

AN INTERNAL RECONSTRUCTION OF TIBETAN STEM ALTERNATIONS¹

By GUILLAUME JACQUES
CNRS (CRLAO), EHESS

ABSTRACT

Tibetan verbal morphology differs considerably from that of other Sino-Tibetan languages. Most of the vocalic and consonantal alternations observed in the verbal paradigms remain unexplained after more than a hundred years of investigation: the study of historical Tibetan morphology would seem to have reached an aporia. This paper proposes a new model, explaining the origin of the alternations in the Tibetan verb as the remnant of a former system of directional prefixes, typologically similar to the ones still attested in the Rgyalrong languages.

1. INTRODUCTION

Tibetan verbal morphology is known for its extremely irregular conjugations. Li (1933) and Coblin (1976) have successfully explained some of the vocalic and consonantal alternations in the verbal system as the result of a series of sound changes. Little substantial progress has been made since Coblin's article, except for Hahn (1999) and Hill (2005) who have discovered two additional conjugation patterns, the *l*- and *r*- stems respectively.

Unlike many Sino-Tibetan languages (see for instance DeLancey 2010), Tibetan does not have verbal agreement, and its morphology seems mostly unrelated to that of other languages. Only three morphological features of the Tibetan verbal system have been compared with other languages. First, Shafer (1951: 1022) has proposed that the *a/o* alternation in the imperative was related to the *-o* suffix in Tamangic languages. This hypothesis is well accepted, though Zeisler (2002) has shown that the so-called imperative (*skul-tshig*) was not an imperative at all but a potential in Old Tibetan. Her observation does not disprove Shafer's hypothesis, but implies that a parallel semantic shift from potential to imperative took place independently in Tibetan and Tamangic.

Second, Huáng (1997) has proposed that the Tibetan past-tense *-s* suffix was cognate with past-tense *-s* suffixes in various languages, including Rgyalrong and Jingpo. Though some of the forms she compares are probably unrelated (in particular in languages that lose final consonants like Qiang), the comparison is most certainly valid for the *-s* suffix in Rgyalrong and Tibetan.

Third, Jacques (2010) has suggested that the irregular *a/o* alternation in the verb 'to eat' *za, zos* was an indirect trace of personal agreement in Tibetan. This idea was independently proposed by Sprigg in the early 1980s but never published according to van Driem (2011).

The rest of the verbal morphology is opaque and unlike anything found in the other Sino-Tibetan languages. The aim of this paper is to examine the potential origins of these opaque alternations. First, we study in detail a few sound laws that are necessary in order to perform the internal reconstruction of the Tibetan verbal system. Second, we use these sound laws to

¹ The author wishes to thank Nathan Hill and two anonymous reviewers for comments on this paper.

Table 1. Presyllable mergers in Tibetan

| Japhug | Meaning | Old Tibetan | Pre-Tibetan |
|---------|---------|-------------|-------------|
| kārtsyy | leopard | gzig | *gV/dV-dzik |
| qazo | sheep | g.yang | *gV/dV-jaŋ |
| qaliaŋ | eagle | glag | *gV/dV-lak |

Table 2. Examples of Tibetan voiced fricatives corresponding to voiced affricates in other languages

| Meaning | Tibetan | Japhug Rgyalrong | Lolo-Burmese |
|---------|---------------|-------------------------------|------------------------------------------|
| to eat | za < *dza | ndza | *dza ² (Bradley 1979) |
| bridge | zam < *dzam | ndzom < *ndzam | *dzam ¹ |
| dew | zil < *dzil | | *ʔ-dzi ² (Matisoff 2003: 187) |
| burning | gzhob *[gzop] | ɣndzɣβ < *kndzɔp ⁴ | |
| smell | < *gV-dzop | | |

investigate all the possible proto-forms for the affixes and alternations in the verbal system. Third, we propose a series of hypotheses to interpret the reconstructed prefixes.

2. PRE-TIBETAN PHONOLOGY

This paper builds on the sound laws discovered by Li Fang-Kuei and other authors, summarised by Hill (to appear). While I fully accept all the sound laws presented in that paper, four additional laws have to be added here.²

2.1. Vowels in presyllables

As acknowledged by many authors including Matisoff (2003), the pre-initial consonants in Tibetan come from earlier presyllables that we transcribe with an inserted schwa. These presyllables in turn originate from full syllables with distinct vocalism, which is still partially preserved in Rgyalrong cognates:

The examples in Table 1 show that pre-Tibetan *gV/dV-³ corresponds both to Japhug *qa-* and *ku-*: both the vowel contrast and the uvular/velar contrast have been neutralised.

Therefore, a form such as *btang* ‘to send, past’ would have to be reconstructed *bə-taŋ in pre-Tibetan, and *bV-taŋ at an even earlier stage, where *V represents any of {*a *e *i *u}. As we will see, an *o vocalism in the presyllable causes the *a* of the root to change to *o*, so that *bo- cannot be reconstructed here.

2.2. Voicing contrast in presyllables

Since there is no voicing contrast in the pre-initial position in Old Tibetan, the stops *b-*, *d-* and *g-* that can appear in this position can be reconstructed either as voiced or unvoiced.

² In this paper, Tibetan is transliterated in accordance with the Wylie system, while the reconstruction is given in an IPA-based transcription. Wylie differs from IPA in the following ways: (a) *sh- zh- c- j-* transcribe the alveolo-palatals *[ç] *[ʒ] *[tç] *[dʒ]; (b) The apostrophe ‘-’ marks homorganic prenasalisation in clusters and a voiced fricative *[β], *[ʁ] or *[ɣ] when occurring before a vowel; (c) *y-* represents *[j] and *ng-* is a digraph for *[ŋ]; (d) Final voiced stops *-b -d -g* were probably realized as unvoiced stops in phrase-final position; and (e) Voiced stops *b- d- g-* occurring as first elements of a cluster with an unvoiced obstruent as the second element were unvoiced, so that *bt-* for instance probably represents *[pt].

