A Polysystemic Approach, in Proto-Tibetan reconstruction, to tone and syllable-initial consonant clusters

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A POLYSYSTEMIC APPROACH, IN PROTO-TIBETAN RECONSTRUCTION, TO TONE AND SYLLABLE-INITIAL CONSONANT CLUSTERS

By R. K. SPRIGG

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INTRODUCTION

In an earlier article (Sprigg, 1963b) I drew on Burmese, with only a few examples from certain Tibetan dialects (Lhasa, Sherpa), to advocate applying prosodic analysis, the name commonly given to the polysystemic type of phonological analysis devised by J. R. Firth, to the languages of the Tibeto-Burman group for purposes of comparison and reconstruction; since then I have had an opportunity of studying two typologically different Tibetan dialects, the non-tonal Golok and the slightly tonal Balti, both of them remarkable for syllable-initial consonant clusters; and the relations of tone in the tonal Tibetan dialects to syllable-initial consonant clusters in the non-tonal dialects much strengthens the case, to my mind, for basing comparison of Tibetan dialects, and. through them, Proto-Tibetan reconstruction,

1 Based on 'Tibetan syllable-initial consonant clusters as syllable features, equivalent to tone', a paper contributed to the third Conference on Sino-Tibetan Reconstruction, Cornell University, Ithaca, N.Y., in October 1970. For references, see pp. 586-7.

2 cf. also Sprigg, 1963a. For 'prosodic analysis' see Palmer, 1970, and especially 'Introduction' (pp. ix-xvi).

3 For tone in Balti see Sprigg, 1966.
on polysystemic analysis. The two main characteristics of such an analysis would be: (i) separate phonological systems for different types of syllable feature and syllable-initial feature; (ii) the emphasis on the syntagmatic association of successive phonetic features of the utterance rather than on purely paradigmatic contrast.

In Appendixes A and B I therefore give a synopsis of the syllable-initial consonant clusters I observed in the Balti and Golok dialects of Tibetan, together with corresponding cluster and non-cluster initial consonants of the Lhasa dialect, and its matching distinctive-pitch features; it is on features such as these that my thesis is based.

I. PROSODIC ANALYSIS AND SYLLABLE-INITIAL CONSONANT CLUSTERS

In prosodic analysis prominence is given to syntagmatically associated features as opposed to features in paradigmatic contrast. Before I apply this type of analysis to Tibetan syllable-initial consonant clusters and to the corresponding syllable-initial simple consonants of Lhasa Tibetan, it may be helpful to give a brief illustration from English, which also distinguishes syllable-initial consonant clusters from non-cluster initial consonants in a similar way to Tibetan but not with the same complexity. In the English words *Sprigg*, *string*, and *screech*, or *split* and *sclerosis*, or *spew*, *stew*, and *skew*, the syntagmatic association of *s* with the voicelessness of *p*, *t*, or *k*, and with their non-aspiration feature (*pr* *tr* *kr* *pl* *pj* *tj* *kj*), would require that an assibilated (or initial-cluster) *piece* (*spr* *str* *skr* *spl* *skl* *spj* *stj* *skj*) be distinguished from the non-assibilated type of initial *piece* to be found in such monosyllables as *big*, *pig*, *brig*, and *prig*, or *bloom* and *plume*, *clue* and *glue*, or *pew*, *beauty*, *dew*, and *queue* (*big* *pug*; *brig* *pig*; *bloom* *plum* *kju* *glu*; *pju* *bjut* *dju* *kju*), in the syllable initial of which (i) voice is in contrast with voicelessness as a feature of the syllable initial as a whole (*bi* *br* *bl* *gl* *bj* *dj* versus *pi* *pr* *pj* *kj*), and (ii) aspiration is distinguished from non-aspiration, the former feature being linked to voicelessness in the plosive but the latter to voice. The two sets of phonetic features, the assibilated (or cluster) and the non-assibilated (or non-cluster), would be stated as the (phonetic) exponents

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5 Phonetic transcription is in the International Phonetic Alphabet, except that (i) *C* and *V* have been introduced to symbolize consonant or vowel, *P* any appropriate plosive consonant, and *N* any appropriate nasal consonant; (ii) raised and lowered hyphens are used to symbolize high and low pitch respectively; (iii) *j* and *z* symbolize palato-alveolars in Balti but alveolo-palatals in Golok, Lhasa, Sherpa, and Sikkimese.

