃* ‘downstream’ are never accented.<sup>14</sup> The data in (17)-(18), showing orientationally differentiated imperfective and aorist forms of the monosyllabic verb *sq<sup>h</sup>leɣ* ‘to take out’ (17) and the disyllabic *vɔ̃ɣræ* ‘to run’ (18), demonstrate the disparate accentual behavior of these prefixes. Two additional observations, however, must be made to fully account for the data. First, the past stem of the high-toned verb *sq<sup>h</sup>leɣ* ‘to take out’ is not subject to tonal inversion; this apparent exception turns out to be rule-governed also (see further down). Second, high-tone polysyllabic verb forms marked with *ɣɔ̃* ‘eastward’ and *vɔ̃* ‘downstream’ must be accented on the penultimate, rather than the final, syllable (18b):

| (17) | OR           | IMPF                            | AOR                 |
|------|--------------|---------------------------------|---------------------|
| (a)  | ‘upward’     | <i>rɔ̃-f-sq<sup>h</sup>leɣ</i>  | <i>rɔ̃-f-sqleɣ</i>  |
|      | ‘downward’   | <i>nɔ̃-f-sq<sup>h</sup>leɣ</i>  | <i>nɔ̃-f-sqleɣ</i>  |
|      | ‘eastward’   | <i>gɔ̃-f-sq<sup>h</sup>leɣ</i>  | <i>gɔ̃-f-sqleɣ</i>  |
|      | ‘upstream’   | <i>ldɔ̃-f-sq<sup>h</sup>leɣ</i> | <i>ldɔ̃-f-sqleɣ</i> |
| (b)  | ‘westward’   | <i>ɣɔ̃-f-sq<sup>h</sup>leɣ</i>  | <i>ɣɔ̃-f-sqleɣ</i>  |
|      | ‘downstream’ | <i>vɔ̃-f-sq<sup>h</sup>leɣ</i>  | <i>vɔ̃-f-sqleɣ</i>  |

<sup>13</sup> In negated forms these prefixes do not receive accent; consider for example *rɔ̃-mi-f-sq<sup>h</sup>leɣ* ‘s/he does not take out’; *rɔ̃-mæ-f-sqleɣ* ‘s/he did not take out’.

<sup>14</sup> Interestingly, skewed accentability among orientation prefixes is also noted in Ribü rGyalrong in which all orientation prefixes except those for ‘downward’ and ‘level’, the latter representing a merger of the Proto-rGyalrongic solar subsystem, are assigned accent by individual verbs in certain conjugations; contrast for example *ti-tɔ̃-nɔ̃-s* ‘you drove up’ and *nɔ̃-tɔ̃-nɔ̃-s* ‘you drove down’.

|      |              |                    |                   |
|------|--------------|--------------------|-------------------|
| (18) | <b>OR</b>    | <b>IMPF</b>        | <b>AOR</b>        |
| (a)  | ‘upward’     | <i>rɔ́-rjəyræ</i>  | <i>rə-rjəyræ</i>  |
|      | ‘downward’   | <i>nɔ́-rjəyræ</i>  | <i>nə-rjəyræ</i>  |
|      | ‘eastward’   | <i>gɔ́-rjəyræ</i>  | <i>gə-rjəyræ</i>  |
|      | ‘upstream’   | <i>ldɔ́-rjəyræ</i> | <i>ldə-rjəyræ</i> |
| (b)  | ‘westward’   | <i>ɣɔ́-rjəyræ</i>  | <i>ɣə-rjəyræ</i>  |
|      | ‘downstream’ | <i>vɔ́-rjəyræ</i>  | <i>və-rjəyræ</i>  |

Polysyllabic stems likewise undergo tonal inversion. In (19), high-toned disyllabic input forms take the low-tone in the aorist and progressive. The verb bases may bear either penultimate (19a) or final (19b) accent, but the accent of the derived past stem is always on the low-toned final syllable:

|      |                 |                              |                              |                        |
|------|-----------------|------------------------------|------------------------------|------------------------|
| (19) | <b>BASE</b>     | <b>AOR</b>                   | <b>PRG</b>                   |                        |
| (a)  | <i>χpɔ́rjəy</i> | <i>nəχp<sup>h</sup>ərjəy</i> | <i>vəχp<sup>h</sup>ərjəy</i> | ‘to blow (as of wind)’ |
|      | <i>púrə</i>     | <i>nəp<sup>h</sup>urə</i>    | <i>vəp<sup>h</sup>urə</i>    | ‘to raise; to keep’    |
|      | <i>vjəyræ</i>   | <i>nəvjəyræ</i>              | <i>vəvjəyræ</i>              | ‘to run’               |
| (b)  | <i>rɲurdzu</i>  | <i>nə-rɲurdzu</i>            | <i>və-rɲurdzu</i>            | ‘to kneel’             |
|      | <i>ɲjə ræ</i>   | <i>gə-ɲjə ræ</i>             | <i>və-ɲjə ræ</i>             | ‘to look’              |
|      | <i>ʃʌlo</i>     | <i>gə-ʃʌlo</i>               | <i>və-ʃʌlo</i>               | ‘to go to bed’         |