³ According to Saskya Pandita’s generalisation (see Hill 2011), the preinitial *g-* and *d-* in Old Tibetan were in complementary distribution. The dental and velar presyllables have merged as *g-* before dentals and as *d-* before labials and velars.

⁴ This noun meaning ‘burning fire’ is an irregular nominal form of *ndzɣβ* ‘to burn’, the anticausative of *tɣβ* < *tɕɔp ‘burn tr.’ The *γ-* corresponds to the regular *ku-* nominalising prefix.

Therefore, the form *btang* could theoretically come from either $*pə-taŋ$ or $*bə-taŋ < *pV-taŋ$ or $*bV-taŋ$. Since no Tibetan-internal data can distinguish between the two even if they ever existed, we represent both with a capital letter $*BV-$.

2.3. Voiced affricates to voiced fricatives

As was suggested indirectly by Simon (1929: 30) and Li (1933: 144), the Tibetan voiced fricatives $z-$ and $zh-$ [z] generally come from earlier voiced affricates. These fricatives are in quasi-complementary distribution with the affricates $dz-$ and $j-$ [dz] (which almost only occur after nasals and $r-$), and comparative evidence shows that they correspond to voiced affricates in other languages:

Moreover, we observe many cases of alternation between the affricate $ts(h)-$ and $z-$ or $c(h)$ [tʃ] and $zh-$ [z] in the verbal conjugations, in paradigms of verbs as in Table 3. These alternations between voiced and unvoiced obstruents are explained in section 3. They are accounted for better if we suppose a change from $*dz- > z-$ and from $*dz-$ to $zh-$ than the reverse.

There is only one known case of alternation between $s-$ and $z-$: *sub* ‘to wipe’ and its intransitive derived form *zub* ‘to be wiped out, destroyed’. This exception is discussed in section 2.4.

In two cases, voiced fricatives do not come from affricates:

1. The $zh-$ coming from a palatalised lateral $*lj-$, as in *zho* < $*ljo$ ‘curd’ (corresponding to Japhug *tx-lu* ‘milk’). This is referred to as ‘Benedict’s law’ in Hill (2011).
2. The $zl-$ cluster, which comes from earlier $*sl-$, with voicing of the fricative. The $sl-$ cluster in Tibetan comes from earlier $*slh-$.

There is no reason to reconstruct voiced fricatives at the pre-Tibetan stage.⁵

2.4. Prenasalised obstruents in pre-Tibetan

More controversially, the voiced stops of Old Tibetan come at least in part from ancient prenasalised stops. These ancient prenasalised stops naturally have to be distinguished from the prenasalised stops found in Old Tibetan and many modern dialects, which are transcribed with the pre-initial ṽ , a letter that is variously transcribed as ‘-,ḥ- or $v-$ (sometimes incorrectly called ‘*a-chung*’ in some circles). Evidence from modern dialects suggests that it represented homorganic prenasalisation, but a few Tibetologists disagree with this interpretation (see Hill 2009 in particular). We will transcribe the prenasalisation as ‘-’ in this paper, following the general transcription of Old Tibetan.

The claim that some plain voiced stops come from prenasalised stops⁶ is supported by comparative evidence: the plain voiced stops of Tibetan sometimes correspond to prenasalised stops or affricates in languages such as Japhug Rgyalrong.

Table 3. Alternations between affricates and voiced fricatives in Tibetan verbal paradigms

| Meaning | Present | Past | Future | Imperative |
|-----------|---------------------|--------------------|-----------------|------------------|
| to put in | ‘dzud $*[ndzʊt]$ | btsud $*[ptsʊt]$ | gzud | tshud |
| to close | ‘dzum(s) $*[ndzum]$ | btsums $*[ptsums]$ | gzum (btsum) | tshum(s) |
| to put in | ‘jug $*[ndzʊk]$ | bcug $*[ptcʊk]$ | gzhug $*[gzʊk]$ | chugs $*[tʰʊks]$ |

⁵ For further examples of this changes, see Hill (manuscript).

⁶ We do not claim however that all voiced stops in Old Tibetan originate from pre-Tibetan prenasalised stops.

Table 4. Simple voiced obstruents in Tibetan corresponding to prenasalised stop/affricates in Japhug

| Tibetan | Pre-Tibetan | Meaning | Japhug |
|------------|-----------------|---------|---------------------------------------------------------------------------------|
| <i>zam</i> | *dzam < *ndzam | bridge | ndzom < *ndzam |
| <i>dgu</i> | *Də-ŋgu/*Gə-ŋgu | nine | ku-ŋgut < *(kə)-t-ŋgu, the -t is analogical to the numeral ‘eight’ kūrcaṭ |
| <i>dug</i> | *ndug | poison | ṭṣ-ndṣṣ < *(t)-ndək |

Table 5. Examples of intransitivisation with voicing alternations in Tibetan

| Intransitive | | | Transitive | | | | |
|--------------|------|--------------|------------|-------|--------|------------|---------|
| Present | Past | Meaning | Present | Past | Future | Imperative | Meaning |
| ‘bye | bye | to be opened | ‘byed | phyes | dbye | phyes | to open |
| ‘gum | gum | to die | ‘gums | bkums | dgum | khums | to kill |

However, the clearest evidence for this reconstruction is the well-known voicing alternation related to transitivity that has been discussed by most specialists of Sino-Tibetan, including Conrady (1896), Pulleyblank (1973), Sagart (1999, 2003) and LaPolla (2003).