The symbol *r* represents alveolarity and friction (i) in the Lhasa dialect in all circumstances; (ii) in Golok and Balti when following a consonant, except in the Balti cluster *str*, and in certain Skardu-Balti words, of which *trok*, *drol*, and *zdrol* are the only examples given in this article; (iii) initially in Golok in *tr* and in Balti *ron* 'mount' (*bzhon*); in all
of one or other of the two terms of a prosodic system applicable to the syllable-
initial ‘piece’, one term of which might conveniently be named s, from the
characteristic indication of that type of piece in English orthography, and the
other, by contrast, ē (non-s). These two syntagmatically different types of
piece belong only to the initial part of the syllable containing them; but they
can be used, even so, as a means of classifying prosodically the lexical items
in which they occur: the (monosyllabic) lexical items Sprigg, split, stew,
squirm, and spit, for example, would be classified as s-piece lexical items,
and brig, pig, plume, queue, and Quirk, for example, as ē-piece lexical items,
by reference to whichever of the two terms of that syllable-initial-piece prosodic
system each lexical item exemplified.

I have given introductory examples from English because the position is
much less complex in English than in Tibetan: English has only one type of
initial cluster, the assimilated, in terms of the definition of ‘cluster’ applied
to the examples Sprigg, sclerosis, spew, skew, etc., as opposed to the non-
assemblated examples brig, prig, clue, glue, etc., in the preceding paragraph;
but Appendixes A and B show, for Balti, seven, named here the l, r, s, g, b, n,
and m clusters, for Golok, five (r, g, b, n, and m), and for the Lhasa dialect,
four (g, b, n, and m), though the n and m terms of the Balti cluster system
and the g and m terms of the Lhasa cluster system are very rare, and it is

other circumstances r symbolizes a rolled consonant, commonly only one-tap, with dental
contact in str and tr and the Skardu examples trok, drol, and zdrol, but otherwise alveolar.

Lhasa-Tibetan disyllabic nouns have more than one pitch pattern, depending on whether
they do or do not follow an emphasized word earlier in the sentence, and on whether they are
or are not sentence-final (Sprigg, 1954, 143–6; Sprigg, 1955, 147–53 (or Palmer, 1970, 126–32;
see also section IV below); my examples show the non-sentence-final pitch pattern, as being
probably the most common of the three for nouns; but in any case this pattern implies the use
of either of the other two in appropriate circumstances, and in effect summarizes all three.

I would emphasize, especially in connexion with section III, that the two pitch marks are
not tone marks, and that the raised hyphen in a phonetic transcription is no guarantee that the
lexical item the that marks has a ‘high-tone’ phonological classification, and vice versa.

My informant for the Lhasa dialect was Rinzin Wangpo, born in Lhasa, with whom I worked
in London and in Kalimpong, checking my findings with other Lhasa Tibetans in Kalimpong
and at Gyantsé, in the Tsang province of Tibet, in 1948–50, and especially with Penjor Phuntshok,
of the Tsarong family (Taring, 1970, 122). For the Skardu dialect of Balti my informant was
a young student, Zakir Hussein Baltistani, for the Khapalu dialect, Abdul Karim, a servant, at
Rawalpindi, in 1964–5, and for Golok, an incarnate lama, Dodrupchan Rimpoche, for eight days,
at the Namgyal Institute of Tibetology, Gangtok, Sikkim, in May 1965.

It is noteworthy that Firth, in the very early days of prosodic analysis, before the publication
of his paper ‘Sounds and prosodies’ had given it that name, and Vogt, in his phonemic analysis
of Norwegian, both insisted on treating their respective syllable-initial clusters as units, com-
parable to the s type of syllable-initial piece that I recognize here: ‘Consonant groups, such as
st, str, sp, spt, sk, skr, in initial position in English, are best regarded as group substituents, and
no attempt should be made to identify the letter “t” (here part of a digraph or trigraph) with
that of a similar letter used in another context’ (Firth, 1936, 543, or 1957 reprint, 73); ‘the
clusters sp-, etc. . . . behave in all respects as single phonemes, to be classed with the stops . . . .
We can give the name composite phonemes to phonemes of this kind. sp-, st-, sk—. . . . form a
striking parallel to the diphthongs which among the vowels constitute a similar class of composite
phonemes’ (Vogt, 1942, 14).
only medially within the word that these terms are represented phonetically by consonant clusters.\footnote{Some examples of the Golok b cluster should be distinguished from others because in their case the function of the b is not lexical but grammatical: past-tense (Sprigg, 1968c, 308). Thus, the Golok example \textit{fi}: (blia) (Appendix A, col. 1) is regarded as both lexically r-cluster and grammatically b-cluster, the former being symbolized in Written Tibetan by the -\textit{t}-, and the latter by the \textit{b}-, of \textit{bi}-.}