With a low-toned polysyllabic input form<sup>15</sup> tonal inversion, as expected, yields high-toned aorist and progressive forms (20). Incidentally, it is this last type of verbs that presents the richest accentual variation, due to the divers requirements made by the aspectual/orientational prefixes on accent placement (see 17-18, footnote 12 above):

|      |  |                      |                     |                         |
|------|--|----------------------|---------------------|-------------------------|
| (20) | <b>BASE</b>                            | <b>AOR</b>           | <b>PRG</b>          |                         |
|      | <i>ɲpəɲo nɔ́-ɲpəɲo</i>                 | <i>və-ɲpəɲo</i>      |                     | ‘to follow’             |
|      | <i>sɲuræ</i>                           | <i>nɔ́-f-sɲuræ</i>   | <i>və-f-sɲúræ</i>   | ‘to churn’              |
|      | <i>tʃ<sup>h</sup>ərt<sup>h</sup>əχ</i> | <i>nɔ́-f-tʃərtəχ</i> | <i>və-f-tʃərtəχ</i> | ‘to extract (e.g. oil)’ |

The presentation on suprasegmental alternations of the Puxi verb stem will not be complete without mentioning a major exception to the above tone-inversion rule; namely, high-toned verbs containing an ASPIRATED initial maintain the high tone in the deaspirated past stem. In other words, for high-toned verbs aspiration inversion alone suffices to mark the past stem as distinct from the non-past:

<sup>15</sup> Low-toned disyllabic verbs always seem to bear final accent. The other possibility, penultimately accented low-tone verbs, is not yet attested.

| (21) NON-PT                        | AOR                                 | PRG                                |              |
|------------------------------------|-------------------------------------|------------------------------------|--------------|
| <i>nʃ<sup>h</sup>u</i>             | <i>gɔ́-<i>nʃ</i>u</i>               | <i>və-<i>nʃ</i>u</i>               | ‘to entrust’ |
| <i>st<sup>h</sup>ə<sup>y</sup></i> | <i>nɔ́-f-<i>st</i>ə<sup>y</sup></i> | <i>və-f-<i>st</i>ə<sup>y</sup></i> | ‘to soak’    |
| <i>nk<sup>h</sup>ʌ-jæ</i>          | <i>rɔ́-<i>nk</i>ʌ-jæ</i>            | <i>və-<i>nk</i>ʌ-jæ</i>            | ‘to answer’  |

In contrast, the past stems of low-toned verbs with such initials are still doubly marked by both deaspiration and tonal inversion:

| (22) NON-PT                           | AOR                                    | PRG                                   |                           |
|---------------------------------------|--|---------------------------------------|---------------------------|
| <i>st<sup>h</sup>ə<sup>y</sup>ɣ</i>   | <i>rɔ́-<i>st</i>ə<sup>y</sup>ɣ</i>     | <i>və-<i>st</i>ə<sup>y</sup>ɣ</i>     | ‘to wake up’              |
| <i>ʃ<sup>h</sup>ur</i>                | <i>nɔ́-<i>ʃ</i>ur</i>                  | <i>və-<i>ʃ</i>ur</i>                  | ‘(a swelling) to subside’ |
| <i>tʃ<sup>h</sup>ər<sup>h</sup>əɣ</i> | <i>nɔ́-f-<i>tʃ</i>ər<sup>h</sup>əɣ</i> | <i>və-f-<i>tʃ</i>ər<sup>h</sup>əɣ</i> | ‘to extract (oil)’        |

### 3. External comparisons

#### 3.1 Comparison with Geshizha and Daofu Horpa

##### 3.1.1 The data

The authorities this section draws from are Duo’erji’s Geshizha grammar (Duo’erji 1998), a most valuable source on a variety of Danba Horpa, and Huang Bufan’s work on Daofu Horpa (Huang 1990, 1991a).<sup>16</sup> I have to content myself with comparing segmental alternations only, as most sources on Horpa agree on its lack of lexical tone or contrastive accent,<sup>17</sup> and as the complex Puxi suprasegmental alternations do not correspond to anything obvious in Horpa.