In Tibetan, we find pairs of verbs which present such alternation, though the details are quite complex. Typically, the intransitive form has a voiced initial, while its transitive counterpart has an unvoiced initial in the past and imperative stems and a voiced initial in the present and future stems.

Pulleyblank (1973) observed that the ‘- prefix (ɦ- in his notation) was ‘particularly associated with the formation of intransitive verbs, ɦgrib-ba ‘grow dim’ from grib ‘shadow’, ɦgrogs-pa ‘be associated with’ from grogs ‘friend, associate.’ He concluded that a cognate voicing *ɦ- prefix (his phonetic interpretation for the letter ‘-’) existed in Chinese, and changed transitive verbs into intransitive ones, in pairs such as in Chinese in pairs such as 别 bjet ‘to take leave’ vs. pjet ‘to separate’. However, the Tibetan forms he cited are not examples of intransitivisation, but rather a denominal ‘- prefix (possibly cognate to the Japhug denominal prefix *nu-*, as in *rxvo* ‘song’, *nu-rxvo* ‘to sing’).

Furthermore, we argue in section 4 that the voicing alternation found in the present and future stems of transitive verbs is unrelated to that of intransitive verbs and to the presence of the ‘- prefix; only the alternation between intransitive and transitive past stems are discussed here.

There is clear evidence that the voiced counterpart in these pairs of verbs originally had a prenasalised initial, not a plain voiced one. There are two languages in which nasality is still observable. First, in Rgyalrong languages, we find a cognate morphological process: the anticausative prenasalisation (Jacques 2008: 84–5).⁷ Anticausative verbs are derived from transitive verbs by changing their initial stop/affricate into the corresponding prenasalised consonant. This process was until recently still partially productive, since it applies to one loanword: the verb *χṭṣ* ‘scatter’ in Table 6 was borrowed from Tibetan *gtor*. This borrowing is of critical importance, as it proves beyond doubt that the directionality of the derivation is from transitive to anticausative, rather than vice versa.

⁷ These alternations are unrelated to the causative *su-* / *suṣ-* / *z-* prefix, which is still productive in Japhug and other Rgyalrong languages.

Table 6. Examples of anticausative prenasalisation in Japhug

| Transitive | Meaning | Intransitive | Meaning |
|------------|-----------------------|--------------|------------------------------|
| ftʂi | to melt (tr) | ndʒi | to melt (itr) |
| pryt | to break (tr), to cut | mbryt | to break (itr), to be cut |
| qyt | to separate | NGyt | to be separated |
| ʒtvr | to scatter | ɛndyr | to be scattered |

Table 7. Nasal attrition cycle

| | Stage | Sound changes |
|---|----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Prenasalisation of anticausative verbs by a nasal prefix | *Np(h) > *mb *Nt(h) > *nd *Nk(h) > *ŋg |
| 2 | General change from prenasalised stops/affricates to voiced stops/affricates | *mb- > *b- *nd- > *d- *ŋg- > *g- *nV-mb- > *nV-b- *nV-nd- > *nV-d- *nV-ŋg- > *nV-g- |
| 3 | Re-creation of prenasalised stops/affricates (Old Tibetan) | *nV-b- > *nə-b- > 'b- [mb] *nV-d- > *nə-d- > 'd- [nd] *nV-g- > *nə-g- > 'g- [ŋg] *nV-p- > *nə-p- > 'ph- [mp ^h] *nV-t- > *nə-t- > 'th- [nt ^h] *nV-k- > *nə-k- > 'kh- [ŋk ^h] |
| 4 | Voicing of prenasalised voiceless obstruents (in the Baima dialect) ^a | 'ph- [mp ^h] > mb- 'th- [nt ^h] > nd- 'kh- [ŋk ^h] > ŋg- |

Note: ^aAncient 'ph-, 'th- 'kh- clusters from Old Tibetan become prenasalised mb- nd- ŋg- in Baima (Zhang 1997: 133–4).

Second, in Chinese, Sagart (1993, 1999: 74–8) argued that the intransitive forms had a nasal prefix *N-, not a *f- as Pulleyblank (1973) had proposed, based on Old Chinese loanwords in Hmong-Mien, where the prenasalisation is still visible.

Although a phonetic change from plain voiced to prenasalised is not impossible altogether, the simplest explanation for these facts is that Rgyalrong and Old Chinese have preserved the original prenasalised forms, while Tibetan and other languages innovated by merging the voiced and prenasalised series, which were still distinct in Old Chinese. The alternation between prenasalised stops and unvoiced stops in anticausative prenasalisation probably originates from a nasal prefix: unvoiced stops were voiced by the nasal.

If pre-Tibetan prenasalised stops became plain voiced, then the Old Tibetan prenasalised 'b- 'd- 'dz- 'j- 'g- *[mb, nd, ndz ndz ŋg] had a distinct origin. I propose that preinitial '-, like other preinitial consonants, originates from a presyllable with nasal initial *nV-, similar to the many nā- prefixes in modern Japhug Rgyalrong.⁸

The loss and recreation of prenasalised stops in Tibetan was a chain shift that we can call the nasal attrition cycle (the fourth stage only applies to the Baima dialect of Tibetan). This cycle took place in other Sino-Tibetan languages, in particular the Lavrung dialects (Lai Yunfan manuscript).

The problematic example sub 'to wipe' vs. zub 'to be wiped out' with a s/z alternation mentioned in section 2.3 can be explained with the following derivation:

⁸ In this language one finds five unrelated *nw-* prefixes: denominal, permansive, aorist/imperative 'towards west' prefix, autobenefactive-spontaneous, applicative. It is therefore plausible that Tibetan ' - also had multiple independent origins.

