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# Aspirated and Unaspirated Voiceless Consonants in Old Tibetan*

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Although Tibetan orthography distinguishes aspirated and unaspirated voiceless consonants, various authors have viewed this distinction as not phonemic. An examination of the unaspirated voiceless initials in the Old Tibetan Inscriptions, together with unaspirated voiceless consonants in several Tibetan dialects confirms that aspiration was either not phonemic in Old Tibetan, or only just emerging as a distinction due to loan words. The data examined also affords evidence for the nature of the phonetic word in Old Tibetan.

Key words: Tibetan orthography, aspiration, Old Tibetan

## 1. Introduction

The distribution between voiceless aspirated and voiceless unaspirated stops in Written Tibetan is nearly complementary. This fact has been marshalled in support of the reconstruction of only two stop series (voiced and voiceless) in Proto-Tibeto-Burman. However, in order for Tibetan data to support a two-way manner distinction in Proto-Tibeto-Burman it is necessary to demonstrate that the three-way distinction of voiced, voiceless aspirated, and voiceless unaspirated in Written Tibetan is derivable from an earlier two-way voicing distinction. Those environments in which voiceless aspirated and unaspirated stops are not complimentary must be thoroughly explained.

The Tibetan script distinguishes the unaspirated consonant series *k*, *c*, *t*, *p*, *ts* from the aspirated consonant series *kh*, *ch*, *th*, *ph*, *tsh*. The combination of letters *hr* and *lh* are not to be regarded as representing aspiration but rather the voiceless counterparts to *r* and *l* respectively (Hahn 1973:434). According to the prescriptive rules of Written Tibetan, some initials of a consonant cluster may only be followed by unaspirated stops:

* I follow the Wylie transliteration of Tibetan with the exception that the letter ཝ is transliterated in the Chinese manner as *v* rather than the confusing <'>. I would like to thank Chasing Bugang, Prof. Guillaume Jacques, Prof. Jay Jasanoff, Prof. Zev Handel, Michael Radich, Prof. Hoong Teik Toh, and Yudrup Tsomu for various kinds of help in improving this paper.

*d-* : *dk*, *dp*
*g-* : *gc*, *gt*, *gts*
*b-* : *bk*, *bc*, *bt*, *bts* (note: **bp* does not occur)
*s-* : *sk*, *st*, *sp*, *sts* (note: **sc* does not occur)
*r-* : *rk*, *rt*, *rts* (note: **rp* and **rc* do not occur)
*l-* : *lk*, *lc*, *lt*, *lp* (note: *lp* occurs only in the word *lpags* 'skin' as the second member of a compound, **lts* does not occur)

Other initials may only be followed by the corresponding aspirated consonants:

*m-* : *mkh*, *mch*, *mth*, *mtsh* (note: **mph* does not occur)
*v-* : *vkh*, *vch*, *vth*, *vph*, *vtsh*

Only voiced consonants appear as finals. Therefore, the only environment in which the aspirated and unaspirated voiceless consonants are both allowed is at syllable onsets; otherwise, they are in complementary distribution.

The orthography of the Old Tibetan inscriptions published by Li Fang-Kuei and W. South Coblin appear to conform entirely to these conventions (1987). However, other old Tibetan texts, for example the *Old Tibetan Annals*, contain such spellings as *gchig* 'one', and *bchug* (past of *vjug* 'put, install') (Wang and Bsod nams skyid 1988:13-33).[1] This phenomenon has not been researched in detail. The aspirate variants after prefixes (such as *gchig-*) always refer to the corresponding word spelled in the more conventional manner (*gcig*); i.e. the possibility of this distinction is not exploited phonemically. Therefore, the prescriptive rules of Written Tibetan can be taken at face value for the purposes of this essay.

## 2. The case for the sub-phonemic status of aspiration

Robert Shafer appears to have been the first to put forth the conjecture that aspiration in Tibetan was originally non-distinctive:

> Old Bodish [Written Tibetan] has only three types of absolute initials; surd [voiceless] unaspirated, surd aspirated, and sonant [voiced] (unaspirated), if we accept the dictionaries as authority. But a survey of the words with absolute

[1] Both *gchig* and *gcig* occur 13 times. The spelling *bchug* occurs seven times, whereas *bcug* occurs six. The locations of these words can be conveniently found using the index published by Yoshiro Imaeda & Tsuguhito Takeuchi (1990).

> initial surd unaspirated stops or affricates in Jäschke's [1881] dictionary shows them to be loan-words, suspect, or probably words from a West Bodish dialect for which the Old Bodish forms had not been found. Of the latter words, prefixes may have dropped. (1950/51:722-723)

Shafer does not discuss the counterexamples. Paul Benedict suggests that Proto-Tibeto-Burman had no phonemic distinction between aspirated and unaspirated voiceless stops. In contrast to Shafer, he does discuss a few specific Tibetan counterexamples.

> The significant contrast in the stop series is that of voiced and unvoiced consonants. Aspiration is clearly of a subphonemic order; unvoiced stops are aspirated in initial position, unaspirated after most or all prefixes. […] Tibetan does have a number of words with initial unaspirated surd [voiceless] stop [sic], and thus aspiration after stops is phonemic here; yet these exceptional forms are unquestionably of secondary origin. Included in this group are: (a) words with initial *kl-*, e.g. *klu* 'serpent-demon', *klong* 'wave' (Tibetan lacks the cluster *khl-*); (b) reduplicated forms, e.g. *kyir-kyir* 'round, circular', *kyom-kyom* 'flexible', *kru-kru* 'windpipe' (West T[ibetan]), *tig-tig* 'certainly', *pi-pi* 'fife, flute' (West T[ibetan] 'nipple; icicle'); (c) forms which interchange with prefixed or reduplicated forms, e.g. *kog-pa ~ skog-pa* 'shell, rind, bark', *pags-pa ~ lpags* (in comp.) 'skin, hide, bark', *kug ~ kug-kug* 'crooked', *kum-pa ~ kum-kum* 'shriveled'; and (d) loan-words and forms based on modern dialects, e.g. Ladakhi *ti* 'water' (a loan word from the Kanauri Group). The more important words not included here are *ka-ba* 'pillar', *kun* 'all' < T[ibeto-]B[urman] **kun*, *krad-pa* 'shoe', *pang* 'bosom, lap', *pag* 'brick', *pad-ma* 'leech' < T[ibeto-]B[urman] **r-pat*, *par* 'form, mould', *pus-mo ~ pis-mo* 'knee' < T[ibeto-]B[urman] **put*. (1972:20)