In Geshizha, the progressive and the past stems are identical in form, probably because Geshizha no longer has recourse to suprasegmental material to keep the two apart. In the formation of this uniform derived stem, the verb base must undergo exactly the same aspiration alternations as in Puxi (Duo’erji 1998:78-79):

<sup>16</sup> Sun Hongkai’s description of Dasang ‘Ergong’ (HK Sun 1983) also deals with a variety of Horpa of Danba County. I am unable to benefit much from this source of Horpa as it is too limited, other than note in passing the author’s comment on the change of unaspirated initials of ‘future’ (i.e. non-past) verb forms into aspirated ones in the ‘present’ (i.e. progressive) and past forms. His examples are: *tɕi* ‘to ride’, *gɛ-tɕ<sup>h</sup>u-u* ‘I am riding’, *dɛ-tɕ<sup>h</sup>u-u* ‘I rode’; *qua* ‘to dig’, *gɛ-q<sup>h</sup>ua-u* ‘I am digging’, *dɛ-q<sup>h</sup>ua-u* ‘I dug’ (HK Sun 1983:148).

<sup>17</sup> Liu (1989) reports as many as four tones in one variety of Horpa distributed in Xianshui Township of Daofu County.

|      |                                    |                                       |                                       |                     |
|------|------------------------------------|---------------------------------------|---------------------------------------|---------------------|
| (23) | <b>BASE</b>                        | <b>AOR</b>                            | <b>PRG</b>                            |                     |
| (a)  | <i>fqrə</i>                        | <i>da-fq<sup>h</sup>rə</i>            | <i>ga-fq<sup>h</sup>rə</i>            | ‘to split open’     |
|      | <i>xsu</i>                         | <i>də-x<sup>h</sup>s<sup>h</sup>u</i> | <i>gə-x<sup>h</sup>s<sup>h</sup>u</i> | ‘to keep; to raise’ |
|      | <i>ɕə</i>                          | <i>da-ɕ<sup>h</sup>ə</i>              | <i>ga-ɕ<sup>h</sup>ə</i>              | ‘to go’             |
| (b)  | <i>s<sup>h</sup>t<sup>h</sup>a</i> | <i>da-sta</i>                         | <i>ga-sta</i>                         | ‘to complete’       |
|      | <i>ŋk<sup>h</sup>uə</i>            | <i>da-ŋkuə</i>                        | <i>ga-ŋkuə</i>                        | ‘to put inside’     |
|      | <i>s<sup>h</sup>t<sup>h</sup>i</i> | <i>da-sti</i>                         | <i>ga-sti</i>                         | ‘to infect’         |

In Daofu, the progressive aspect is expressed periphrastically by the nonpast stem plus the imperfective suffix *-gu* in construction with the existential-locative verb *fji* ‘to exist; to be present’ (often followed by the copula *rə*); as for example (Huang 1991a:37):

|      |                                   |                |
|------|-----------------------------------|----------------|
| (24) | <i>xi-gu</i>                      | <i>a-fji-n</i> |
|      | put on (shoes)-IMPF               | Q-exist-2      |
|      | ‘Are you putting (the shoes) on?’ |                |

The Daofu past stem, on the other hand, is still partially distinct from the nonpast. Describing the perfective verb forms, Huang (1991a:34) states that in addition to taking the perfective/orientation prefixes verbs with aspirated initials become deaspirated in the perfective, without mentioning the reverse process. Judging from her published Daofu lexical data (Huang 1991a; Huang et al. 1992), nevertheless, it is clear that both deaspiration (25) and aspiration (26) are at work in Daofu:<sup>18</sup>

|      |                         |                 |                        |
|------|-------------------------|-----------------|------------------------|
| (25) | <b>BASE</b>             | <b>AOR</b>      |                        |
|      | <i>cɕ<sup>h</sup>i</i>  | <i>rə-f-cɕi</i> | ‘to ride’              |
|      | <i>k<sup>h</sup>rə</i>  | <i>də-f-krə</i> | ‘to catch’             |
|      | <i>nɬ<sup>h</sup>i</i>  | <i>rə-nɬi</i>   | ‘to pull up’           |
|      | <i>q<sup>h</sup>i</i>   | <i>nə-qi</i>    | ‘to fall (as of rain)’ |
|      | <i>sk<sup>h</sup>lu</i> | <i>nə-sklu</i>  | ‘to swallow’           |