1. *Nsup > *ndzup with automatic epenthetic *-d-
2. *ndzup > *dzup (stage 2)
3. *dzup > zub (stage 3)

The reconstruction model presented in this paper, therefore, can also account for examples like this one. Note that some authors (such as Beckwith 1996) have argued for the reverse hypothesis, that is, that in verb pairs, the voiced one is the basic form and the unvoiced one derived by some devoicing process, but this theory is clearly refuted by the Rgyalrong data.

The first three sound laws presented in this section are relatively straightforward, and although the fourth one is slightly more controversial, it is consistent with the data, and provides a basis for explaining many opaque alternations.

3. INTERNAL RECONSTRUCTION OF THE TIBETAN VERBAL SYSTEM

The study of Tibetan verbal morphology is hampered by the fact that the conjugations given in the dictionaries are notoriously unreliable, and that the verbal alternations in Old Tibetan texts and modern Tibetan languages have not been systematically studied. Although we now have Hill (2010b), a compilation of all the verbal alternations as attested in the extant dictionaries, no systematic reconstruction of the Tibetan verbal system will be possible until modern dialects and ancient texts have been exhaustively investigated.

3.1. *The eight basic paradigms*

Coblin (1976: 60) distinguishes eight main regular paradigms, which we present in Table 8. Σ is the verb stem, and $\Sigma(o)/\Sigma(e)$ indicate the -o- and -e- grade of some roots. We retain the traditional names of the categories, though they can be misleading.⁹ Many paradigms found in the dictionaries cannot be included in any of these categories, mainly because the final -s is extremely unstable in the spelling of verbs and because the imperative form is often analogically remade after the past stem. These peculiarities will not be taken into account in the following discussion.

Table 9 illustrates each of these eight conjugations.¹⁰ Conjugations 6–8 additionally have voicing alternation: voiced stops (or *z-* *zh-* coming from *ndz- *ndz-) in the present and future stems, and unvoiced stops (or *ts(h)-* *c(h)-*) in the past and imperative stems. Outside of these three conjugations, only one verb classified as belonging to conjugation 1 by Coblin (1976) has voicing alternation: *'dud btud bdud thud* ‘tp bend down’; Coblin includes it in conjugation 1 because of the future form *bdud*. However, other sources (see Hill 2010b) give the form *gdud* expected for a conjugation 6–8 verb.

Not all verbs in these conjugations however have voicing alternation. Some such as *'drid*, *brid/drid* ‘to cheat’ and *'drad/'brad*, *brad* are r- stems, and the *d-* and *b-* are secondary (Hill 2005; Jacques 2010b). Other have voiced stops in all four stems (such as ‘to pull’ in the table above). However, we barely find any verb in conjugations 6–8 with an unvoiced stop in each stem. In the data classified by Coblin, we only find five such examples (given in Table 10 with the paradigms in Coblin 1976).

⁹ See Zeisler (2004) for a detailed study of their actual use in Old Tibetan and several modern dialects.

¹⁰ Note that aspiration is not phonemic in Old Tibetan (see Hill 2010a), so that the aspiration alternations observed in the verbal paradigms can be neglected.

Table 8. The eight conjugations

| | Present | Past | Future | Imperative |
|---|-------------------|----------------|---------------|----------------|
| 1 | N- Σ | b- Σ -s | b- Σ | Σ (o)-s |
| 2 | N- Σ (e)-d | b- Σ -s | b- Σ | Σ (o)-s |
| 3 | Σ (e)-d | b- Σ -s | b- Σ | Σ (o)-s |
| 4 | g/d- Σ (o) | b- Σ -s | b- Σ | Σ (o)-s |
| 5 | g/d- Σ (o) | b- Σ | g/d- Σ | Σ (o)-s |
| 6 | N- Σ (e)-d | b- Σ | g/d- Σ | Σ (o)-s |
| 7 | N- Σ | b- Σ -s | g/d- Σ | Σ (o)-s |
| 8 | N- Σ (e)-d | b- Σ -s | g/d- Σ | Σ (o)-s |
| 9 | N- Σ (e)-d | b- Σ -s | g/d- Σ | Σ (o)-s |

Table 9. Examples of the eight Tibetan conjugations

| | Present | Past | Future | Imperative | Meaning |
|---|---------|--------|-------------|------------|-----------------|
| 1 | 'khyigs | bkyigs | bkyig | khyigs | to bind |
| 2 | 'khrud | bkrus | bkru | khrus | to wash |
| 3 | sems | bsams | bsam | soms | to think |
| 4 | gshom | bshams | gsham/bsham | shoms | to put in order |
| 5 | gtong | btang | gtang | thongs | to send |
| 6 | 'debs | btab | gdab | thobs | to cast |
| 7 | 'gum | bkums | dgum | khums | to kill |
| 8 | 'dren | drangs | drang | drongs | to pull |

The first two verbs have the expected present *'bral* and *'brid* in other sources (see Hill 2010b: 244). The forms in *phr-* in the present and future stems are clearly analogical to non-alternating verbs, hence their deviation from the 6–8 standard conjugation. In the case of *'thor* and *'thub*, their future forms *gtor* and *gtub* are taken for the present stem of the related verbs *gtub* 'to cut' and *gtor* 'to scatter'. The only real counterexample in *'khrol* 'to play (an instrument)', but this verb is clearly derived from *rol* 'to play, to enjoy' (cf. the derived noun *rol-mo* 'music'), so that *k(h)-* is a prefixal element, which may explain the absence of voicing alternation. The eight conjugations can be rewritten in Table 11, with Φ (for $\varphi\omega\nu\eta$) instead of Σ , indicating the voiced alternating stem:

3.2. Interpretation of the paradigms

Of all four stems, the imperative stem is the simplest. It is normally prefixless but has an -s suffix, with an -o- grade due to a proto *-o suffix according to Shafer (1951: 1022). Its origin in pre-Tibetan can be either Σ (o)-s < * Σ -o-s or Σ (o)-s < * Σ -s-o, the second hypothesis being more probable.