In his review of Benedict, W. South Coblin responds with hesitation:

> [W]e may express some curiosity concerning whatever "*less* important words" of this type may exist. Specifically, exactly what percentage of the unaspirated surd-initial [voiceless initial] words in W[ritten]T[ibetan] which do not fall into Benedict's first three categories can clearly be identified as members of the fourth, i.e. as loan-words and late forms from modern dialects? Has Benedict examined all of this material; and if so, on what basis and using what procedures has he decided in each individual case? Surely nothing short of a full-fledged study utilizing all available lexicographical sources can ever

> answer these questions; and for doubters such as this reviewer they *must* be answered. (1972/73:637, emphasis in original)[2]

Benedict's parenthetical comment regarding words beginning with the cluster *kl-*, that "Tibetan lacks the cluster *khl-*" (1972:20), must be taken as shorthand for one of the following two arguments. Since Written Tibetan makes no contrast between *kl-* and *khl-*, the initial cluster *kl-*, which Benedict finds problematic, can be regarded as diachronically deriving from an earlier **khl-*. However, the initial cluster *kl-* could just as easily have other origins. Alternatively, the nonexistence of a contrast between *kl-* and *khl-* could be understood synchronically as motivation for structurally identifying <kl-> with /khl-/. However, the fact that there is not a structural contrast between *kl-* and *khl-* does not argue *per se* for a representation of <kl-> as either /kl-/ or /khl-/, but rather for disregarding the distinction as irrelevant. An analysis of <kl-> as /kl-/ does have the advantage of agreeing with the tradition of Tibetan orthography. Benedict presents no positive evidence for either the diachronic or synchronic explanation. Apparently, the only merit of these explanations is their utility in furthering Benedict's generalization.

Fortunately, a satisfactory account of the initial cluster *kl-* is otherwise available. Several authors have argued that this *k-* is an allomorph of the present and future prefix *g-* for the two verbs with voiceless lateral initials *klog* (pres.), *blags* (past), *klag* (fut.), *lhogs* (imp.) 'read' (de Jong 1973)[3] and *klub*, *blubs*, **klub*, **lhubs* 'bedecken' (Eimer 1987). This leads Michael Hahn to speculate that "[i]n den tibetischen Graphemen, die das Subskript *-l-* enthalten — also *kl-*, *gl-*, *bl-*, *zl-*, *rl-*, und *sl-* — ist das Subskript *-l-* in Wirklichkeit das Radikal [in the Tibetan graphemes which contain the subscript *-l-*, i.e. *kl-*, *gl-*, *bl-*, *zl-*, *rl-*, and *sl-*, the subscript *-l-* is actually the radical]" (1999:123). If Hahn is correct then category (a) as well as many other morphological mysteries may be relegated to the dustbin. Unfortunately Hahn goes on to say "[w]ir können und wollen diese Hypothese hier selbstverständlich nicht für alle bekannten tibetischen Wörter mit dem Subskript *-l-* beweisen [we neither can nor want to prove this hypothesis for all known Tibetan words with the subscript *-l-*]" (1999:123). Hopefully another scholar

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[2] Miller (1974:197) expresses the same reservation.

[3] Sagart suggests that Tibetan *klog*, *blags*, *klag*, *lhogs* is a loanword from Chinese 讀 *dú* < *duwk* < **ᵃlok* (1999:209-210). He argues that, because the Chinese word originally meant something like 'say aloud, repeat', the Tibetan meaning 'read' is "secondary" (ibid 209) and therefore indicative of a loan. In fact, the normal term for 'to read silently' in modern Tibetan is *deb lta* (literally 'look [at a] book', surely calqued on Chinese 看書 *kàn shū*). In contrast, the Tibetan verb *klog*, *blags*, *klag*, *lhogs* means 'say aloud, repeat' and is typically used of recitation from religious books. An independent semantic shift from 'recite, repeat' to 'read out loud' in both languages is hardly incredible. Finally, the most obvious reason why Tibetan *klog*, *blags*, *klag*, *lhogs* cannot be a loan from Chinese is that the root vowel in Tibetan is *-a-* and in Chinese is *-o-*.

will undertake just such an investigation.[4]

## 3. The case for the phonemic contrast of aspiration

In contrast to Benedict's view, Stephen Beyer suggests that the distinction between aspirated and unaspirated voiceless consonants reflected in the Tibetan script is indeed phonemic at syllable onset (1992:66). He gives the following minimal pairs:

| | |
|---|---|
| *ka* 'pillar' | *kha* 'mouth' |
| *ko* 'leather' | *kho* 'he' |
| *ting* 'cup' | *thing* 'scatter!' |
| *tal* 'quick' | *thal* 'dust' |
| *pag* 'brick' | *phag* 'pig' |
| *tse* 'basket' | *tshe* 'life' |

Beyer's case is sufficient for Classical Tibetan (leaving the term vague). Indeed, a peek through any of the common dictionaries (e.g. Jäschke 1881, Das 1902) will turn up many voiceless unaspirated initials. On the other hand, of Beyer's six examples with unaspirated initials all but one are technological (easily borrowed); in contrast, the examples with aspirated initials include a body part, a personal pronoun, a farm animal, and even life itself. Although one may consequently suspect with Bielmeier that "most of the entries are loans or onomatopoetic words" (1988:15), every such example must be provided with an etymology, showing it to be a loanword, or arguing for it as onomatopoetic, before being disregarded in the investigation of historical phonology. In addition, at the synchronic level of so-called Classical Tibetan, loan vocabulary cannot be dismissed in the analysis of phonology, just as in contemporary English there can be no doubt that /v/ is a phoneme although before the introduction of foreign loans with initial [v-] it occurred as a positional allophone of /f-/ (Brunner 1965:154-155, §192).