<sup>18</sup> The following verbs in her data seem exceptional, provided that typographical errors are not a factor here:

|                          |                             |                       |
|--------------------------|-----------------------------|-----------------------|
| <b>NON-PT</b>            | <b>PT</b>                   |                       |
| <i>nt<sup>h</sup>va</i>  | <i>nə-nt<sup>h</sup>va</i>  | ‘to tread’            |
| <i>tɕe</i>               | <i>rə-tɕe</i>               | ‘to wear (hats)’      |
| <i>fka</i>               | <i>gə-fka</i>               | ‘to block’            |
| <i>ncɕ<sup>h</sup>ə</i>  | <i>nə-ncɕ<sup>h</sup>ə</i>  | ‘to hit’              |
| <i>mtɕ<sup>h</sup>ur</i> | <i>də-mtɕ<sup>h</sup>ur</i> | ‘to take in the beak’ |

|      |             |                             |                            |
|------|-------------|-----------------------------|----------------------------|
| (26) | <b>BASE</b> | <b>AOR</b>                  |                            |
|      | <i>rqva</i> | <i>nə-rq<sup>h</sup>va</i>  | ‘to become dilapidated’    |
|      | <i>fkə</i>  | <i>nə-fk<sup>h</sup>ə</i>   | ‘to be full (from eating)’ |
|      | <i>krə</i>  | <i>nə-f-k<sup>h</sup>rə</i> | ‘to split (firewood)’      |
|      | <i>fqε</i>  | <i>də-fq<sup>h</sup>ε</i>   | ‘to shoot’                 |
|      | <i>pqa</i>  | <i>rə-mq<sup>h</sup>a</i>   | ‘to lick’                  |

### 3.1.2 Discussion

The preceding data indicate that of the three unusual stem alternations employed by Puxi Shangzhai in its tense-aspect formations, ablaut, tonal inversion, and aspiration inversion, only the last alternation type is paralleled by similar phenomena in the two Horpa dialects examined. In Geshizha, aspiration inversion also conveys in part the progressive aspect, as the progressive and the past verb forms are built on the same derived stem. Daofu uses a distinct periphrastic progressive, but this in all likelihood is a new development replacing the older progressive construction still extant in Geshizha. The direction of historical change here should be straightforward, considering that Daofu seems generally more innovative than Geshizha,<sup>19</sup> and that periphrastic progressives, particularly in construction with a locative/existential auxiliary, are the more favored type typologically (Comrie 1976:98-103, Dahl 1985:90-95) and are therefore more likely than prefixal progressives to be the outcome of historical change. The strategy of inverting the aspiration feature in the formation of the past and progressive stem(s), attested in both Puxi Shangzhai and Horpa, thus reflects a morphological pattern dating to the common Horpa-Shangzhai stage. Are we dealing here with a unique Horpa-Shangzhai innovation? And what about tonal inversion and tense-marking ablaut, seemingly restricted to Puxi? To seek answers to these questions, we need to widen our comparisons by locating traces of these morphological oddities in the other rGyalrongic languages.

## 3.2. rGyalrongic comparisons

### 3.2.1 The data

#### 3.2.1.1 Alignment of past and progressive stems

Marking the progressive<sup>20</sup> and past stem(s) in opposition to the nonpast stem is quite surprising from the typological point of view, as the progressive is generally

<sup>19</sup> Another important morphosyntactic innovation in Daofu is the use of reduplicated verb stems to express the plural number; e.g. *əə* ‘s/he goes’; *əə-əə* ‘they go’ (Huang 1991a:29).

<sup>20</sup> In all the languages considered herein, the progressive has both dynamic and stative uses, as is the case in Quechua (Dahl 1985:94). The aspectual category therefore corresponds to what Comrie terms ‘continuous’ in his classification of imperfective subdivisions (Comrie 1976:§1.2).

agreed to be a special case of the imperfective, which is strongly correlated with nonpast, rather than past, time reference (Comrie 1976: 24-40, Dahl 1985:92-93). I am currently aware of only one external parallel among rGyalrongic: Sidaba rGyalrong. There are two progressives in the Caodeng subdialect of Sidaba, differing essentially in transitivity. The transitive progressive is formed from a variant of the nonpast stem with a progressive prefix *ɬɬ* whereas the intransitive progressive comprises the PAST stem plus a different prefix *tʰɬ*. The distinction is brought out clearly by examples like the following (see also J. T.-S. Sun forthcoming:§3.4.2):

- (27) (a) *koʔ(-kə)*      *jəye*      *ɬɬ/\*tʰɬ-rèt*  
 3S-ERG      word/letter      PRG:TR-write  
 ‘He is writing words/letters.’  
 (b) *koʔ*    *tʰɬ/\*ɬɬ-rɐ-ret*  
 3S    PRG:INTR-DETR-write:PT  
 ‘He is writing.’

