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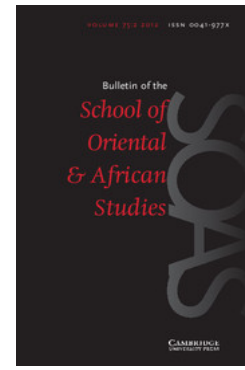


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Bulletin of the School of Oriental and African Studies / Volume 43 / Issue 03 / October 1980, pp 511 - 519
DOI: 10.1017/S0041977X00137413, Published online: 24 December 2009

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**How to cite this article:**
R. K. Sprigg (1980). Vowel harmony in noun-and-particle words in the Tibetan of Baltistan. Bulletin of the School of Oriental and African Studies, 43, pp 511-519 doi:10.1017/S0041977X00137413

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# VOWEL HARMONY IN NOUN-AND-PARTICLE WORDS IN THE TIBETAN OF BALTISTAN[1]

By R. K. Sprigg

## I. *Noun-and-definite-particle words*

In an earlier study, ' Assimilation, and the definite nominal particle in Balti Tibetan ' (Sprigg, 1972), I dealt with vowel harmony in words in which the noun is colligated with the definite nominal particle, a particle that has the constant phonetic form **po** when in junction with the final syllable of a noun ending in a consonant (**-Cpo**), e.g. **smɐnpo** ' the medicine ' *sman*, but variable phonetic features where the final syllable of the noun ends in a vowel: a share in the features of the resulting word-final long vowel, either **-o:** or **-u:** according to vowel harmony.[2] The former of these two long vowels applies to the ' open ' type of junction, e.g. (**di**) **mjo:** ' this fire ' *me*, (**di**) **zgo:** ' this door ' *sgo*, (**di**) **ʂto:** ' this horse ' *rta*, and the latter to the ' close ' type of junction, e.g. **bu:** ' the son ' *bu*, (**de**) **mju:** ' that man ' *mi*, as in the following short sentences: [3]

| | | | | | |
|---|---|---|---|---|---|
| A. | | **-Cpo** | **smɐnpo gɑ:ɾ jɔt.** | Where is the medicine ? | *sman* |
| B.1.a. | (i) | **-o:** | **di zgo: tʃɔt.** | Shut this door ! | *sgo* |
| | (ii) | **-jo:** | **di mjo: ljaxmɔ bʌɾɛn jɔt.** | This fire is burning well. | *me* |
| b. | | **-o:/-ao** | **di ʂto:/ʂtao ŋɑɾi mɛn.** | This horse is not my own. | *rta* |
| 2. | (i) | **-u:** | **gola skɛspi bu: nanɪŋ ʃɪs.** | The son who was born first died last year. | *bu* |
| | (ii) | **-ju:** | **de mju: ʔõ:sɛt.** | That man has come. | *mi* |

Csoma de Kőrös, incidentally, refers to this particle as expressing ' the definite article " the " ', with the spelling *po* ' in general, after consonants ', and *bo* ' after vowels ', e.g. ' *mig-po*, the eye ', ' *kha-bo*, the mouth ' (1834, 32).

## II. *Words analysable into noun and either genitive or locative particle*

In this study I wish to extend the same technique of analysis to noun-and-particle words in which the particle category is exemplified by some particle other than the definite particle, and to show that for them too vowel harmony justifies the same prosodic division into a ' close ' type of junction and an ' open '. Examples to support this analysis are drawn from words in which

[1] Based on a paper of the same title read at the Csoma de Kőrös Symposium, Balatonfüred, September 1979.

Baltistan is not far from the scene of Kőrösi Csoma's research work, in Ladakh; so it seemed to me appropriate that for a study in his honour I should choose a characteristic feature of the Balti dialect of Tibetan. Since Balti is highly conservative, it is reasonable to suppose that, during his stay in Zangskar and Bashahr (Duka, 1885, 39, 111), he may have heard phonetic forms similar to those which I am analysing here; indeed the recently published *Zangskar vocabulary* (Hoshi and Tsering, 1978) shows a high degree of similarity between the Zangskar dialect itself and the Balti dialect.

[2] My data, drawn from the Skardu dialect of Balti, I collected in 1964–5 from Zakir Hussein Baltistani, an intermediate-arts student at that time, to whom I am duly grateful. For the sake of comparison I have added to each of the Balti phonetic forms the corresponding Written Tibetan form, romanized from the Tibetan script (my informant, however, wrote his Tibetan in a slightly modified form of the Perso-Arabic script).