## 4. Evidence from Old Tibetan inscriptions

Fewer loanwords will be found in Old Tibetan than in Written Tibetan. Also, the spelling of Written Tibetan can sometimes be misleading. For example, the common words *rin-chen* 'precious' and *dkon-mchog* 'the three refuge jewels' are recorded as

[4] Jakob Dempsey presented a paper entitled "*l*- clusters in early Tibetan," at the 25th Annual International Conference on Sino-Tibetan Languages and Linguistics (Berkeley, California, October 1992). Unfortunately his work has not been published.

having been previously spelled *rind-cen* and *dkond-cog* (Inaba 1954, qtd. in Miller 1955: 482). Therefore, before turning to "all available lexicographical sources" (Coblin 1972/73: 637), the investigation should begin with Old Tibetan sources. Below are all examples of unaspirated voiceless initials found in Li & Coblin's (1987) study of Old Tibetan inscriptions, excluding transcriptions of Chinese and proper nouns.

K
*glan-ka* – 'censure, blame'
*chad-ka* – 'punitive levy, fine'
*kun* – 'all'
*kol* (=*khol* [?]) – 'servant'
*kyang* – 'even, also'
*kyi* – 'genitive'
*kyis* – 'instrumental'
*chang kyur* – 'collectively, in aggregate (?)'; perhaps terminative of *chang khyu* – 'to assemble, gather, an assemblage or gathering'
*kyong* – 'quarrel (?)'
*klas pa* – a verb whose meaning seems to be 'beyond, further than'

The most startling members of this group are those with a grammatical function: *-ka*, *-kyi*, *-kyis*, *-kyang*. It is surprising that they have not been commented upon previously. Perhaps the following analysis has been tacitly assumed: these postpositional enclitics are not in fact words and therefore their initial consonants do not qualify as 'initials' as such.

The form *klas* belongs to Benedict's category (a) and thus has already been accounted for. However, one might mention *en passant* that because *klas* apparently only occurs in the expression *mthas-klas* 'limitless', it may perhaps be considered a bound morpheme, and so here too *k-* is not word-initial. The remaining words are *kol*, *kyur*, *kyong*, and *kun*. The syllable *kol* 'servant' occurs in the compound *gnam-kol* 'servants of heaven'. As an independent word it is aspirated as *khol* 'servant'.[5] The syllable *kyur* also occurs word interally. The word *kyong* 'quarrel (?)' is difficult to account for. It occurs in a very fragmentary context,[6] and is otherwise unattested. The word *kun* 'all' will be returned to below.

In contrast to *k-*, a great deal of basic vocabulary begins with the consonant *kh-*, e.g. *kha* 'mouth', *khams* 'realm', *khong* 'heart', *khong* 'he', *khyab* 'pervade', *khri* 'ten

[5] This word is likely a loanword from Old Turkic *kul* 'slave' (Clauson 1972:615).

[6] The context of this word is: *-- mar ---------- kha kyong du / --- r ------ su --- rdo ----- dang ---- bcas pa*

thousand', *khral* 'tax'.

C
*dkar-cag* = *dkar-chag* – 'register, list'
*bdag-cag* – 'we'
*thams-cad* – 'all' (variant *thams-chad*)[7]
*phan-cad* – 'toward, until' (variant *phan-chad*)
*phyin-cad* – 'latter, afterward' (variant *phyin-chad*)
*man-cad* – 'below, on the lower side of, on the other side of, as far as' (variant *man-chad*)
*yan-cad* – 'above, in the upper part'
*tshun-cad* – 'from … hitherwards' (variant *tshun-chad*)
*zhan-lon yi-ge-can* – 'rank of an official'
*sems-can* – 'sentient being'
*ci* – 'what; any, whatever' (interrogative and indefinite pronoun)
*kha-cig* – 'together'
*nam-cig* – 'ever, always'
*cing* – gerundive particle
*cu* = *bcu* – 'ten'
*pyang-cub* (variant of *byang-chub*) – 'wisdom, bodhi'
*zhal-ce* – 'judgment'
*ces* – quotative particle
*cong* – 'bell' (loan for Chinese *zhong* 鐘 [*tsyowng*])

All of these syllables are either enclitic particles or the second syllable of a disyllabic word, except for *cong* (which is a loanword), *cu*, and *ci*. The word *cu* occurs in the phrase *drug-cu* 'sixty' where the omission of *b-* is perhaps to be assigned to the same phenomenon as the omission of *g-* from *gsum* and *gnyis* in compound. This example thus belongs to Benedict's class (c). The word *ci-* will receive further attention shortly.

In contrast to *c-*, a great deal of basic vocabulary begins with the consonant *ch-*, e.g. *chag-ga* 'border', *chags* 'love (v.)', *chad* (past of *vchad*) 'cut', *chab-srid* 'government', *chu* 'water', *chung* 'small', *che* 'great', *chos* 'dharma'.

[7] Hahn explains the *cad* of *thams-cad* with the rule *s* + *ch* → *sc*, an example of internal *sandhi* having become external *sandhi* (1973:430). The presentation of other examples of *cad* and the variant *thams-chad* argue in favor of a synchronic rule # + *c* → *ch* where *cad* is considered underlying.

T
*khong-ta* – ‘they’
*yon-tan* – ‘excellence, achievement’
*tam* – alternative and interrogative suffix
*tu* – terminative particle
*te* – gerundive particle
*to* – finite verb ending

Each of these syllables is either an enclitic particle or the second syllable of a disyllabic word.

In contrast to *t-*, a great deal of basic vocabulary begins with the consonant *th-* e.g. *thang* ‘authority, rights’, *thabs* ‘rank, title’, *thabs* ‘way, means’, *thar* ‘pass through, be released’, *thild* ‘center, principal part’, *thugs* ‘mind’, *thub* ‘able’, *thog-ma* ‘foremost, first’, *thob* ‘get, obtain’.

P
*pa* – a nominal suffix
*pu-nu-po* – ‘clansman, kinsman’ (with the variant *phu nu*)
*bu tsha rgyud peld* (= *vphel*, to increase) – ‘sons and/or male descendants’
*bu tsha peld* (= *vphel*, to increase) – ‘sons and/or male descendants’
*po* – a nominal suffix
*pyang-cub* (variant of *byang chub*) – ‘wisdom, bodhi’
*pyugs* (= *phyugs*) – ‘cattle’

Half of these syllables are either an enclitic morpheme or the second syllable of a disyllabic word. Although not included in the index as such, *pyugs* too occurs in a disyllabic compound word *nor-pyugs* ‘wealth’. The intial of *pyang-cub* is devoiced as well as unaspirated. This form is difficult to explain. The letters *p* and *b* look quite similar; it is possible that Li & Coblin have misread the letter, that epigraphical damage has lead to an original *b* looking like a *p*, or that the the original inscription intended a *p* but carved it poorly. Wang Yao (1982) reads *byang-chub* but he may well be tacitly correcting rather than faithfully reading the inscription. In the word *pu-nu-po* a *p-* does occur as an initial. This word is also spelled with initial aspiration and the two instances of *pu-nu-po* are loci of textual problems; the first Hugh Richardson (1952) and Wang (1982) read *bu*, the second Richardson reads *bu* while Wang has *phu*.