The past stem is relatively simple: it always has a b- prefix, and in most conjugations also an -s suffix. It can be reconstructed as *BV- Σ -(s). The -s, as Huang (1997) has suggested, is related to the -s past tense suffix found in Rgyalrong languages.¹¹ For the future, we have three categories: b- Σ , g/d- Σ and g/d- Φ . b- Σ can come from *BV- Σ . g/d- Σ has two possible origins (*DV- Σ or *GV- Σ). As for the future g/d- Φ , one has to find a way to explain the voicing alternation as in *b-kum-s* 'kill.PST' vs. *dgum* 'kill.FUT'. Since we argued in section 2 that voiced stops in Tibetan come in part from prenasalised stops, a possible explanation would be that not *DV-/GV-, but *DVN-/GVN- with final nasal should be reconstructed in pre-Tibetan. The final nasal changes the initial unvoiced stop into a prenasalised one, which then becomes a plain voiced stop in conformity with the general law. Thus, supposing that the

¹¹ In situ it mainly appears in intransitive third person singular forms, while in Japhug and Zbu it is restricted to transitive open syllable stem 1sg > 3 and 2 sg > 3 forms.

Table 10. Conjugation 6–8 verbs without voicing alternation in Coblin (1976)

| Present | Past | Future | Imperative | Meaning |
|---------|---------------|--------------|---------------------|----------------------------|
| 'phral | phral | dpral, dbral | phrol | to separate |
| 'phri | phris | dpri, dbri | phri(s) | to lessen, to diminish |
| 'khrol | bkrol, dkrol | dkrol | khrol | to play, to cause to sound |
| 'thor | btor | gtor | thor, 'thor | to be scattered |
| 'thub | btubs, 'thubs | gtub | gtubs, 'thub, btubs | to cut to pieces |

Table 11. The eight conjugations, including voicing alternation

| | Present | Past | Future | Imperative |
|---|-------------------|----------------|---------------|----------------|
| 1 | N- Σ | b- Σ -s | b- Σ | Σ (o)-s |
| 2 | N- Σ (e)-d | b- Σ -s | b- Σ | Σ (o)-s |
| 3 | Σ (e)-d | b- Σ -s | b- Σ | Σ (o)-s |
| 4 | g/d- Σ (o) | b- Σ -s | b- Σ | Σ (o)-s |
| 5 | g/d- Σ (o) | b- Σ | g/d- Σ | Σ (o)-s |
| 6 | N- Φ (e)-d | b- Σ | g/d- Φ | Σ (o)-s |
| 7 | N- Φ | b- Σ -s | g/d- Φ | Σ (o)-s |
| 8 | N- Φ (e)-d | b- Σ -s | g/d- Φ | Σ (o)-s |

form of the prefix was *gVN- (among the four possible ones, since *G represents either *g or *k and *D either *d or *t), *dgum* would be from *də-gum < *gə-gum < *gV-ŋgum < *gV-ŋkum < *gVN-kum.

For the present stem, the situation is even more complex: we have six possible forms. Σ (e)-d has no prefix and comes from pre-Tibetan * Σ -d, the e-grade being caused by the final -d as explained by Coblin (1976). N- Σ and N- Σ (e)-d can be plainly reconstructed with a *nV- prefix that changes to simple prenasalisation as explained in section 2. The present forms N- Φ and N- Φ (e)-d, with the additional voicing, have to be reconstructed with a final nasal *nVN-: as in the future stem g/d- Φ , the final nasal voices the unvoiced stop of the root. For instance, the present stem *'debs* [ndeps] 'to cast' is from *nə-dep-s < *nV-dap-d < *nV-ndap-d < *nV-ntap-d < *nVN-tap-d.

The form g/d- Σ (o) with o-grade for -a- stems is more difficult to reconstruct. Shafer (1951: 1024) reconstructed the prefix in this form as *go-: the vowel in the prefix influences the stem vowel by vowel harmony, as in the case of the *-o suffix in the imperative. Coblin (1976) instead proposed that present stems had *g- and future stems *d-. Both *g- and *d- merged as g- before dentals and palatals and as *d- before velars and labials, but *g- caused vowel rounding, presumably because it originally comes from a labiovelar.

In this paper, we will favour Shafer's (1951) solution, which is more economical. The imperative forms have already shown that *o could induce vowel harmony across syllables. On the other hand, even if labiovelar stops seem to have existed in pre-Tibetan,¹² we have no proof that they could induce vowel rounding when not in direct contact with the main vowel. Even if we accept Shafer's idea of a former *o vocalism in the lost syllable, *go- is not the only possible reconstruction for this prefix: *ko-, *do- and *to- are also equally possible (in our notation *Go-/Do-).

The possible origins for the conjugation prefixes are therefore shown in Table 12. In conclusion, we reconstruct seven distinct prefixes:

*nV-: present stem of conjugation 1–2.

*BV-: future stem of conjugations 1–4.

*BV-: past (not necessarily related to the previous one)

¹² In etyma such as *gos* 'clothes' < *g^o as, *gro.ma* 'Potentilla Anserina' < *gr^oa-.