[3] For a more detailed account, and especially for **-ao** as an alternative to **-o:** for one type of words, e.g. (**di**) **ʂto:/ʂtao** ' this horse ' *rta*, and for phonetic forms in **-ɑ:o** such as (**di**) **khɑ:o** ' this snow ' *kha-b*, see Sprigg, 1972. 10–15.

the particle is either the ' genitive ' or the ' locative '. For the former, Csoma de Kőrös also uses the term ' genitive ' (1834, 41); he does not mention anything corresponding to the latter, which I take to be the Balti cognate of the Written Tibetan noun *nang* ' in it, therein ', etc. (Jaeschke, 1934, 301). Both these particles vary a great deal in phonetic features according to type of junction; and, as with the definite particle exemplified in section I, I take first the features that are appropriate to them in junction with a noun that ends in a consonant (' consonant-final ' junction).

A. Consonant-final junction

The set of three example sentences in this section contains the consonant-final noun **smɐn** ' medicine ' *sman*, and, further, the genitive particle in line (i), as in **smɐnɪ**, ' of medicine ' *sman-gyi*, and the locative particle in line (ii), as in **smɐnɪŋ** ' with the medicine '; there follows a series of single words, abstracted from sentence examples, a set of three (where the data permit) for each of the eleven types of consonant that occur finally in the noun, to show the noun word in comparison with (i) the noun-and-genitive-particle word and (ii) the noun-and-locative-particle word:

| | | |
|---|---|---|
| | **smɐn tʃɪk kjɔ̃:.** | Bring some medicine. |
| (i) | **smɐnɪ bɹɔtpo xɔsa dɷgɛt . . .** | The taste of medicine is bitter . . . |
| (ii) | **smɐnɪŋ tʃhu jyntsere ʂkɪm.** | Mix a little water with the medicine. |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **stɾʌp** | **skʉt** | **tʃɪk** | **ʂgjax** | **xnɑm** | | |
| (i) | **stɾʌbɪ** | **skʉdɪ** | **tʃɪgɪ** | **ʂgjaxɪ** | **xnɑmɪ** | | |
| (ii) | | **skʉdɪŋ** | **tʃɪgɪŋnu** | **ʂgjaxɪŋna** | **xnɑmɪŋna** | | |
| | bridle | voice | one | provisions | sky | | |
| | *srab* | *skad* | *gcig* | *rgyags* | *gnam* | | |
| | **smɐn** | **ʃɪŋ** | **bɐl** | **xsɛr** | **bɹɐs** | | **gʌʈ** |
| (i) | **smɐnɪ** | **ʃɪŋɪ** | **bɐlɪ** | **xsɛrɪ** | | | **gʌɖɪ** |
| (ii) | **smɐnɪŋ** | | | | **bɹɐsɪŋ** | | **gʌɖɪŋna** |
| | medicine | wood | wool | gold | rice | | knot |
| | *sman* | *shing* | *bal* | *gser* | *'bras* | | |

The last of the eleven types of final consonant exemplified above is to be found in loan words from an Indo-Aryan language, a retroflex post-alveolar plosive (**-ʈ, -ɖ-**); cf. Panjabi *ga'ṭh*.

For this retroflex-plosive example, and, indeed, for all nouns containing a plosive final consonant, there is an alternation in the voicing feature: voicelessness in word–final position, and therefore in junction between words (interverbal junction), and voice in word–medial position (intraverbal junction), e.g. **-p** versus **-b-** in **stɾʌp** versus **stɾʌbɪ**.[4] Apart from this variation in voicing feature for plosive–final lexical items, by type of junction, the phonetic form of a consonant-final noun is constant, and so, too, in this type of junction, is the phonetic form of the genitive particle and the locative particle: **-ɪ** for the former, and **-ɪŋ** for the latter. This type of junction, then, can suitably be termed ' consonant-final ' junction; it has, however, nothing to contribute to vowel harmony, which applies to ' vowel-final ' junction, in which the noun ends in a vowel.