II. INITIAL CONSONANT CLUSTERS AND SIMPLE INITIALS

Just as the initials of the English examples \textit{frig}, \textit{big}, etc., contrast, as exponents of the s-piece, with the initials of \textit{Sprigg}, \textit{squirm}, etc., as exponents of the s-piece, so all Tibetan dialects also contain initials that, viewed as a prosodically distinct non-cluster type of piece, contrast with the cluster type, but with the difference that the Tibetan dialects have at least four different types of cluster where English has only one (the s). There are two ways of treating the Tibetan clusters and the simple initials that contrast with them. One way would be to begin by recognizing a twofold contrast, of cluster versus simple, and analysing all examples into one or the other prosodic class by reference to a two-term system (cluster, simple); the next stage would be to make further distinctions within the cluster class. For Balti, for example, a further system, a seven-term sub-system, is to be stated for cluster-piece lexical items; and the relations of the two systems would be as shown in the following diagram:

\[
\text{initial system (2-term)}
\]

\[
\begin{array}{c}
\text{cluster} \\
\text{simple}
\end{array}
\]

\[
\text{cluster system (7-term)}
\]

\[
\begin{array}{c}
l \ r \ s \ g \ b \ n \ m
\end{array}
\]

Alternatively, the simple initial could be admitted on the same terms as each of the seven types of cluster, as one of eight types of initial, each type being treated as an equal term of a single eight-term system, which could be named the initial system, as in the following diagram:

\[
\text{initial system (8-term)}
\]

\[
\begin{array}{c}
l \ r \ s \ g \ b \ n \ m \text{ simple}
\end{array}
\]

There are occasions when, in any one dialect, it is convenient to group the cluster terms together in contrast with the simple term, as l-cluster initial, r-cluster initial, etc., as opposed to simple initial; but for dialect comparison
the latter analysis, a single system (the initial system), in which the simple
type is a member term of the same system as each of the cluster terms, seems
the more effective, and also makes possible a small economy in the number
of systems that need to be recognized.

Before leaving this topic it is important to define more closely the types of
syllable initial that are classified as ‘simple’; for, though single initial con-
sonants are an obvious candidate for this category, syllables containing more
than one initial consonant are included with them, for reasons to be stated
later in this section. Simple initials are, in fact, of two main phonetic types:
(A), single initial consonants or non-syllabic vowels; (B), sequences containing
a consonant, or two consonants, and r/r or j/j. 8

(A) Single initial consonant (C-) or non-syllabic vowel (h- j- j- w-)

Lexical items that, in a given dialect, invariably have single initial con-
sonants or non-syllabic vowels are classified as ‘simple-initial’, and contrast
with lexical items classified as l-cluster-initial (or, by abbreviation, l-cluster
or l-initial), n-cluster-initial, etc., according to the number and nature of
cluster-initial terms in the initial system of that dialect. Lexical items con-
taining syllable-initial p, ph, b, tf, tfh, d3, h, v, w, and m, for example, as in
Balti pen, phaq, and ba, Lhasa tjam, tfha, and d3a, Golok s6, hag, worket,
and sotfa, and Lhasa mi: ‘target, pig, cow; wife, tea, practise; field, pig,
Tibetan (language), Tibetan tea; eye’ (ben, phag, ba; leam, ja, sbyangs;
zhang, phag, bod-skad, bod-ja; mig), are classified as simple-initial.

(B) Initial sequences containing r/r and j/j (Pr/r Pj/j ptr/r; ptf(h) bd3)