Table 12. Possible origins for the conjugation prefixes

| | Present | Past | Future | Imperative |
|---|----------------|---------|------------------|------------|
| 1 | *nV-Σ | | *BV-Σ | *Σ-s-o |
| 2 | *nV-Σ-d | | | or |
| 3 | *Σ-d | | | *Σ-o-s |
| 4 | *Go-Σ or *Do-Σ | | | |
| 5 | | *BV-Σ | *GV-Σ or *DV-Σ | |
| 6 | *nVN-Σ-d | | *GVN-Σ or *DVN-Σ | |
| 7 | *nVN-Σ | *BV-Σ-s | | |
| 8 | *nVN-Σ-d | | | |

*GV- or *DV-: future stem of conjugation 5

*Go- or *Do-: present stem of conjugations 4–5

*GVN- or *DVN-: future stem of conjugations 6–8

*nVN-: present stem of conjugations 6–8

These prefixes do not remind immediately of anything familiar in the other Sino-Tibetan languages, but in any case if we reconstruct the prefixes of the present/future stems of conjugations 6–8 as *GVN- / *DVN- and *nVN-, there is no need to suppose that the present and future are somehow derived from the intransitive verbs as some authors have suggested (Durr 1950). The anticausative verbs are derived from the transitive ones by a voicing prefix of nasal origin *N- which does not need to be related to either *nVN- or *GVN-/DVN-.

4. ANALYSIS

In the previous section, we reconstructed the vowel and consonantal alternations of the Tibetan conjugations back to pre-Tibetan using the established sound laws. The proto-forms obtained are extremely ambiguous, and any attempt at etymologising them is likely to remain speculative. However, this work shows that the complex alternations found in Old Tibetan probably come from a simpler system with plain concatenative morphology.

Although the exact origin of the tense, aspect and modality (TAM) prefixes reconstructed in the previous sections is not entirely clear, we can propose a possible model for their genesis. In the languages of Tibetan Sichuan commonly grouped under the label ‘Qiangic’, but also in neighbouring Tibetan languages, we find a system of derivational prefixes indicating both direction (in the case of movement and concrete action verbs) but also TAM (see for instance the systems described in Sun 2000). The systems of directional prefixes, although typologically similar, are probably convergent developments due to contact (Chirkova in press), derived from earlier locative nouns. As an example, in Japhug Rgyalrong, Table 13 shows the correlation with locative nouns (Jacques 2008: 244). The transparent relationship between directional prefixes and the corresponding independent forms, and the lack of good correspondences across ‘Qiangic’ languages, strongly suggest that they are secondary developments.

Some of the prefixes are used with a specific TAM value for all verbs. *pu-* ‘down’ is used in past imperfective (on this particular topic see Lin 2011), *ku-* in present and *pu-* in constative forms. The semantic relationship between the TAM value and the etymological directional meaning is not entirely clear.

Additionally, non-movement verbs have intrinsic directional prefixes which are used to form all tenses except the plain non-past (the -a- in the Aorist is a transitivity marker). The intrinsic prefix is not always entirely arbitrary, but only very vague general tendencies can be proposed to predict the prefix (or prefixes) that are compatible with a given verb (see Table 14).

Table 13. Directional prefixes in Japhug and their corresponding locative nouns and adverbs

| Prefix (aorist) | Prefix (non-past) | Meaning | Locative noun | Locative adverb |
|-----------------|-------------------|------------|-------------------|-----------------|
| tx- | tu- | up | -taṣ ‘upper side’ | atu |
| pu- | pju- | down | -pa ‘down side’ | aki |
| ly- | lu- | upstream | | alo |
| thu- | chu- | downstream | | athi |
| ky- | ku- | east | | aku |
| nu- | ju- | west | | andi |

Table 14. Intrinsic directional prefixes in some Japhug verbs

| Verb root | Meaning | Direction | Aorist | Imperfective |
|-----------|----------|-----------|-----------|--------------|
| tshi | to drink | east | ky-a-tshi | ku-tshi |
| sat | to kill | down | pu-a-sat | pju-sat |
| mtō | to see | down | pu-a-mtō | pju-mtym |
| mbi | to give | west | nu-a-mbi | ju-mbi |
| ndza | to eat | up | tx-a-ndza | tu-ndze |
| si | to die | down | pu-si | pju-si |

The verbal stem alternations found in Tibetan could well be the remnant of a system of directional prefixes similar to the one found in Japhug (though most probably independently innovated).¹³ We can propose speculative Tibetan-internal etymologies for these prefixes based on locative nouns or locative ‘case’ clitic markers:¹⁴

*nV- (present): locative clitic *na*.

*BV- (future): *pha-* ‘the other side’ (in compounds like *pha-rol* ‘the other side’, *pha-ri* ‘the mountain on the other side’).

*BV- (past): *pha-* ‘the other side’, or perhaps the cognate of the root *-pa* ‘downside, under’ found in Rgyalrong and other ‘Qiangic’ languages such as Tangut. This root is not attested in Tibetan, however.

*GV- or *DV- (future): *tha-* ‘down’ (in compounds like *tha-ma* ‘last, weak, vile’)

*Go- or *Do- (present): *go* ‘interval’, *khog* ‘entrails, inside’, *thog* ‘upper side’.

*GVN- or *DVN- (future): *steng* ‘upper side, over’, or the comitative clitic *dang*.

*nVN- (present): *nang* ‘inside’.

The irregular past tense *s-* prefix of the verb ‘to give’ (present *shyin*, past *byin*) could be the last remnant of a formerly more widespread present tense *s-* prefix, originating from pre-Tibetan *sV- or *sVN- (since the initial of *byin* is voiced, the prefix could have a final nasal, only other examples of *s-* could decide which is the correct hypothesis).