B. Vowel-final junction

Vowel-final junction requires that a broad distinction be drawn between (1) words in which the vowel in the final syllable is relatively open, being

[4] For ' interverbal ' and ' intraverbal ' junction cf. also Sprigg, 1957, 108–38.

either (i) half-close (**-e:**) or (ii) half-open (**-ɛŋ**), and (2) words in which it is relatively close, being either (i) close (**-i:**) or (ii) between close and half-close, and centralized (**-ɪŋ**), the features shown at (i) being those for words exemplifying the genitive particle, and those shown at (ii) for words that exemplify the locative particle. From the standpoint of prosodic analysis, then, in which precedence in order of statement is given to syntagmatically associated features over features in paradigmatic contrast, it again becomes necessary to distinguish an ' open ' from a ' close ' type of junction (section I above).

1. *Open junction*

In words exemplifying not only the noun but also the genitive or the locative particle the criteria of ' openness ' are (i) half-closeness (**-e:**) and (ii) half-openness (**-ɛ-**) respectively; and in words exemplifying the noun alone those criteria are: half-closeness, combined with either frontness (**-e**) or backness (**-o**), or openness, combined with either frontness (**-a**) or backness (**-ɑ**), this latter alternation being associated with differences in place of articulation of the preceding consonant (palatal v. velar, etc.); e.g.

| | **-e:, -ɛŋ, -e;** | | **-we:, -wɛŋ, -o;** | | **-e:, -ɛŋ, -a/ɑ** | | |
|---|---|---|---|---|---|---|---|
| (i) | **me:** | **stare:** | **zgwe:** | **bjafwe:** | **tʃe:** | **kje:** | **ŋje:** [5] |
| (ii) | **mɛŋnu** | **starɛŋnu** | **zgwɛŋnu** | **bjafwɛŋnu** | **tʃɛŋnu** | **kjɛŋnu** | |
| | **me** | **stare** | **zgo** | **bjafo** | **tʃa** | **khɑ** | **ŋja** |
| | fire | hammer | door | cockerel | tea | mouth | fish |
| | *me* | *sta-re* | *sgo* | *bya-pho* | *ja* | *kha* | *nya* |

The difference in vowel quality that appears between the examples in line (i) and those in line (ii), half-closeness and length (**-e:**) versus half-openness and shortness (**-ɛ-**), I account for syntagmatically, as being due to the final syllable's being (i) open (**-e:**) or (ii) closed (**-ɛŋ**), a prosodic difference in syllable final.

A major difference between consonant-final junction and vowel-final junction is that in the former type (section A above) it is more easy to distinguish the noun and the particle, and assign phonetic features to each, e.g.

(**strʌbɪ**): noun **strʌb-**, genitive particle **-ɪ**
(**xnɑmɪŋna**): noun **xnɑm-**, locative particle **-ɪŋ-**;

but this is not possible in the latter type, where the most satisfactory solution is to treat the vowel sounds of **-(w)e:** and **-(w)ɛŋ** as exemplifying both the final vowel of the noun and the initial vowel of the particle; that is, both noun and particle share those vowel features. If, on the contrary, the non-syllabic vowel **-w-** in the word **zgwe:** ' of door ', for example, were to be assigned to the noun as its portion, that would mean allotting the rest, the long syllabic vowel **-e:**, to the (genitive) particle; but with **-e:** regularly appropriated to the particle, that would leave only **m-** for the noun in the word **me:** ' of fire '.

*Long-vowel nouns*

The examples given thus far in section 1 show an alternation in vowel length between the shortness of vowel in the noun-word examples (**-e, -o, -a/ɑ**)

[5] In this respect, the length feature of the vowel **-e:** (likewise that of **-i:** in section (2) below), Balti differs from the otherwise similar examples of the Zangskar dialect (Hoshi and Tsering, 1978), which show shortness of vowel: ' 0996 of (genit. p.) . . . -a + e: -e, -i + e: -i, -u + i: -ui, -e + e; [*sic*] -e ' (76).

and in the examples of noun and locative particle (**-(w)ɛŋ**), on the one hand, and the length of vowel (**-(w)e:**) in the examples of noun and genitive particle; but there are also words in which length is a feature of the syllabic vowel in all three grammatical types of word, with a half-close vowel quality (**-e:ŋ**) in the closed-syllable type instead of the half-open quality (**-ɛŋ**) to be found in the earlier examples:

**-ô:, -wê:, -wê:ŋ ; -û:, -ê:, -ê:ŋ ; -wû:, -wê:, -wê:ŋ** ; e.g.

| | | | |
|---|---|---|---|
| (i) | **tʃɥê:** [6] | **snê:** | **l̥twê:** |
| (ii) | **tʃɥê:ŋ** | **snê:ŋnu** | **l̥twê:ŋnu** |
| | **tʃô:** | **snû:** | **l̥twû(:)** [7] |
| | rajah | ear | belly |
| | *jo-bo* | *rna-ba* | *lto-ba* |