In contrast to *p-*, a great deal of basic vocabulary begins with the consonant *ph-*, e.g. *pha* ‘father’, *phan-cad* ‘toward, until’, *phan* ‘to be useful’, *phab* (past of *vbebs*) ‘fall’, *pham* (past of *vpham*) ‘be defeated’, *phal* ‘usual, common’, *phul* (past of *vbul*)

'give', offer, *pho* 'male', *phyag* 'hand', *phyi* 'behind, later', *phyug* 'rich', *phye* (past of *vbye*) 'to separate', *phyed* (past of *vbyed*) 'open', *phyogs* 'side, direction', *phra* 'small', *phrad* (future of *vphrad*) 'meet', *phri* (past of *vphri*) 'lessen, diminish', *phrin-las* 'deed, act'.

Ts

*-tsa* [Li & Coblin (1987) give a reference to *bu-tsha*, but of all instances of *bu-tsha* listed in the appendix and checked against the text, none is written *bu-tsa*]

*ji-tsam* – 'whatever'

*tsam-du* – 'as much as, up to, to the extend that'

*tsam-zhig* – 'a little, just a, merely'

*tse* (variant of *tshe*) – 'time, generation'

*sku-tse rabs-re* – 'each generation'

The *tsam* in *ji-tsam* is not word-initial. Both *tsam-du* and *tsam-zhig* are used postpositionally. In the phrase *sku-tse rabs-re* the syllable *-tse* occurs as the second member of a compound. Otherwise *tse* occurs three times in the fragmentary inscription in front of Zhwavi Lha-khang "*cho-byi tshe-gsum-dang mdav myĭ-tse-gsum-dang tse-tse-gsum-dang*… / The generations of the Cho byi, and three generations of the Mdav myĭ and three generations of the Tse and …" (Li & Coblin 1987:274). Perhaps in two of these instances as well *tse* can be explained as internal to a compound word.

In contrast to *ts-*, a great deal of basic vocabulary begins with the consonant *tsh-*, e.g. *tshang-ba* 'complete, full, entire', *tshad* 'measure', *tshal* 'garden, grove, food', *tshun-cad* / *tshun-chad* 'from … hitherward', *tshul* 'manner, way'.

## 5. Analysis of the Old Tibetan data

According to the rules of Written Tibetan spelling, the only position in which aspirated and unaspirated initials are not in complementary distribution is at syllable-initial. By far the majority of occurrences of unaspirated voiceless initials in the Old Tibetan inscriptions are word-internal, either derivational suffixes or the second element of a compound. Aspiration should thus be regarded as occurring word-initially, and not syllable-initially. There is a very small number of exceptions:

*kun* – 'all'

*kyong* – 'quarrel (?)'

*ci* – 'what; any, whenever' (interrogative and indefinite pronoun)

*pu-nu-po* (with the variant *phu nu*) – 'clansman, kinsman'

*pyang-cub* (variant of *byang chub*) – 'wisdom, bodhi'
*tse* (variant of *tshe*) – 'time, generation'

The two words *pu-nu-po* and *tse* have variant aspirated spellings. Both *pu-nu-po* and *pyang-cub* are sites of textual problems. The variant *pyang* for *byang* is difficult to explain, and may represent an error in writing or in reading the inscription. The word *kyong* is of uncertain meaning and otherwise unattested.

Some morphemes with unaspirated voiceless initials have no aspirated voiceless counterpart (e.g. *-kyi*, *-cing*, *-tu*, *-pa*, *-tsam*, but not **-khyi*, **-ching*, **-thu*, **-pha*, **-tsham*), whereas some morphemes have both unaspirated and aspirated variants (*-ka*, *-cag*, *-cad*, and *-kha*, *-chag*, *-chad*) and finally some aspirated morphemes never permit of unaspirated variants (never **kams*, **cos*, **tabs*, **pyag*, **tsul*, but *khams*, *chos*, *thabs*, *phyag*, *tshul*). Those morphemes which occur exclusively word-internally are never aspirated, and syllables which occur word-initially are consistently aspirated; those which occur in both environments are inconsistently aspirated.

Ideally words in this last category would be consistently spelled as aspirated when word-initial and unaspirated when word-internal. Evidence for this tendency can be noticed (e.g. *tshe* 'life', *phel* 'increase', *khol* 'servant', but *sku-tse rabs-re* 'each generation', *bu-tsha-peld* 'sons and/or male descendants', *gnam-kol* 'sky servant'). However, often the fluctuation cannot be explained (*gnyis-ka* / *gnyis-kha* 'both', *thams-cad* / *thams-chad* 'all'). The use of aspirated spellings word-internally may be credited to a morphophonemic tendency in the orthography. Since these morphemes were most frequently spelled as aspirated, the aspirated spellings were generalized, despite the unaspirated pronunciation word-internally.

Two further considerations favor this analysis. This description of Tibetan prosody makes redundant the rule that imperative verb stems must be aspirated (as e.g. proposed by Beyer 1992:164-165). The imperative stem has no prefix, and thus the initial consonant of the root is aspirated by virtue of being the initial consonant of a word. Finally, word-initial and word-medial environment often produce distinct synchronic and historical effects on phonemes, another example from Tibetan being the development of syllable-initial *b-* in the Tibetan dialects. The Old Tibetan syllable *ba* in the modern central dialects is pronounced word-initially as a stop *ba* 'cow' [ba], but as a word-internal morphological ending it is pronounced as a glide *-ba* [wa].