It is impossible to prove the correctness of these ‘etymologies’, as many other additional ones could be equally probable. This list only shows that we can easily find in the Tibetan vocabulary locative nouns or locative clitics whose phonology would fit the necessary correspondences. The phonological attrition that has affected the presyllables in Tibetan is so considerable that retrieving the etymology of the prefixes is by no means a straightforward task.

An interesting coincidence between Tibetan and Japhug is the fact that the present prefixes *nV- and *Go-/Do- resemble the constative *ju-* and present *ku-* prefixes (from

¹³ Note that our hypothesis is entirely distinct from Wolfenden’s (1929: 38) claim that Tibetan prefixes were former ‘directive’ prefixes; his use of the term ‘directive’ is difficult to interpret, but seems to be related to voice alternations rather than to actual directional markers.

¹⁴ The ‘case’ markers of Tibetan probably originate from nouns ultimately.

Table 15. Parallels between pre-Tibetan and Japhug

| | Tibetan | Pre-Tibetan | Japhug |
|---------|---------|--------------------|-----------------------|
| Present | gsod | *Go-sat *Do-sat | ku-sat |
| Past | bsad | *BV-sat-s | pu-a-sat ^a |

Note: ^a -a- is the transitive direct 3 > 3 marker. Note that *pu-* here is not the past imperfective *pu-* prefix, but the lexical prefix of the verb ‘to kill’ in the aorist form (see Table 13). ‘to kill’ belongs to the class of verbs that select ‘down’ as their intrinsic lexical prefix in the conjugation.

*ko- according the general Japhug sound law, see Jacques 2004: 232–4), and the past *BV-prefix is similar to Japhug *pu-*. If we take the verb ‘to kill’ (Tibetan *gsod bsad gsad sod*, Japhug *sat*), two forms in the paradigm are similar (see Table 15).

However, it should be highlighted that the form of the ‘down’ prefix in Japhug *pā-* is not similar to that of other Rgyalrong languages (for instance *ne-* in Tshobdun, see Sun 2000: 181) and could be a relatively recent innovation. Therefore, it may well be that the similar-looking forms between Japhug and our pre-Tibetan reconstruction are coincidental resemblances.

As a typological parallel, several modern Tibetan languages are known to have developed a system of directional prefixes marking TAM, though probably due to the influence of non-Tibetan languages. Sun (2007: 335–6) mentions Zhongu and Kami, two dialects in direct contact with ‘Qiangic’ languages (Qiang and Pumi, respectively). For instance, Zhongu has two imperative prefixes *mə-* and *zə-* derived from Old Tibetan *ma(r)-* ‘down’ and *ya(r)-* ‘up’ respectively.

5. CONCLUSION

The hypothesis that Tibetan stem alternations go back to an earlier system of directional prefixes is not the only logical possibility to explain the origin of this system, but this hypothesis suggests the rich and irregular morphology of the Tibetan verb that is not necessarily of proto-Sino-Tibetan origin, but could be a relatively recent innovation, perhaps not even shared with Bumthang and Tamang. Previous studies have already proposed that the verbal morphology of Old Tibetan was a late development (see Biemeier 2004), but the possible mechanisms by which these alternations could have been created have never been explicitly described before.

This hypothesis also has four non-trivial implications for comparative Sino-Tibetan: First, verbs with voicing alternation between present and past have an intrinsic voiceless stem. For instance, the basic stem of *byed, phyed* ‘to open’ is the voiceless variant /pye/, not /bye/. Second, the prenasalisation ‘- is unrelated to the voicing alternation. Third, in verbs with a/o alternation in the present stem, the *-a-* grade is always the original one. Fourth, the conjugational *b-*, *d-/g-* and ‘- prefixes are late innovations and can be neglected for comparative purposes.