The noun component of these long-vowel examples is probably best treated as comprising two lexical items, the first of which is of the vowel-final type, while the second is of vowel-initial type, whence **-V:** as a vowel-vowel sequence (disyllabic nouns, however, in which the second syllable has (i) an initial *consonant* and (ii) a final vowel **-a/ɑ**, e.g. **lɑqpɑ** ' hand ' *lag-pa*, **bjɑŋɑ** ' sand ' *bye-ma*, **ʔata** ' father ', behave quite differently from those which have only a single vowel, and have therefore been considered separately, in section D).

Further evidence to support treating **tʃô:**, **l̥twû(:)**, etc., as comprising two lexical items comes from compounds such as **ʔastʃo** ' princess ', **tʃotʃo** ' noble-woman ', **l̥tostoŋ** ' empty stomach ', **snazdʌm** ' admonition ', in which the initial lexical items of the words **tʃô:**, **snû:**, and **l̥twû(:)** also occur, but with a short final vowel in each case (**-o**, **-a**), and the second lexical items of those words do not occur (Written Tibetan orthography also supports this analysis of such words as being two-lexical-item : *jo-bo*, *rna-ba*, *lto-ba*.

2. *Close junction*

In this type of junction words exemplifying both noun and (i) genitive or (ii) locative particle have, as their criteria :

(i) closeness, frontness, and length **-(w)i:**

(ii) between closeness and half-closeness, frontness centralized, shortness **-(w)ɪŋ** ;

corresponding noun words have :

(i) closeness, frontness, and shortness **-i**

(ii) closeness, backness, and shortness **-u** ;

e.g.

| | **-i:, -ɪŋ, -i ;** | | **-wi:, -wɪŋ, -u** | |
|---|---|---|---|---|
| (i) | **mi:** | **staʁʒi:** | **bwi:** | **bjɛt̲ji:** [8] |
| (ii) | **mɪŋnu** | **staʁʒɪŋnu** | | **bjɛt̲ɪŋnu** |
| | **mi** | **staʁʒi** | **bu** | **bjɛt̲u** |
| | man | tree | son | chicken |
| | *mi* | *stag-pa* | *bu* | *bya-phrug* |

[6] Where the preceding consonant is palato-alveolar (**tʃ-**, **ʃ-**, **ʒ-**), the non-syllabic vowel is not back (**-ɯ-**) but front (**-ɥ-**), e.g. **ɬtʃɥɪŋna** ' out of ten ' *bcu*, **kuʃɥi:** ' of an apple ' *ku-shu*, **ʁʒɥî:** ' of a bow ' *gzhu*.

For the characteristic rise-fall pitch pattern of two-lexical-item nouns such as these, symbolized here by a circumflex over the syllabic-vowel symbol, see Sprigg, 1972, 11–14.

[7] Nouns in final **-wɑ(:)** seem to vary in the length of the syllabic vowel.

[8] In examples in which the syllable initial is **Cɹ-** there is no rounded non-syllabic vowel (**-ɯ-**, **-ɥ-**) ; but lip-rounding accompanies the friction (**-ɹ**), and is symbolized here by a subscript ‿, formerly the I.P.A. symbol for ' labialization ' (International Phonetic Association, 1949, 17).

*Long-vowel nouns*

In the last two paragraphs of section 1, open junction, a type of word in which the vowel was long in all cases, **-we:**, **-we:ŋ**, and **-o:**, was distinguished from the type in which the vowel showed an alternation in length, **-we:** versus **-wɛŋ** and **-o**, and the noun component of the former type was analysed into two lexical items, one of them being vowel-final, and the other being vowel-initial; in close junction, too, there are examples of this type:

**-wî:**, **-wî:ŋ**, **-û:**; e.g.

| | | | |
|---|---|---|---|
| (i) | **pɻ̥î:** [8] | **bwî:** | **ʁʒɥî:** |
| (ii) | **pɻ̥î:ŋnu** | | |
| | **pɻ̥û:** | **bû:** | **ʁʒû:** |
| | child | calf | bow |
| | *phru(g)-gu* | *be'u* | *gzhu* |

The analysis of these nouns into two lexical items can be supported from compounds such as **bjɛtɻ̥u** 'chicken' *bya-phrug*,[9] **buɻ̥kjɐl** 'calf-skin bag' *be-rkyal*, **ʁʒuɾgjot** 'bow-string' *gzhu-rgyud*.