To the simple-initial lexical items of section (A), comprising single con-
sonants and non-syllabic vowels, should be added lexical items that have
certain initial sequences of features: (i) plosive-fricative (Pr/r) and plosive-
non-syllabic-vowel (Pj/j), (ii) plosive-plosive-fricative (ptr/r) and plosive-
affricate (ptf ptf(h) bd3); e.g. (i) Balti (Khapalu) kru kru gri ‘corner, cubit,
knife’ (gru, khru, gri); Golok tr3 tr3: ‘lead, village’ (’khrid, grong); Lhasa
‘la-bri: ba ‘artist’ (lha-bris-pa); Lhasa kji: kji gje: bo ‘middle, dog, king’
(dkyil, khyi, rgyal-po); Golok k suf/zi a ‘fowl’ (qsos-byas); (ii) Golok pt f ru
ptri: ‘offspring, wrote’ (phru(g)-gu, (’bri)/bris); Lhasa kji ptr/ru: ‘puppy’
(khyi-Phrug); Lhasa lo- ptf(h) e(i): ma-ptf/ma-bd3a ‘half-year, peacock’
(lo-phyped, rma-byas). In fact I treat the initial-consonant sequences of section (ii)
(ptr/r ptf(h) bd3) as though they were of the same type as Cr/r and Cj/j of
section (i), i.e. as though they were *pr/r pj/j bj.9 These sequences are marked
by a contrast of aspiration with non-aspiration, as their phonetic symbolization

8 The syllable-initial combinations considered in section (B) contain sounds of the types
classified by Róna-Tas as ‘ oral plosives with -y- postradical ‘ and ‘ oral plosives with -r- post-
radical ‘ (1966, 115–22), and by Burling as ‘ medials ‘ (1967, 14, 17, 20, 23, 26, 29).
9 For the treatment of the alveolar or palatalized-alveolar plosive feature (t d) in these
examples as a glide or junction feature (vyanjanabhakti) to be associated with labial plosion
and alveolar friction (p(t)r p(t)r p(t) t f p(t)f bd3), see Sprigg, 1968a, 163–7, and Sprigg, 1968c,
309–10.
shows. In this respect they resemble the plosive-initial and affricate-initial examples of the single-consonant type included in section (A), e.g. **pen pha:q bo**; **-tjam -tjha -d3i:** and it is by this criterion that I classify the lexical items containing them as simple-initial.

There is an additional criterion of the simple-initial category that has to be applied concurrently with that of the aspiration contrast; it is initial occlusion (**P-**). This supplementary criterion is necessary in order to exclude from the simple-initial category certain nasal-initial lexical items that share the aspiration contrast with the occlusive-initial members of the simple-initial category: (i) **NCV/V**, (ii) **NCC/Ć**; e.g. (i) Golok **mthesmog mda**; **nṭham ndːa:** 'of the thumb, arrow; dance, meet' (**mthe-bo-ʼi, mda**); 'cham, mjaːl'; Balti (Khapalu) (**čln)mitʃun (ba)mdʒok** 'embittered feeling, cow’s tail hair' ([?] -mchin 'liver', **ba-njuf**) (ii) Golok **mtroya mdrj:** 'firm, rice' (**mkhregs-pa, 'bras**), **ŋkjaŋ ŋgjo ńgjo** 'freeze, go, quickly' (**khyags, 'gro, mgyogs-pa**).

There is, however, a nasal-initial consonant sequence that does have a claim to be classified as simple-initial, even though it does not conform to the criterion of that category: contrast of aspiration with non-aspiration. This nasal sequence is Golok **mŋ-**, labial nasality followed by palatal nasality, but only in front-vowel and central-vowel syllables (**e a**), e.g. **mŋe mppa** 'fire, man' (**me mi**): in syllables such as these there is no contrast of **mŋ**- with **m-**, because there is no **m**- (for the reverse of this cf. Balti **me mi** and Lhasa **me mi**). Apart from its nasality the -n of these Golok lexical items corresponds to the -j/f of the sequences of plosive and non-syllabic vowel of section (i) above, e.g. Golok **kje kjiː ˌkje ˈkje** 'dog, by dogs, knife, neck' (**khyi, khyis, gri, ske**), and could be treated as ***mji-**. In syllables containing other types of vowel, though, **mŋ**- does contrast with **m-**, e.g. (open-vowel) **mŋaŋ** 'name' (**ming**) versus **mːʒo** 'many' (**mŋa-po**); and even in syllables containing other front vowels (**E: E**) comparison with other dialects shows that the cluster-initial classification is better allowed to stand at least for this type of lexical item, e.g. **mŋe: mŋenmo** 'tan, supple' (**mnyed/mnyes**, or, perhaps, **mnyel, mnyen-pa**) (cf. Lhasa **-ne;**, and **-kwo-mŋe-ˈbe** 'tanner', **-nem-bo**, tone-1 lexical items, section VI(B), below). In fact it hardly seems worth while to set up a complicated criterion simply in order to admit the non-contrastive **mŋ**- into the simple-initial category when it is limited to such a narrow range of vowels (**e a i**).