In the Ribu subdialect of Sidaba rGyalrong, an even closer analogue to the Horpa-Shangzhai situation is found, with its primary progressive<sup>21</sup> composed directly of the past stem and the progressive prefixes *rə-/rɐ*,<sup>22</sup> illustrated in these third person singular future (showing the non-past stem), imperfect, and progressive (both showing the past stem)<sup>23</sup> verb forms:

| (28) FUT         | IMPFT           | PRG             |                        |
|------------------|-----------------|-----------------|------------------------|
| <i>jə-ntʃʰoʔ</i> | <i>nɐ-ntʃʰi</i> | <i>rɐ-ntʃʰi</i> | ‘to kill’              |
| <i>jə-ffoʔ</i>   | <i>nɐ-ffi</i>   | <i>rɐ-ffi</i>   | ‘to put; to place’     |
| <i>jə-ndziʔ</i>  | <i>nɐ-ndziʔ</i> | <i>rɐ-ndziʔ</i> | ‘to eat’               |
| <i>jə-niʔ</i>    | <i>nɐ-nɐʔ</i>   | <i>rɐ-nɐʔ</i>   | ‘to drive (livestock)’ |

<sup>21</sup> In the sense that it is the main progressive construction occurring in both transitive and intransitive contexts. Ribu distinguishes another progressive with the prefix *ɬɬ* attached to the un-ablauted nonpast stem. Unlike in Caodeng, this marker is used to denote supposedly still ongoing transitive events that the speaker has just now witnessed at some place other than the speech-act location.

<sup>22</sup> The allomorph *rɐ* appears on transitive verbs with third-person actors, reminiscent of the similar transitivity-marking alternation of prefix vowels found in Caodeng and Mu’erzong (J. T.-S. Sun 2000:§2.3).

<sup>23</sup> Stem formation in Ribu is much less straightforward than in Caodeng. In addition to a good number of verbs with invariant stems (including most verbs borrowed from Tibetan), there are many cases where in deriving the past stems the expected tone/glottality inversion does not occur, as for example the verbs ‘to eat’ and ‘to drive (livestock)’ shown here.

### 3.2.1.2 Aspiration alternations

As far as I know, no other Tibeto-Burman language uses aspiration alternations to code tense-aspect distinctions in exactly the same fashion as Horpa-Shangzhai. However, I have noted something remarkably analogous in Ribu rGyalrong where a good many verbs, such as in (29), show unaspirated stop/affricate initials in the nonpast stem but aspirated ones in the past stem:

| (29) NON-PT    | PT                                    |                             |
|----------------|---------------------------------------|-----------------------------|
| <i>nci</i>     | <i>nc<sup>h</sup>eʔ</i>               | ‘to dine; to eat a meal’    |
| <i>prūm</i>    | <i>p<sup>h</sup>rūm</i>               | ‘to be white’ <sup>24</sup> |
| <i>mərəkəʔ</i> | <i>mər<sup>h</sup>k<sup>h</sup>iʔ</i> | ‘to steal’                  |
| <i>npjΛre</i>  | <i>np<sup>h</sup>jereʔ</i>            | ‘to look’                   |

The Ribu process is much less productive than its counterpart in Puxi, the former being more susceptible to exceptions, for instance:

| (30) NON-PT  | PT           |               |
|--------------|--------------|---------------|
| <i>fskōr</i> | <i>fskòr</i> | ‘to surround’ |
| <i>tʃöv</i>  | <i>tʃəv</i>  | ‘to sew’      |
| <i>nceʔ</i>  | <i>nci</i>   | ‘to walk’     |

Aspiration alternations in Ribu are more constrained in other ways. For one thing, the spirant initials are exempt from the process since Ribu spirants do not contrast in aspiration. The Ribu operation is moreover unidirectional only, lacking the inverse treatment, the deaspiration of aspirated verb bases. On the other hand, Ribu aspiration alternations seems more varied in function, optionally applying in some cases even to the third kind of verb stem, in the same environments as specified for the transitivity-marking ablaut (represented in the following examples by the singular imperative).<sup>25</sup>

| (31) NON-PT    | PT                      | IMP:S                       |                                |
|----------------|-------------------------|-----------------------------|--------------------------------|
| <i>tsa</i>     | <i>ts<sup>h</sup>Λʔ</i> | <i>ts<sup>(h)</sup>eʔ</i>   | ‘to strangle’                  |
| <i>səstà t</i> | <i>səstà t</i>          | <i>səst<sup>(h)</sup>et</i> | ‘to cause (e.g. rain) to stop’ |

<sup>24</sup> Unlike in Caodeng, closed syllables in Ribu distinguish two tones, level and falling. In the following examples, the two tonemes are represented respectively by the macron and the grave accent.