C. Genitive particle and locative particle: phonetic exponents

In consonant-final junction (section A) both particles have a single set of phonetic exponents each for the vowel: between close and half-close, front, but centralized, and short (**-ɪ**, **-ɪŋ**); in vowel-final junction, on the other hand, the genitive particle needs two sets of exponents, one for open junction (**-e:**) and one for close (**-i:**), while the locative particle needs four (**-ɛŋ**, **-ê:ŋ**; **-ɪŋ**, **-î:ŋ**), two alternatives being due to two-lexical-item nouns, with each particle claiming an unspecified share of the vowel features of the junction. Those phonetic exponents can be classified according to the type of junction to which they are appropriate, as 'consonant-final', 'close vowel-final', and the like, as in the following diagram:

| | *Type of Junction* | | |
|---|---|---|---|
| | *Consonant-final* | *Vowel-final* | |
| | | *Open* | *Close* |
| Genitive particle | **-Cɪ** | **-(w)e:** | **-(w)i:** |
| Locative particle | **-Cɪŋ** | **-(w)ɛŋ**<br>**-(w)ê:ŋ** | **-(w)ɪŋ**<br>**-(w)î:ŋ** |

The various noun lexical items with which each of the two particle lexical items occurs in collocation can also be classified; but in their case the classification is single; for each is limited to occurring in a single type of junction, 'consonant-final', 'open (vowel-final)', and the like. Thus the noun lexical item that occurs in the set of words **xnɑm xnɑmɪ** and **xnɑmɪŋna** in section A can be classified as a 'consonant-final-junction' lexical item or, more briefly, as a 'consonant-final' lexical item; and the noun lexical items that are exemplified in B.1, in, for example, the set of words **me:**, **mɛŋnu**, and **me**, and in B.2, in, for example, the words **mi:**, **mɪŋnu**, and **mi**, can all be classified as 'vowel-final(-junction)' lexical items, the former being further classifiable as 'open(-junction)', and the latter as 'close(-junction)'.

[9] For the relationship between the rhotacized initials **pɻ̥-** and **tɻ-**, e.g. **pɻ̥û:** 'child' *phru(g)-gu* and **bjɛtɻu** 'chicken' *bya-phrug* (from ***bjaptɻu**) see Sprigg, 1968a, 161–4, and Sprigg, 1968b, 309–10.

D. Disyllabic nouns in word-final **-a/ɑ** and **-û:**

While this method of classification, through type of junction, means that a noun lexical item such as that exemplified in **tʃe:**, **tʃɛŋ**, and **tʃa** ' tea ' *ja*, or **kʲê:**, **kʲê:ŋ**, and **khû:** ' snow ' *kha-ba* (B.1), in which a word-final open-vowel (**-a/ɑ** or **-û:**) alternates with a share of **-e:** and of **-ɛ-** or **-ê:-** in **-ɛŋ** or **-ê:ŋ**, can be classified as a ' vowel-final ' ' open-junction ' lexical item, other noun lexical items that have the same word-final vowel **-a** or **-ɑ** share in very different qualities of vowel when collocated with the two particle lexical items in question, (i) genitive, and (ii) locative ; e.g.

| | | | |
|---|---|---|---|
| (i) | **lɑqpi:** | **bjaŋi:** | **ʔati:** |
| (ii) | **lɑqpɪŋ** | | **ʔatɪŋ** |
| | **lɑqpɑ** | **bjaŋɑ** | **ʔata** |
| | hand | sand | father |
| | *lag-pa* | *bye-ma* | |

The shared vowel qualities for this type of example are, unexpectedly, the characteristic qualities of close junction : (i) **-i:**, (ii) **-ɪ-** (B.2). What makes the difference between this latter type of noun in word-final **-a/ɑ** and the examples given in B.1, with their open-junction characteristics (**-e:**, **-ɛŋ**, **-ê:ŋ**), seems to be that they belong to a disyllabic type of noun in which the second syllable has an initial consonant, e.g. **p-**, **ŋ-**, **t-**.[10] It is this initial consonant that serves to distinguish this disyllabic, and commonly two-lexical-item type of noun from the two-lexical-item type exemplified in B.1, e.g. **snû:** ' ear ' *rna-ba*, **l̥twû:** ' belly ' *lto-ba*, in which the second lexical item is vowel-initial, and which behaves like an orthodox open-junction example, e.g. **snê:**, **l̥twê:ŋnu**.