CRLAO/CNRS

EHESS

131 boulevard Saint-Michel,

75005 Paris, France

Email: rgyalrongskad@gmail.com

REFERENCES

- BAXTER, WILLIAM H. III., 1992. *A Handbook of Old Chinese Phonology*, Berlin: Mouton de Gruyter.
- BECKWITH, CHRISTOPHER, 1996. 'The morphological argument for the existence of Sino-Tibetan', *Pan-Asiatic Linguistics: Proceedings of the Fourth International Symposium on Languages and Linguistics*, 8–10 January, 1996, vol 3, Bangkok: Institute of Language and Culture for Rural Development Mahidol University at Salaya, 812–26.
- BIELMEIER, ROLAND, 2004. 'Shafer's proto-West Bodish hypothesis and the formation of the Tibetan verb paradigms', Anju Saxena (ed.), *Himalayan Languages, Past and Present*, Berlin: Mouton de Gruyter, 395–412.
- BRADLEY, DAVID, 1979. *Proto-Loloish* (Scandinavian Institute of Asian Studies Monograph Series, 39), London: Curzon Press.
- CHIRKOVA, KATIA, in press. 'What defines Qiang-ness: A look from Southern Qiangic languages', *Language and Linguistics*.
- COBLIN, WELDON SOUTH, 1976. 'Notes on Tibetan verbal morphology', *T'oung Pao* 52, 45–70.
- CONRADY, AUGUST, 1896. *Eine Indochinesische Causativ-Denominativ-Bildung und ihr Zusammenhang mit den Tonaccenten*, Leipzig: Otto Harrassowitz.
- DELANCEY, SCOTT, 2010. 'Towards a history of verb agreement in Tibeto-Burman', *Himalayan Linguistics* 9, 1–39.
- DRIEM, GEORGE VAN, 2011. 'Tibeto-Burman subgroups and historical grammar', *Himalayan Linguistics Journal* 10, 31–9.
- DURR, JACQUES A., 1950. *Morphologie du Verbe Tibétain*, Heidelberg: Carl Winter, Universitätsverlag.
- HAHN, MICHAEL, 1999. 'Blags und verwandtes (miscellanea etymologica tibetica, VI)', in Helmut Eimer (ed.), *Studia Tibetica et Mongolica*, Swistall-Odendorf: Indica et Tibetica Verlag, 123–125.
- HILL, NATHAN, 2005. 'The verb 'bri 'to write' in Old Tibetan', *Journal of Asian and African Studies* 68, 177–182.
- HILL, NATHAN, 2009. 'Tibetan <h> as a plain initial and its place in Old Tibetan phonology', *Linguistics of the Tibeto-Burman Area* 32, 115–140.
- HILL, NATHAN, 2010a. 'An overview of Old Tibetan synchronic phonology', *Transactions of the Philological Society* 108, 110–125.
- HILL, NATHAN, 2010b. *A Lexicon of Tibetan Verb Stems as Reported by the Grammatical Tradition*, Munich: Bayerische Akademie der Wissenschaften.
- HILL, NATHAN, 2011. 'An inventory of Tibetan sound laws', *Journal of the Royal Asiatic Society of Great Britain & Ireland (Third Series)* 21, 441–457.
- HILL, NATHAN, manuscript. *Tibeto-Burman *dz- > Tibetan z- and related proposals*. In preparation for a Festschrift.
- HUANG, BUFAN, 1997. 原始藏緬語動詞後綴*-s的遺跡 yuánshìzàngmiǎn yǔ dòngcí hòuzhì *-s de yíjì (Traces of the Proto-Tibeto-Burman verbal *-s suffix). *Minzú yǔwén* 1, 1–17.
- JACQUES, GUILLAUME, 2004. *Phonologie et Morphologie du Japhug (rGyalrong)*, Ph.D. dissertation, Université Paris VII.
- JACQUES, GUILLAUME, 2008. 嘉絨語研究 *Jiāróngyǔyánjiū* (A study on the Rgyalrong language), Beijing: Minzu chubanshe.
- JACQUES, GUILLAUME, 2010a. 'A possible trace of verb agreement in Tibetan', *Himalayan Linguistics Journal* 9, 41–49.
- JACQUES, GUILLAUME, 2010b. 'Notes complémentaires sur les verbes à alternance 'dr-/br en tibétain', *Revue d'Etudes Tibétaines* 19, 27–29.
- LAI YUNFAN, manuscript. *A Tentative Reconstruction of Proto-Lavrung Initials*.
- LAPOLLA, RANDY, 2003. 'An overview of Sino-Tibetan Morphosyntax', in Graham Thurgood & Randy J. LaPolla (eds.), *The Sino-Tibetan Languages*, London: Routledge, 22–42.
- LI FANG-KUEI, 1933. 'Certain phonetic influences of the Tibetan prefixes upon the root initials', *Bulletin of the Institute of History and Philology* 6, 135–157.
- LIN YOUJING, 2011. 'Perfective and imperfective from the same source: directional "down" in rGyalrong', *Diachronica* 28, 54–81.
- MATISOFF, JAMES A., 2003. *Handbook of Proto-Tibeto-Burman*. Berkeley, CA: University of California Press.
- PULLEYBLANK, EDWIN, 1973. 'Some new hypotheses concerning word families in Chinese', *Journal of Chinese Linguistics* 1, 111–125.
- SAGART, LAURENT, 1993. 'New views on Old Chinese phonology (Review of Baxter 1992)', *Diachronica* 10, 237–260.
- SAGART, LAURENT, 1999. *The Roots of Old Chinese*, Amsterdam: Benjamins.
- SAGART, LAURENT, 2003. 'Sources of Middle Chinese manner types: Old Chinese prenasalized initials in Hmong-Mien and Sino-Tibetan perspective', *Language and Linguistics* 4, 757–768.
- SHAFER, ROBERT, 1951. 'Studies in the morphology of the Bodic verbs II', *Bulletin of the School of Oriental and African Studies* 13, 1017–1031.
- SIMON, WALTER, 1929. 'Tibetisch-Chinesische Wortgleichungen, ein Versuch', *Mitteilungen des Seminars für Orientalische Sprachen* 32, 157–228.
- SUN, JACKSON T.-S., 2000. 'Parallels in the verb morphology of Sidaba rGyalrong and Guanyinqiao in rGyalrong', *Language and Linguistics* 1, 161–190.
- SUN, JACKSON T.-S., 2007. 'Perfective stem renovation in Khalong Tibetan', in Roland Bielmeier & Felix Haller (eds.), *Linguistics of the Himalayas and Beyond*. Berlin: Mouton de Gruyter, 323–340.
- WOLFENDEN, STUART N., 1927. *Outlines of Tibeto-Burman Linguistic Morphology: With Special Reference to the Prefixes, Infixes and Suffixes of Classical Tibetan and the Languages of the Kachin, Bodo, Naga, Kuki-Chin and Burma Group*, London: Royal Asiatic Society.

- ZEISLER, BETTINA, 2002. 'The development of temporal coding in Tibetan: some suggestions for a functional internal reconstruction. (1): Unexpected use of the "imperative" stem in Old Tibetan and Themchen (Amdo Tibetan)', in Henk Blezer (ed.), *Tibet, Past and Present. PIATS 2000: Tibetan Studies: Proceedings of the Ninth Seminar of the International Association for Tibetan Studies*, Leiden: Brill, 441–453.
- ZEISLER, BETTINA, 2004. *Relative Tense and Aspectual Values in Tibetan Languages. A Comparative Study*, Berlin: Mouton de Gruyter.
- ZHANG JICHUAN, 1997. 'Particularités phonétiques du baima', *Cahiers de linguistique – Asie Orientale* 26, 131–153.