<sup>25</sup> This type of ablaut, termed ABLAUT B in my earlier paper (J. T.-S. Sun 2000:§2.2), is attested to date only in Sidaba rGyalrong. It refers to vowel alternations many common transitive verbs exhibit in certain highly specific morphosyntactic contexts, i.e. non-first person, singular, direct (vs. inverse), and non-past.



### 3.2.1.3 Tonal versus glottality inversion

The tense-marking tonal inversion in Puxi seems readily comparable to the functionally identical glottality inversion phenomenon in Caodeng rGyalrong and Mu'erzong Lavrung (J. T.-S. Sun 2000:§2.1), especially since in the latter languages the glottal coda is associated with redundant pitch differences.<sup>26</sup> There is a better correlation between the low tone in Puxi with the glottal coda in Caodeng rGyalrong, compared with the more disorderly correspondences between Puxi tones and the Mu'erzong glottal stop:

| (32) Puxi             |                        | Caodeng                  |                         | Mu'erzong    |             |                  |
|-----------------------|------------------------|--------------------------|-------------------------|--------------|-------------|------------------|
| NON-PT                | PT                     | NON-PT                   | PT                      | NON-PT       | PT          |                  |
| <i>fʃi</i>            | <i>fʃ<sup>h</sup>i</i> | <i>fʃø</i>               | <i>fʃe?</i>             | <i>fʃə</i>   | <i>fʃə?</i> | 'to whet'        |
| <i>zbrə</i>           | <i>zbrə</i>            | <i>ʒ<sup>n</sup>bri?</i> | <i>ʒ<sup>n</sup>bri</i> | <i>zbre?</i> | <i>zbre</i> | 'to make sounds' |
| <i>t<sup>h</sup>ə</i> | <i>tə</i>              | <i>te?</i>               | <i>te</i>               | <i>de?</i>   | <i>de</i>   | 'to put; place'  |
| <i>dzə</i>            | <i>dzə</i>             | <i><sup>n</sup>dze</i>   | <i><sup>n</sup>dze?</i> | <i>dze?</i>  | <i>dzi</i>  | 'to eat'         |
| <i>zɛə</i>            | <i>zɛə</i>             | <i>sqø</i>               | <i>sqø?</i>             | <i>sɣi?</i>  | <i>sɣi</i>  | 'to boil (food)' |
| <i>rŋə</i>            | <i>rŋə</i>             | <i>rŋi</i>               | <i>rŋi?</i>             | <i>rŋi?</i>  | <i>rŋi</i>  | 'to borrow'      |
| <i>ri</i>             | <i>ri</i>              | <i>mti?</i>              | <i>mti</i>              | <i>vde</i>   | <i>vde?</i> | 'to see'         |
| <i>bri</i>            | <i>bri</i>             | <i><sup>n</sup>bri?</i>  | <i><sup>n</sup>bri</i>  | <i>bre</i>   | <i>bre?</i> | 'to be high'     |

The correlation is unfortunately imperfect, since there are cases where the Puxi low tone corresponds to a glottal coda in the Mu'erzong rather than the Caodeng cognates (33), or where the correspondences are skewed altogether (34):

| (33) Puxi               |                         | Caodeng                  |                         | Mu'erzong   |              |                            |
|-------------------------|-------------------------|--------------------------|-------------------------|-------------|--------------|----------------------------|
| NON-PT                  | PT                      | NON-PT                   | PT                      | NON-PT      | PT           |                            |
| <i>spu</i>              | <i>sp<sup>h</sup>u</i>  | <i>spu?</i>              | <i>spu</i>              | <i>spua</i> | <i>spua?</i> | 'to be thick (not watery)' |
| <i>dʒvə<sup>w</sup></i> | <i>dʒvə<sup>w</sup></i> | <i><sup>n</sup>dʒwi?</i> | <i><sup>n</sup>dʒwi</i> | <i>dʒə</i>  | <i>dʒə?</i>  | 'to melt [INTR]'           |

| (34) Puxi               |                         | Caodeng       |              | Mu'erzong    |             |               |
|-------------------------|-------------------------|---------------|--------------|--------------|-------------|---------------|
| NON-PT                  | PT                      | NON-PT        | PT           | NON-PT       | PT          |               |
| <i>ndzə<sup>w</sup></i> | <i>ndzə<sup>w</sup></i> | <i>χtu</i>    | <i>χtu?</i>  | <i>ɣdə</i>   | <i>ɣdə?</i> | 'to buy'      |
| <i>ftʃəɣ</i>            | <i>ftʃəɣ</i>            | <i>ftʃos?</i> | <i>ftʃos</i> | <i>rtsæ?</i> | <i>rtsæ</i> | 'to castrate' |