Although the genitive-particle and locative-particle forms of this type of disyllabic noun in **-a/ɑ** are irregular, through conforming to the close-junction type, their definite-particle forms are open-junction ; e.g.

| | | | | | |
|---|---|---|---|---|---|
| | **lɑqpo:(la)** | **bjaŋo:** | **ʔata** [11] | | |
| cf. | **tʃo:** | **kho:** | **khô:** | **l̥tô:** | open jn. |
| | (my) tea | (her) mouth | (this) snow | (his) stomach | |
| | *ja* | *kha* | *kha-ba* | *lto-ba* | |
| but | **mju:** | **bu:** | **bû:** | **staʁʒu:** | close jn. |
| | (that) man | the son | (that) calf | (that) tree | |
| | *mi* | *bu* | *be'u* | *stag-pa* | |

The plural forms of this type of disyllabic noun are also regular, in being open-junction ; e.g.

| | | | | | |
|---|---|---|---|---|---|
| | **lɑqpoŋ** | **bjaŋoŋ** | **ʔatoŋ(la)** [12] | | |
| | hands | sands | fathers | | |
| cf. | **tʃoŋ** | **khoŋ** | **khô:ŋ** | **l̥tô:ŋ** | open jn. |
| | teas | mouths | snows | stomachs | |
| but | **mjuŋ** | **buŋ** | **bû:ŋ** | **staʁʒuŋ** | close jn. |
| | men | sons | calves | trees | |

[10] But **ŋɑ** ' I ' *ŋga* and its genitive-particle and locative-particle forms **ŋji:** and **ŋjɪŋ** respectively (not ***ŋje:** and ***ŋjɛŋ** ; cf. (B.1), **khɑ**, **kʲe:**, **kʲɛŋnu** ' mouth ' *kha*) clearly cannot be accounted for as disyllabic, and must therefore be treated as an exception to the open-junction type of monosyllable.

[11] Presumably because it is a loanword **ʔata** is exceptional ; e.g. **ŋji: ʔata** (not ***ʔato:**). The pitch pattern of this word, with high pitch for the first syllable rather than low, also marks it as belonging to the minority type (Sprigg, 1966, 186–8).

[12] Csoma de Kőrös lists *yongs* among his ' Plural signs ', *cag*, *dag*, *rnams*, etc. (42) ; and it is this form that seems to me to be the most likely origin of the **-ŋ**, and of the lip-rounding and backness of the vowel (**-o-**, **-u-**), in the plural forms of vowel-final-junction nouns such as these (cf. also Jäschke, 1934 : ' *yoṅs*, **all, whole** ' (515)).

Disyllabic nouns in word-final **-Ca/ɑ**, then, seem to have a foot in both camps: when exemplified in noun words and words in which the noun is colligated with the definite or the plural particle they follow the open junction pattern; but in words in which it is the genitive or the locative particle that the noun is colligated with it is the close-junction pattern that they follow.

The examples of plural forms given above are of the plural particle appropriate to vowel-final junction (? *yongs*); as examples of the plural particle appropriate to consonant-final junction, **-Ckɑn** *kun*, on the other hand, I give the following three:

| **tʀɒqkɑn** | **tʃataxkɑn** | **xlaŋkɑn** |
|---|---|---|
| catapults | preparations | bulls |
| | | *glang* |

Before going on to consider, briefly, a particle that makes no contribution to vowel harmony but a major contribution to distinguishing consonant-final from vowel-final junction, it is first useful to summarize the part that the four particles considered so far, definite, genitive, locative, and plural, play in vowel harmony (stated here through the two-term junction system, ' open ' versus ' close '), and, at the same time, to summarize the part played by the parallel junction system, ' consonant-final ' versus ' vowel-final ':

| *Particle* | *Consonant-final* | *Vowel-final* | |
|---|---|---|---|
| | | *Open* | *Close* |
| Definite | **-Cpo** | a share of **-(j)o:** | or **-(j)u:** |
| Genitive | **-Cɪ** | **-(w)e:** | **-(w)i:** |
| Locative | **-Cɪŋ** | **-(w)ɛŋ** | **-(w)ɪŋ** |
| | | **-(w)ê:ŋ** | **-(w)î:ŋ** |
| Plural | **-Ckɑn** | **-oŋ** | **-uŋ** |
| | | **-ô:ŋ** | **-û:ŋ** |