In initial sequences containing -r and -j other than those already considered the alveolar fricative or the non-syllabic front vowel is invariably voiced, and there is, consequently, no aspiration contrast (cf. also the English cluster, or **s**, initials of section 1); e.g. Balti **trob drol zbjiang bu spjan ku zdon struŋmo** 'six, walk, bee, wolf, fable, sister' (**drug, 'grul, sbrang-bu, sphyang-ki, sgrung(s), sring-mo**), Golok **rtiː ˈrkoːen** 'son, mount' (**sras, skyon**). There is no difficulty, therefore, in classifying such examples as these as cluster-initial.

Golok lateral initial-consonant sequences **Pj** and **P(a)i** are, however, not so easily classified; they include **k̂̂j gal bl**, e.g. **klaŋa gaˈlan blama bленpo** 'at the stream, region, lama, minister' (**klung-na, gling, bla-ma, blon-po**).
The aspiration feature of the initial of kjona in contrast with the non-aspiration of the initial of ga'lan certainly supports the classification of this pair of lexical items as simple-initial, on the same grounds as for Golok trit and trö: 'lead, village' (‘’khrid, grong’) above; but the aspirated pronunciation alternates with a mixed-feature pronunciation for that same lexical item, voicelessness-voice (xl-), as in xloña, the latter pronunciation being probably the more usual, since only xl- occurred in xlvmkhar ‘näga castle’ (klu-mkhar), the only other example. I assume the kl-initial pronunciation to be due to the influence of the orthography (cf. also my remarks on bi and gal below), and, accordingly, classify lexical items in initial xl (or kl) as cluster-initial. This classification destroys the possibility of pairing kl and xl with gal as aspirate and non-aspirate initials, and requires lexical items in gal- to be classified as cluster-initial too.

Much as alternative initials kl and xl have been observed for the same lexical item, the first lexical item of xloña or kjona, with friction (x) alternating with plosion (k), so the initial plosion (g) of the g-cluster lexical item ga'lan ‘region’ (gling) is matched by friction (r) in other, and corresponding, g-cluster lexical items: re'a'na re'la ‘ox, song’ (glang, glu). The latter type of g-cluster initial, with friction rather than plosion, is supported by such other g-cluster examples as ye'ni: ye'ng y(o)'marvo xe'jak ‘two, eye, red, yak’ (gnyis, mig, dmar-po, g.yag). The same sort of alternation, suggesting either a spelling pronunciation or a tempo difference, has been observed for the initials of blo blama blenpo ‘mind, lama, minister’ (blo, bla-ma, blon-po) too, all three of which correspond to initial bl of the orthography, though one has friction (b) where the other two have plosion (b). The frontness of the vowel in the first syllable of blenpo, as opposed to the backness (o/o) observed in other Golok examples corresponding to -on, e.g. rkjoen rnon ‘mount, blue’ (skyon, sngon), supports my conjecture that this is a spelling pronunciation or a bookish pronunciation modelled on the reading-style pronunciation -on. I therefore propose to treat gal and bl as spelling-pronunciation features, corresponding to colloquial features yl and bl or bl (bl and bl also occur in blafa dalak ‘thigh, destroyed’ (brla-sha, brlags)).

It is only in Golok g-cluster initials containing laterals that there is a

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10 Roerich (1958) records friction, not plosion, for Rebkong Amdo examples corresponding to Written Tibetan giang, gling (pp. 114, 148) and blon-po (p. 149), and ‘la-ma, wla-ma’ as Golok forms for bla-ma (p. 148).

Pulleyblank has pointed out, in correspondence, that the orthographic distinction lh- versus l- might be used to account for kl- versus gl-, the former being interpreted as *g/lh-. The absence of an initial *pl- to match bl- (and of *rlh-, possibly, to match rl-), tells against this interpretation; but, on the other hand, their absence might be associated with the comparative rarity of kl-: Jäschke (1881) gives only 12 entries for kl- as against 31 for gl- (and 41 for lh- as against 130 for l-).