The noun *thog* 'roof' can now be seen to be a phonetically conditioned variant of the *-tog* which occurs in *me-tog* 'flower,'[8] *lo-tog* 'harvest' (*lo* 'year'), *zhabs-tog*

[8] The *me* here is not to be connected with *me* 'fire'. Laufer points out that in old documents this word appears as *men-tog* and never has the spelling **mye* (1914:99). Backstrom reconstructs the Proto-Western-Tibetan form of this word as **mendok* based on Western Balti *mendok*,

'servant' (*zhabs* 'foot [honorific]'), *gser-tog* 'golden button' (*gser* 'gold'), *shing-tog* 'fruit' (*shing* 'tree'), perhaps with the broad meaning 'tip, end'. The verb *vthog*, *btogs*, *btog*, *thogs* 'to pick, pluck' would then appear to be a denominative. The syllable *thog* in the word *thog-ma* 'first' is also to be placed here.

## 6. The words *kun* and *ci*

The most curious examples of word-initial unaspirated voiceless stops in Old Tibetan are the common words *kun* 'all' and *ci* 'what; any, whenever'. Consequently their use in the Old Tibetan inscriptions is deserving of special comment.

Because *kun* 'all' generally occurs as a monosyllabic attributive adjective, one might consider it a sort of number suffix. If so, its deaspiration would be no more mysterious than *-cig* 'a, one'. However, in the Zhwavi Lha-khang inscription (c. 800-815) on line 25, the word *kun* 'all' is used as a noun and not as an attributive adjective. In this context therefore it could not be interpreted as an enclitic: "*yun-tu brtan zhĭng bde-bar-bya-ba-dang* / *kun-kyis shes-par-bya-bavĭ byir* / In order to cause that he shall eternally be secure and happy and to cause that all shall know of it" (Li & Coblin 1987: Tibetan 265, English 277). This use of *kun* has continued into Written Tibetan: "*kun-gyis mthong-bar vjav-vod dra-bas* / *steng-gi rnam-mkhav mdzes-par brgyan-pa-dang* / the sky above was ornamented beautifully with a net of rainbow light seen by all" (Bsod nams vod zer 1997:240). As a substantive one would expect this word to be aspirated (**khun*). Because this word would be most frequently seen unaspirated, the same morphophonemic tendency of the orthography, which has generalized aspirated spellings word-internally, in this case has likely generalized an unaspirated spelling to initial position. This analysis would be strongly supported if on occasion the spelling **khun* were attestable as a substantive. Perhaps future philological research will one day find such an attestation.

In contrast to most Tibetan grammatical affixes, *ci-* is a prefix rather than a suffix. This grammatical prefix appears necessarily in word-initial position. One would thus await an aspirated spelling of its initial. However, it is consistently spelled as unaspirated.

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Eastern Balti *mendok*, Purik *mendok* and Ladakhi *mentok* (1994:14, 65). He suggests that the presence of the *n-* is what devoiced the *d-* in Ladakhi (1994:14). However, in light of the Written Tibetan form, and the fact that *n-* is itself voiced, it seems more likely that Ladakhi is more archaic here, and instead the *-n* is what voiced the *t-* in the other dialects. Comparison with the Tamang word $^{3}$*mento* 'flower' (Mazaudon 2003:294) and the Japhug Rgyalrong word mɤntoʁ 'id.' (Guillaume Jacques, letter 6 Aug 2005) are also relevant. Perhaps the syllable *men* should be compared with *vphra-men* 'gilded silver' (cf. Dotson, in press). Why the word lost the *-n* in Written Tibetan is unexplained.

The fact that this prefixing morpheme is unaspirated just as so many suffixing morphemes are written unaspirated, indicates that like them it is phonetically treated as part of the preceding word. A parallel can be seen in the German prefix *ge-* (< Germanic **ga* < Indo-European **kom*). Ordinarily an Indo-European word-initial **k-* would be expected to give *h-* following Grimm's Law. For Verner's Law to have applied to this prefix (and give the attested *g-*) it must have been a proclitic, phonetically treated as part of the preceding word (cf. Quinlin 1991). The Tibetan prefix *ci-* since it is always written unaspirated should also be seen as a proclitic, phonetically treated as part of the preceding word. The grammatical prefix *ci-* is doubtless related to the prefix *ji-*, but a full examination of this puzzle would lead far afield.

## 7. Aspiration in the Tibetan dialects and Tibetan loanwords

The foregoing analysis suggests that Old Tibetan word-initial voiceless stops are aspirated, and that syllable initials not appearing at the beginning of a word are unaspirated. However, morphemes which frequently occur word-initially are also often spelled with an aspirated onset when they occur word-internally. This circumstance is to be credited to a morphophonemic tendency in the script, by which a morpheme is spelled in only one fashion regardless of its position in a word. The fact that in such cases the pronunciation was unaspirated in spite of the spelling can be seen with reference to the Tibetan dialects, and Tibetan loanwords into other languages. In many dialects and in loanwords present in other languages, word-internal morphemes which are spelled in Written Tibetan with aspirated initial onset are pronounced unaspirated.

In the Zho-ngu dialect "[a]spirated initials are generally de-aspirated word-internally" (J. Sun 2003:793), as the following examples show:

/nɐtsɐ/ <na.tsha> 'illness'
/tʂʰətso/ <khri.tsho> 'ten thousand'
/pətsɐ/ <bu.tsha> 'son'
/metu/ <me.thog>[sic me.tog] 'flower'
/akə/ <a.khu> 'paternal uncle'

/tʃʰəta/ <chu.thag> 'water-barrel strap'
/ʁɛta/ <khal.thag> 'leather string'
Cf. /tʰɐχa/ <thag.pa> 'rope' (J. Sun 2003:793)

A similar phenomenon occurs in the Reb-gong, Rdo-sbis, and Ba-yan-mkhar Amdo dialects.