<sup>26</sup> That is, high-level pitch in Caodeng, low-rising pitch in Mu'erzong. The pitch shapes in syllables with the glottal stop are not uniform in different forms of the same language. Of the recorded varieties of Lavrung, for instance, Yelong (personal research) agrees with Mu'erzong in showing a low-rising pitch before a glottal-stop coda, whereas in Ergali (Lin 1993:526-604) and Eri (Huang Bufan, personal communication) the corresponding pitch is high-level.

Tonal alternations of a less dramatic kind is also reported in the Hedong Zhaobei variety of Situ rGyalrong (Lin 1993:750), where a high-rising tone (<sup>35</sup>) on the future verb form shifts to high-level (<sup>44</sup>) on the past-tense form.<sup>27</sup>

### 3.2.1.4 Ablaut

Ablaut is already moribund as an exponent of tense/aspect morphology in Puxi, but extensive ablaut with the same morphological function is still very much alive in both Lavrung and the Sidaba rGyalrong. It may be of significance that among the handful of ablauting verb in my present Puxi data one is found with a Mu'erzong cognate showing similar vowel grades:

| (35) Puxi    |                |                | Mu'erzong    |              |                   |
|--------------|----------------|----------------|--------------|--------------|-------------------|
| NON-PT       | PT             | PRG            | NON-PT       | PT           |                   |
| <i>tʃʰΔt</i> | <i>gɔ-tʃet</i> | <i>vɔ-tʃet</i> | <i>tʃʰΔt</i> | <i>tʃʰit</i> | ‘to be exhausted’ |

### 3.2.2 Discussion

The foregoing comparative data reveal that none of the Horpa-Shangzhai stem-formation alternations considered in this paper are unique to this language. Thus, Sidaba rGyalrong displays features analogous to the Horpa-Shangzhai aspiration alternations in producing the past and progressive stem(s), while Puxi tonal inversion and ablaut, despite the absence of their Horpa counterparts, are matched by comparable devices in both rGyalrong and Lavrung. The distribution of these morphological agreements within rGyalrongic can be tabulated as follows:

|                                      | rGyalrong<br>(Sidaba) | Lavrung | Horpa-Shangzhai      |
|--------------------------------------|-----------------------|---------|----------------------|
| <b>Tense-marking<br/>ablaut</b>      | +                     | +       | +<br>(minimal)       |
| <b>Glottal/tonal<br/>inversion</b>   | +                     | +       | +                    |
| <b>Aspiration<br/>alternations</b>   | +<br>(unidirectional) | -       | +<br>(bidirectional) |
| <b>Alignment of<br/>PT/PRG stems</b> | +                     | -       | +                    |

**Table 1: rGyalrongic morphological agreements**

<sup>27</sup> Hedong Zhaobei is classified under the Jinchuan subdialect of Situ rGyalrong. The so-called ‘future’ tense here is better treated as a special case of the imperfective.

Since all these cases have to do with extremely idiosyncratic processes of inflectional morphology, none of the non-genetic factors of chance resemblance, contact, and independent development offer a satisfactory account. Much more probably, these intra-rGyalrongic agreements reflect either common inheritances, or common innovations made some time after the breakdown of the ancestral rGyalrongic language.

Vocalic alternations, or ablaut, is clearly in a terminal phase of obsolescence in Horpa-Shangzhai; yet, the prospects seem good for more relic ablauting verbs to turn up in Puxi and other dialects of Horpa-Shangzhai. It will then be possible to compare ablaut patterns across modern rGyalrongic and establish the process itself, coupled hopefully with well-defined ablaut series, as another Proto-rGyalrongic morphological conservatism, continued in vestigial forms across all rGyalrongic subgroups.

The Puxi tonal inversion seems relatable directly to the glottality inversion process in Caodeng rGyalrong and Mu'ertzong Lavrung, as manifestations of the same marking strategy with deep roots in Proto-rGyalrongic, going back probably to a past-tense morpheme in \*-s (J. T.-S. Sun 2000:§2.1.3).