III. *Noun and agentive particle: consonant-final versus vowel-final junction*

The alternation in the phonetic form of the agentive particle is between (i) a disyllabic form in all types of consonant-final junction (**-Cɪsɪ**) except one, that in which the noun is **s**-final (e.g. **ŋjɪsɪ** ' two ' *gnyis*, not ***ŋjɪsɪsɪ**), and (ii) a monosyllabic form, in vowel-final junction (**-Vsɪ**) and in the exceptional type of consonant-final junction just referred to (**-Vsɪ**), though with a difference in vowel features between these two latter; e.g.

A. Vowel-final junction (**-V**; **-Vsɪ**)

| **ɖre** | **kho** | **ŋɑ** | **tʃhu** | **kji** |
|---|---|---|---|---|
| **ɖresɪ** | **khosɪ** | **ŋɑsɪ** | **tʃusɪ** | **kjisɪ** |
| devil | he | I | water | dog |
| *'dre* | *kho* | *nga* | *chu* | *khyi* |

B. Consonant-final junction (**-C**; **-Cɪsɪ**, **-Vsɪ**)

| **khɑp** | **βgjɐt** | **tʃɪk** | **pjɔχ** | **χsɑm** | |
|---|---|---|---|---|---|
| **khɑbɪsɪ** | **βgjɐdɪsɪ** | **tʃɪgɪsɪ** | **pjɔɣɪsɪ** | **χsɑmɪsɪ** | |
| needle | eight | one | relation | three | |
| *khab* | *brgyad* | *gcig* | *phyogs* | *gsum* | |
| **ʃɪŋkhɐn** | **kjaŋ** | **thoɾ** | **ʁbo̜** | **ŋjɪs** | **ʁo̜** |
| **ʃɪŋkhɐnɪsɪ** | **kjaŋɪsɪ** | **thoɾɪsɪ** | **ʁbo̜ɪsɪ** | **ŋjɪsɪ** | **ʁo̜ɪsɪ** |
| carpenter | you | whip | snake | two | deaf person |
| *shing, mkhan* | | | *sbrul* | *gnyis* | |

A syntagmatic approach to this degree of phonetic variation requires the same two-term junction system, vowel-final versus consonant-final, as was used above in the course of dealing with corresponding variation in the phonetic form of the definite, genitive, locative, and plural particles, including, in some cases, the associated variation in the syllable final of the final syllable of the noun component (I–II).

A. Vowel-final junction (**-Vsɪ**)

In the types of junction considered in sections I and II the vowel-final type of junction showed greater complexity than the consonant-final, largely because of the vowel harmony feature, treated there as a difference of junction between open and close; in this type, however, it is the less complex: the particle shows the constant phonetic features **-sɪ** (monosyllabic); the final syllable of the noun shows one or other of the vowels **-e**, **-o**, or **-a/ɑ**, or **-i** or **-u**, symbolized more generally as **-V-** in the phonetic formula **-Vsɪ**; e.g.

| | |
|---|---|
| **tʃhusɪ kjɛɾɔk.** | Water will carry it away. |
| **ŋɑsɪ tsʉltsʉl bɛn jɔt.** | I am making an inquiry. |

B. Consonant-final junction (**-Cɪsɪ**, **-Vsɪ**)

The consonant-final term of the junction system, in this case the more complex of the two, requires two separate statements of exponency. Much the more general of the two is the statement through which the final consonant of the noun (**-b**, **-d**, **-g**, **-ɣ**, **-m**, **-n**, **-ŋ**, **-ɾ**, **-l**, **-ɖ**) is linked to the particle through an epenthetic vowel **-ɪ-**, with the result that the whole junction piece can be symbolized as **-Cɪsɪ**, in which the **-C-** is a more general symbolization for any of the ten consonant sounds just listed; it will be observed that, as in the case of genitive-particle and locative-particle junction (II.A), plosives have voice (**-b**, **-d**, **-g**, **-ɖ**), as opposed to the voicelessness (**-p**, **-t**, **-k**, **-ʈ**) that they have when word-final, and therefore in Interverbal Junction, i.e. junction at word boundaries, or between words (this voicing alternation, between voice and voicelessness, has also been noted, in this type of junction, for the dorsal fricative, uvular or velar (**-χ** or **-ɣ-**), e.g. **pɟɔχ** v. **pɟɔɣɪsɪ**; it is not consistent with the voicelessness (**-x**, **-x-**) noted in genitive-particle and locative-particle junction; II.A); e.g.