> 原讀成送氣音的（詞或詞素），在合成詞的第二音節中有的常變讀成同部位的不送氣音。
> [Some (words or morphemes) originally pronounced as aspirates are pronounced, by a regular change, as the corresponding unaspirates in the second syllable of compounds]. (Hua 2002:31, cf. 32 and 34)

The relevant examples from Hua's study are as follows:

> Reb-gong (Tóngrén 同仁) (Hua 2002:31, Written Tibetan equivalents mine)
> <vkhol> khu "熱[hot]," <chu-vkhol> tɕhə ku "溫泉[hot spring],"
> <chu> tɕhə "水[water]," <rngul-chu> hŋu tɕə "汗水[sweat],"
> <thag> thak "距離[distance]," <tshe-thag> tshe tak "壽命[life span],"
> <tshang> tshaŋ "家[family], 窩[nest]," <bzav-tshang> za tsaŋ "家屬[family member]."
>
> Rdo-sbis (Xúnhuà 循化) (Hua 2002:32, Written Tibetan equivalents mine)
> <che> tɕhe "大[big]," <mthe-che> the tɕe "拇指[thumb],"
> <vthag> thak "磨[grind, rub]," <rang-thag> raŋ tak "(水)磨[millstones],"
> <khung> khoŋ "窟窿[hole]," <rtug-khung> htə koŋ "肛門[anus],"
> <tshang> tshaŋ "家[family], 窩[nest]," <khyim-tshang> tɕhən tsaŋ "家庭[family], 人家[people, someone]."
>
> Ba-yan-mkhar (Huàlóng 化隆) (Hua 2002:34, Written Tibetan equivalents mine).
> <tshang> tshaŋ "家[family], 窩[nest]," <bzav-tshang> za tsaŋ "家屬[family member]"
> <thag-pa> thak xwa "繩子[string]," <vphur-thag> fər tak "飛砣[flail (in the millitary sense)]"

In Lhasa dialect as recorded by Kun Chang and Betty Shefts (1965), second syllable deaspiration is completely regular:

> 4. *Ncham*$^{H}$
> <chams-pa> *chaNpa*$^{H\text{-}H}$ 'a cold' (n.p.)
> <mgul-chams> *qüNcʌm*$^{L\text{-}H}$ 'a cold' (p.) : <mgul> *qüü*$^{L}$ 'neck' (p.)
> 5. *Nchu*$^{H}$
> <mchu-to> *choto*$^{H\text{-}H}$ 'a birds beak; human lips; an elephant's trunk' (n.p.)
> <shal-mchu> *šééNcu*$^{L\text{-}H}$ 'human lips' (p.): <shal> *šɛɛ*$^{L}$ 'mouth' (p.) […]

13. *N̥thi*$^{L}$
    <vdri> *ʈhiwʌ*$^{L\text{-}H}$ ‘a question’ (n.p.), …
    <bkav-vdri> *qʌN̥ti*$^{H\text{-}H}$ ‘a question[’] (p.) <bkav> *qa*$^{H}$ ‘speech’ (p.) […]
14. *N̥thiiN*$^{H}$
    <vphrin> *ʈhiiN*$^{H}$ ‘a message’
    <rlung-vphrin> *luŋʈiiN*$^{H\text{-}H}$ ‘radio’: <rlung> *lɔɔ*$^{HF}$ ‘electric, electricity’ […]
15. *N̥thaŋ*$^{H}$
    <vphreng-ba> *ʈhaŋa*$^{H\text{-}H}$ ‘a rosary’ (n.p.)
    <mgul-vphreng> *qüüN̥taaN*$^{L\text{-}H}$ ‘a long necklace, usually of jade’ (p.):
        <mgul> *qüü*$^{L}$ ‘neck’ (p.)
    <rke-vphreng> *keN̥taaN*$^{H\text{-}H}$ ‘a long necklace, usually of jade’ (n.p.):
        <rke> *ke*$^{H}$ ‘neck’ (n.p.)
    <phyag-vphreng> *chaaN̥taaN*$^{H\text{-}H}$ ‘a rosary’ (p.):
        <phyag> *chaa*$^{HF}$ ‘hand’ (p.)
38. *NtshööN*$^{H}$
    <vtshon> *tshööN*$^{H}$ ‘paint’
    <rdo-vtshon> *tomtsööN*$^{L\text{-}H}$ (also *totsööN*$^{L\text{-}H}$) ‘paint made from stone’ :
        <rdo> *to*$^{L}$ ‘a stone’, […]
    <mar-vtshon> *maaNtsööN*$^{L\text{-}H}$ ‘colored butter’: *maa*$^{L}$ ‘butter’
    (Chang and Shefts 1965:35, n. and p. indicate different informants, Written Tibetan equivalents mine)

There is some controversy concerning whether Baima should be regarded as a Tibetan dialect, or an independent Tibeto-Burman language with a heavy loan influence from Tibetan (Zhang 1997, H. Sun 2003). Whatever the truth, it is worth noting that, in Written Tibetan words with a second syllable beginning with an aspirated consonant, the corresponding Baima word frequently has an unaspirated consonant in the corresponding position.

| Tibétain écrit | Baima | Français |
|---|---|---|
| a-khu | ɑʌ̀ kø˥ | ‘oncle paternel [paternal uncle]’ |
| gru-khug | tɕo˥ ko˥ | ‘angle, coin [angle, corner]’ |
| skyur-khu | ɕo˥ ko˥ | ‘soupe de légumes [a vegtable soup]’ |
| skar-chen | kɑ˥ tʃe˦ | ‘Étoile du berger (Vénus) [the evening star (Venus)]’ |
| sa-cha | s’a˥ tʃɑ˥ | ‘région [region]’ |
| rngul-chu | ŋi˥ tʃu˥ | ‘sueur [sweat]’ |
| lcag-thag | tʃɑʌ̀ tɑʌ̀ | ‘chaîne [chain]’ |
| lcags-thom | tʃɑ˥ to˦ | ‘louche en fer [iron ladle]’ |

| | | |
|---|---|---|
| snag-tsha | naˎ tsa˥ | ‘encre [ink]’ |
| lug-tshang | yˎ tsɔ˥ | ‘bergerie [sheep pen]’ |
| zangs-khro | sɔˎ tʃo˥ | ‘marmite [stockpot]’ |
| bya-phrug | ɕeˎ tʂu˥ | ‘petit oiseau [small bird]’ (Zhang 1997:143) |

However, Tibetan second syllable-initial aspirated consonants also have other correspondences in Baima.

| Tibétain écrit | Baima | Français |
|---|---|---|
| bu-tsha | po˥ zɑ˥ | ‘homme [man]’ |
| lha-khang | ɦɑˎ ɦɑˎ | ‘temple [temple]’ |
| mig-khung | n̥iˎ ɦo˥ | ‘orbite [eye socket]’ |
| kha-chems | k’aˎ ʒe˥ | ‘testament [testament]’ |
| kha-chu | k’ɑˎ ʒu˥ | ‘salive [saliva]’ |
| zheng-che | ʃeˏ ʒe˥ | ‘spacieux [spacious]’ |
| sgal-tshigs | giɛˎ zï˥ | ‘colonne vertébrale [spinal column]’ |
| khyi pho-khyi | tɕ’i˥ p’ɐˎ ʑi˥ | ‘chien mâle [male dog]’ |
| tshwa-khug | ts’a˥ uoˎ | ‘récipient à sel [salt-cellar]’ |
| sang-phod | s’aˎ ue˥ | ‘année prochaine [next year]’ (Zhang 1997:144-145) |

This complication is likely due to a difference among various layers of loaned vocabulary and cognate vocabulary (whether cognate through Old Tibetan or Tibeto-Burman).