It is more difficult at this stage of research to interpret the agreements between the Sidaba rGyalrong and Horpa-Shangzhai aspiration alternations with their aberrant patterns of stem alignment, as nothing like it has been discovered yet in the Lavrung language. Even in this case, shared retention in my view still provides a more cogent explanation, considering the otherwise extensive differences that set Sidaba rGyalrong and Horpa-Shangzhai apart, and the lack of clear synchronic motivations for the phenomena in question. The fact that the Ribu aspiration alternations are both more heterogeneous, coding transitivity as well as tense-aspect distinctions, and at the same time less productive, being residual morphological operations in both functions, suggests that it is Ribu that preserves a more archaic pattern.<sup>28</sup> This would make the creation of the reverse process of deaspiration, and the subsequent functional homogenization of aspiration manipulation, unique Horpa-Shangzhai innovations.

#### 4. Conclusion

In Tibeto-Burman languages generally, stem alternations of any kind are relatively infrequent, and the occurrence of formally opposed verb stems is even rarer. Puxi, the target language of this paper, is particularly striking with respect to the extensive

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<sup>28</sup> In accordance with Hetzron's principle of 'archaic heterogeneity' which states that 'when cognate systems in related languages are compared, the system that exhibits the most inner heterogeneity is likely to be the closest to the ancestral system (Hetzron 1976:93). For productivity as a gauge of relative age in cognate systems, see also Clackson 1994:21.

non-linear modifications its verbs undergo in stem formations, reaching probably a record-level of elaboration in Tibeto-Burman.

The tense-aspect marking aspiration inversion, surely the most noteworthy of the observed Puxi alternations, finds an exact parallel in Horpa. This discovery supplies crucial morphological evidence to the Horpa-Shangzhai sisterhood, already quite transparent from an inspection of their core vocabularies, and establishes the phenomenon as a common Horpa-Shangzhai trait. Wider comparisons conducted in this paper reveal the existence of partial rGyalrongic analogues not only to the Horpa-Shangzhai aspiration alternations, but also to the Puxi tonal alternations and ablaut missing in the documented Horpa dialects.

Shared patterns of inflectional morphology, especially idiosyncratic ones, have always been valued as indicators of common linguistic history, since they are highly resistant to contact influences, and the chances of duplication (Hoenigswald 1960: §13.4.2.1) are minimal. In her insightful study, Nichols (1996:48-56) points out that in applying the comparative method to a group of languages, the first step is to assume their genetic relatedness on the strength of primarily morphological evidence of the INDIVIDUAL-IDENTIFYING type, whose ‘probability of multiple independent occurrence among the world’s languages is so low that for practical purposes can be regarded as unique and individual’. I would like to suggest that the intra-rGyalrongic parallelisms in the verb-stem alternations under study constitute precisely such individual-identifying evidence which, in so far as they seem to be absent elsewhere in Qiangic or even in Tibeto-Burman, is diagnostic of an intimate relationship unique to the rGyalrongic subgroup, reflecting the morphological endowment from Proto-rGyalrong, the direct ancestor shared by rGyalrong, Lavrung, as well as Horpa-Shangzhai.

rGyalrongic linguistics has hitherto been largely equated with the study of Situ rGyalrong (especially its Ma’erkang dialect), with the other rGyalrongic languages and dialects unduly eclipsed. I hope to have shown in these case studies that there is much to learn in the diverse peripheral rGyalrongic dialects, particularly as they yield vital clues already obscured in Situ rGyalrong, to the extraordinarily intricate grammatical archetype, which we are just beginning to piece together.

## Abbreviations

|            |               |             |                 |              |              |
|------------|---------------|-------------|-----------------|--------------|--------------|
| <b>1</b>   | first person  | <b>2</b>    | second person   | <b>AOR</b>   | aorist       |
| <b>DAT</b> | dative        | <b>DETR</b> | detransitivizer | <b>ERG</b>   | ergative     |
| <b>EV</b>  | evidential    | <b>FUT</b>  | future          | <b>INTR</b>  | intransitive |
| <b>IMP</b> | imperative    | <b>IMPF</b> | imperfective    | <b>IMPFT</b> | imperfect    |
| <b>NEG</b> | negator       | <b>OR</b>   | orientation     | <b>PF</b>    | perfective   |
| <b>PRG</b> | progressive   | <b>PT</b>   | past            | <b>REFL</b>  | reflexive    |
| <b>Q</b>   | interrogative | <b>S</b>    | singular        | <b>TR</b>    | transitive   |

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