| | |
|---|---|
| **khɑbɪsɪ tɟɑq pɟõ:s.** | A needle drew blood. |
| **pɟû: βgjʉdɪsɪ ʔɪmtɪhɑ:n tã:s.** | Eight boys took the examination. |

The second statement of exponency, symbolized by **-Vsɪ**, is exemplified by the second word of the following sentence:

| | |
|---|---|
| **pɟû: ŋjɪsɪ ʔɪmtɪhɑ:n tã:s.** | Two boys took the examination. |

It therefore appears at first sight identical with that of vowel-final junction; but the generalized phonetic formula **-Vsɪ** masks the fact that the qualities of vowel summarized by **-V-** in this instance (section B) are **-ɪ**, **-ɛ**, **-ʉ**, **-ɔ**, **-ɑ**, and are, therefore, different from those symbolized by the **-V-** of the phonetic formula **-Vsɪ** in vowel-final junction (section A). There is also, of course, the further criterion that the noun is consonant-final (**-s**) when occurring in word-final position (Interverbal Junction) as opposed to the final vowel of the examples **dɾe**, **kho**, etc., of the noun-word examples given in section A above; e.g.

| | | |
|---|---|---|
| **-ɪs** | **ŋjɪs kjõ:.** | Bring two. |
| **-ɛs** | **ɾɛs khoɾbɑ ɾgɔsɛt.** | Everyone must get a turn. |
| **-ʉs** | **bɾʉs tsâ:mtse jɔt.** | How much rice is there ? |

| | |
|---|---|
| **-ɔs tʃhɔs ma tsɔ̃:.** | Do not betray the religion. |
| **-ɑs ʁbɑs tʃɪksa ljaxmɔ mɛt.** | Not one of the pillars is good. |

(*gnyis, res, 'bras, chos, dbus*).

The **-s-** of the word **ŋjɪsɪ** ' by two ' *gnyis* and other such examples of the noun and agentive particle is best considered as shared by both noun and particle, the final part of the noun lexical item and the initial part of the particle lexical item, in intraverbal junction.

IV. *Conclusion*

In comparison with dialects of central Tibet vowel harmony in the Balti dialect has only a very minor role to play; but, such as it is, it is interesting to note that it conforms to the same analysis, in terms of two types of piece, ' open ' and ' close ', as applies to the Lhasa dialect (Sprigg, 1961).

## References


Csoma de Kőrös, A. 1834. *Grammar of the Tibetan language.* Calcutta.

Duka, T. 1885. *Life and works of Alexander Csoma de Körös.* London: Trübner.

Hoshi, M., and Tsering, T. 1978. *Zangskar vocabulary, Monumenta Serindica,* no. 5. (Institute for the Study of Languages and Cultures of Asia and Africa, Tokyo.)

International Phonetic Association. 1949. *The principles of the International Phonetic Association.* London: Department of Phonetics, University College.

Jäschke, H. A. 1881. *A Tibetan–English dictionary.* London: Trübner. [Reprinted London: Kegan, Paul, Trench, Trubner, 1934.]

Sprigg, R. K. 1957. ' Junction in spoken Burmese ', in *Studies in linguistic analysis. Special volume of the Philological Society.* Oxford: Blackwell, 104–38.

Sprigg, R. K. 1961. ' Vowel harmony in Lhasa Tibetan: prosodic analysis applied to interrelated vocalic features of successive syllables ', *BSOAS,* XXIV, 1, 1961, 116–38.

Sprigg, R. K. 1966. ' Lepcha and Balti Tibetan: tonal or non-tonal languages ? ', *Asia Major,* New Series, XII, 2, 185–201.

Sprigg, R. K. 1968a. ' A Tibeti mássalhangzókapcsolatok fonetikai problémái ', *Tudományos Akadémia,* 1, Oszt. Közl. 25, 161–7.

Sprigg, R. K. 1968b. ' The role of *R* in the development of the modern spoken Tibetan dialects ', *Acta Orientalia Hungarica,* XXI, 3, 301–11.

Sprigg, R. K. 1972. ' Assimilation, and the definite nominal particle in Balti Tibetan ', *Bulletin of Tibetology,* IX, 2, 5–19.