In the Tibetan loanwords into the Japhug dialect of Rgyalrong,

> Dans les dissyllabes, on ne trouve aucun cas où l’initiale aspirée de la première syllabe en tibétain corresponde à une non-aspirée en japhug. Ces correspondances ne s’observent que dans les secondes syllabes des dissyllabes. [In disyllabic words, one finds no example of an aspirated initial in the first syllable of the Tibetan corresponding to a unaspirated initial in Japhug. These correspondences are observed only in the second syllable of disyllabic words.] (Jacques 2004:111)

Here are relevant examples excerpted from Jacques’ tables 65 and 66.

| groupe initial en tibétain | groupe initial en japhug | mot tibétain | signification en tibétain | mot japhug | signification en japhug |
|---|---|---|---|---|---|
| k- | k- | *ston-ka* | 'automne [autumn]' | ston-ka | id. |
| kh- | k- | *ljang-khu* | 'vert [green]' | ldʑaŋ-kɯ | id. |
| c- | tɕ- | *thams-cad* | 'complètement [completely]' | tham-tɕʏt | id. |
| ch- | tɕ$^{h}$- | *cham-ba* | 'rhume [the cold]' | tɕ$^{h}$om-ba | id. |
| ch- | tɕ- | *rgyan-cha* | 'décoration [decoration]' | ʁɟʏn-tɕa | id. |

Evidence from the Tibetan dialects and from Tibetan loanwords into other languages supports the view that Old Tibetan had word-initial aspiration, but all other syllables in a word would be unaspirated, even when the classical orthographic tradition spells them as aspirated.[9]

## 8. Evidence of Written Tibetan

Having explored the distribution of initial unaspirated voiceless consonants in the most archaic stratum of literature and in some modern dialects, it is appropriate to return to the counterevidence in the vocabulary of the written language at large as presented undifferentiated by the dictionaries. As noted previously, Benedict cited the following exceptions to the generalization that all voiceless absolute initials are aspirated:

> The more important words not included here are *ka-ba* 'pillar', *kun* 'all' < T[ibeto-]B[urman] **kun*, *krad-pa* 'shoe', *pang* 'bosom, lap', *pag* 'brick', *pad-ma* 'leech' < T[ibeto-]B[urman] **r-pat*, *par* 'form, mould', *pus-mo* ~ *pis-mo* 'knee' < T[ibeto-]B[urman] **put*. (Benedict 1972:20)

He later attempts to explain some of these:

> Note that these exceptional W[ritten]T[ibetan] forms (STC: 20) [i.e. Benedict 1972:20] generally have initial *p-*, also that W[ritten]T[ibetan] lacks the cluster

[9] Miller (1968) in a review of Róna-Tas (1966) discusses the issue of deaspiration with a view to Written Tibetan and Tibetan loanwords in Mongour (e.g. Written Tibetan *sna-tshogs* and Mongour *snaG̲soG̲* 'various, of all sorts', Miller 1968:160). The various facts he points out, while of great interest and deserving of further study, are not systematic enough to be considered here. An additional example from Róna-Tas (1966) would be #220 *χuīɒ̄ʑiā* : *dpe-cha* 'book'.

> **rp-* and that *-lp* occurs only in comp. (*pags-pa* and *-lpags* 'skin'), [10] hence *pad-ma* 'leech', from P[roto-]T[ibeto-]B[urman] **r-pat*, can be considered a regular development (!), as can probably also *pus-mo* 'knee', from **l-put-s* (cf. Kachin *lăphut*, with *lă-* probably standing for P[roto-]T[ibeto-]B[urman] **lak* 'foot/leg') and perhaps *pang* 'bosom, lap', from **l-pang*. (Benedict 1976:179, n.18)

This leaves Benedict with *ka-ba* 'pillar', *kun* 'all', *krad-pa* 'shoe', and *par* 'form, mould'. Bielmeier for his own part suggests:

> For *pang* 'bosom', *pag* 'brick' and others we also find spellings with aspirated initials and Balti *baɣbú* 'brick'. In *srin-bu pad-ma* 'leech', quoted by Benedict (1972:24) *srin-bu* is the usual word for 'worm' and *pad-ma* 'lotus' the attribute. *krad-pa* 'leather half-boot or shoe' is not documented in older texts. It occurs in Purik dialects. (Bielmeier 1988:16, n.1)

Unfortunately Bielmeier fails to document the "spellings with aspirated initials" (1988: 16, n.1)[11] and to provide a first attestation of *krad-pa* or an indication of which old corpora lack it. The word *krad-pa* appears to have a more specific meaning than 'shoe;' with Goldstein giving "leather sole for boots/shoes" (2001), and Zhang "sole of a shoe" (1985). The word *pag* Goldstein (2001) gives as an alternate of *sa-phag* '(mud) brick', and although Zhang (1985) does not give *pag*, he defines *sa-phag* as "a brick (*pha-gu*) made from mud (*'dam-bag*)." Thus we have a constellation of words relating to mud and bricks deserving of peculiar study: *pag*, *-phag*, *phagu*, *-bag*.

The word *par* has been the subject of considerable controversy, which would take us too far afield. Suffice it to say that either it is a loanword from Chinese *bǎn* 板 'wood block' (Laufer 1916/18:510, #232) or the original spelling is *dpar* (Shafer 1960:328, Simon 1962).

Bielmeier's obviously correct explanation of *pad-ma* throws some doubt upon the likelihood of the Proto-Tibeto-Burman root **r-pat* and highlights that

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[10] Hahn muses: "Für die anlautende Verbindung *lp-* haben wir im klassichen Tibetischen nur einen Beleg, nämlich *lpags* 'Haut.' Ist es abwegig, dies über die nicht metathetierte Form **p-lag-s* "das Äußere (?)" ebenfalls an *lhag* 'das Äußer(st)e' anzuknüpfen? [For the initial cluster *lp-* we have only one example in Classical Tibetan, namely *lpags* 'skin'. Is it off the mark to connect this, using the metathesized form **p-lag-s* 'the outside,'(?) with *lhag* 'the outside'?]" (1999:125). Presumably he intends *lpags* < **p-lag-s* < **b-lhag-s*.

[11] Jäschke himself gives *phang* as an alternate for *pang* 'bosom' (1881).

> Between […] the comparative method with its sound correspondences on the one hand, and Benedict and his 'generalizations' on the other—we must in all honesty, recognize the existence of a considerable chasm. (Miller 1974:1998-99)

After dismissing these from among Benedict's examples, Bielmeier identifies and accounts for a further example: "W[ritten]T[ibetan] *ko-(s)ko* 'chin' is a later spelling, cf. Balti *koskó* 'id.' with the loss of the first preradical in the reduplication, cf. Balti *kaská* 'ladder' and W[ritten]T[ibetan] *sk(r)a-ska* 'id.'" (1988:16, n.1). He also cites dialect support for the *l-* on *lpags* 'skin'. As for *pus-mo* 'knee' he writes:

> W[ritten]T[ibetan] *pus-mo* 'knee' seems again to be a later spelling, cf. Balti *puxmá* beside *puxmó*, Purik and lower Ladakhi of Nurla *puksmo*, Ladakhi of Nubra *pukmo*, but cf. Zangskar *puimo* < **pusmo* 'id.' (Bielmeier 1988:16, n.1)

Although this is interesting and seems to possibly suggest **pugs-mo*, it does not argue against *p-*. Perhaps he is suggesting that this is a term borrowed from the Western dialects into Written Tibetan, in which case the natural question is how 'knee' had been said previously, and where the Western dialects found the form. In the Old Tibetan document IO56 l. 1 this word is spelled *spu-smo*.[12] Bsod nams vod zer spells this word *dpus* (1997:236 *et passim*). The spelling *pus-mo* is very likely a later spelling.

Bielmeier admits that "[t]here remain a few entries which really call for explanation. I have none at present for W[ritten]T[ibetan] *ka-ba* 'pillar, post', *kun* 'all', [and] *ko-ba* 'leather' " (1988:16, n.1). Finally, from Beyer's minimal pairs one may add *ting* 'cup' and *tal* 'quick', *tse* 'basket' and the words *ka-ra* 'sugar' and *ku-shu* 'apple' can also be added (Róna-Tas 1966:113, note 47). I believe *krad-pa* 'sole of boot', *ka-ba* 'pillar', *ko-ba* 'leather', *ting* 'cup', and *tse* 'basket', are probably loanwords. All but the uncertain *kyong* are technologies. With *ka-ba* it is provocative but perhaps far-fetched to compare Sanskrit *skambhaḥ* which gives Nepali *khāmo* or *khā̃bo*, and Gujarati and Marathi *khā̃b* (Turner 1931). The word *ting* has the more specific meaning "small water bowl used for offerings" (Goldstein 2001). A possible Chinese source is the word *dǐng* (*teŋʔ) 鼎 'a tripod, a cauldron', but this may be too large a vessel to lie behind Tibetan *ting*. Perhaps a better comparison would be made to *diàn* 奠 (*teŋ) 'libation'. The word *tse* Das (1902) and Goldstein (2001) cite as both *tse-po* and *tsel-po.* Zhang (1985) knows only *tsel-po*. For *ko-ba*, and *tse(l)* I have no etymology to propose.

[12] I would like to that Guillaume Jacques for drawing my attention to this form.

## 9. Conclusions

Only those words beginning with voiceless unaspirated consonants that have been previously introduced into the literature are discussed here. Many more examples can be found by flipping through a Tibetan dictionary. Therefore, Written Tibetan can be recognized as having three stop series; the unaspirated series is somewhat rarer than the aspirated but no less genuine. Two desiderata of Tibetan philology are: (1) to find the earliest attestation of each word consistently spelled with an unaspirated voiceless initial, and (2) to find an etymology for all such words.

In the Old Tibetan inscriptions there are five words that begin with unaspirated voiceless initials, which are not (a) bound morphemes, (b) the second element of a compound word, or (c) loanwords. Of the five examples three also occur with other spellings, one, viz. *kyong*, is so far a *hapax legomenon*. The remaining two words *kun* and *ci* require special explanation. The first is spelled as unaspirated due to a morphophonemic tendency in the orthography, and the second is a proclitic and thus does not function as word-initial, but rather is treated phonetically as belonging to the preceding word.

In a period shortly before our oldest Tibetan texts aspiration may well have been sub-phonemic. Aspirated and non-aspirated voiceless stops were complimentary as noninitial members of consonants clusters. Simple voiceless initials were aspirated when appearing at the begining of a word, and unaspirated word-internally.

However, both the use of a script which distinguishes aspiration and the existence of loanwords with unaspirated initials indicate that in the period of the Old Tibetan inscriptions aspiration had begun to be phonemic. This situation could be perhaps meaningfully compared with the emergence of the phoneme /ʤ/ in modern Japanese due to the the influx of foreign loans with initial /di/ (Vance 1987:25), or the emergence of phonemic voicing in Finnish (Campbell 2004:66, Karlsson 1999:10). Although only occuring in limited number in foreign words, and irrelevant for historical and comparative studies, such idosyncracies are part of the phonologies of the languages in question.

These are very preliminary results and the problem deserves further study. In particular Dunhuang and Tabo materials, more recently discovered inscriptions, and transcriptional evidence must be used before stronger conclusions may be drawn.

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# 古藏文的全清與次清聲母

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在藏語文字系統中有全清（清不送氣）和次清（清送氣）兩套聲母，但一些學者認爲這兩套聲母之間不存在音位對立。本文通過對古藏文以及現代藏語方言中清聲母分布的分析，進一步認證原始藏語送氣/不送氣特徵爲非區別性特徵。在古藏文中，送氣/不送氣對立可能尚未音位化，但也有可能在外來詞的影響下已經初露音位化的端倪。除此之外，本文所涉及到的資料中的一些例子有助於對古藏文中“詞”這個語言單位的語音性質獲得更爲精確的認識。

關鍵詞：藏文書寫系統，全清（清不送氣）聲母，古藏文