Pulleyblank’s interpretation of kl- would also require me to classify the Golok alternative initials kl and xl not as simple-initial but as cluster-initial; so, too, would Róna-Tao (1966): he classifies klu, with glu and bla-ma, as ‘liquids in radical position’ (pp. 132–3); his post-radicals comprise ‘zero, -y-, and -r-’ but not an -l.
contrast of full voicing (yal) with partial voicelessness (xl); those containing nasals or a non-syllabic vowel are fully voiced: yep y(o)m yaj (for examples see the preceding paragraph). In b-cluster initials containing laterals there is no such contrast at all in nouns; but my material, limited though it is, does show a contrast within the past-tense forms of verbs: partially voiced (H)), fully voiced (θal), e.g. H: ßalak ‘quoted, destroyed’ (blangs, brlags). At first sight, then, this type of contrast might seem somewhat unusual; but in the r cluster containing nasals there are a number of examples of it, whence my suggestion on p. 576 that the mixed-feature type of r cluster (voicelessness-voice) might be treated as a reflex of the *s cluster, and the fully voiced type as a reflex of the *r cluster and perhaps also *l: (i) mixed-feature (ru rn rm), (ii) fully voiced (ru rm); e.g. (i) rnon rnapma rpug s rma e‘ blue, Nyingma, pen, medicine’ (smyon, rnying-ma. smyu(g)-gu, sman); (ii) rrga rpi: rma ‘five, silver, wound’ (lnja, dngul, rmo) (some fluctuation in category was noted for rma: it was also heard as rma). This contrast, in the initial clusters containing a nasal, between a mixed-feature (voicelessness-voice) category and a fully voiced category (ru rna rm versus ru rm) dispels the air of irregularity that would otherwise characterize the mixed-feature initial xl as opposed to the fully voiced initial yal or zal.

This brief examination of the claims of syllable-initial kr kj bj ptr/θ bdʒ dr kJ xl θ(o), etc., to be treated as belonging to the cluster-initial type or to the simple-initial type prepares the ground for the next step, the classification of dialects as ‘cluster’ or ‘non-cluster’ dialects.

III. WORD-INITIAL CONSONANT CLUSTERS, AND ‘CLUSTER’ DIALECTS VERSUS NON-‘CLUSTER’ DIALECTS

Although syllable-initial consonant clusters are a feature of the Lhasa dialect, for example, as well as of the Balti and Golok dialects, there is an important respect in which it differs from them: its initial-consonant clusters are never word-initial (the hyphen preceding them in Appendix B is meant to act as a reminder that they occur only medially; cf. also Sprigg, 1955, 141–2, and 1968c, 310–11). Those Lhasa-dialect lexical items which have syllable-initial consonant clusters in medial position have in word-initial position what are here treated as non-’cluster’ initials, the C-, Cr/θ-, and Cj/θ- of section II(A–B). Thus, the Lhasa-Tibetan lexical item corresponding to Written-

11 From the earlier of the two passages referred to it will be seen that I have never had any hesitation in ascribing the clusters concerned to the initial of the second lexical item of the (medial) junction: an attempt by R. A. Miller (1954) to divide the clusters between the two syllables concerned, allocating part to the syllable final of the former lexical item and part to the initial of the latter, ignores decisive phonetic evidence (vowel features in vowel-final syllables, nasal-final syllables, and labial-stop-final syllables) as well as unmistakable clues in the corresponding Tibetan orthographic forms. For a discussion of the problem raised by these features, in which supporting orthographic evidence is taken into account, see Chang and Shefts, 1965, 1967.
Tibetan zla (Appendix A, col. 4) has a syllable-initial consonant cluster nd medially in 'ho-nde' ['Tibetan] calendar' (hor-zla), but, in word-initial position, a single consonant (d), as in _da~wa_ 'moon/month' (zla-ba). From this alternation of syllable-initial consonant clusters with syllable-initial simple consonants according to place in the word it would be possible to classify such lexical items as the Lhasa -nde/-da as cluster/simple, as opposed to simple/simple, e.g. the lexical item _ta/-da_, in which the simple-initial t of _ta_ 'horse' (rta) alternates with the equally simple-initial medial d of _kje:-da_ 'pack-horse' (khal-rta); but I prefer to treat this alternation as on the phonetic level rather than on the phonological, and state both the nd and the d initial, for example, as complementary phonetic exponents of the n, or n-cluster, term of the Lhasa initial system, one of them, the consonant cluster nd, being a medial exponent, and the other, the single consonant d, being the word-initial exponent. This latter type of analysis, in which a cluster term of a (phonological) 'initial' system (n, in this case) can have among its phonetic exponents a single initial consonant as well as a consonant cluster, has, incidentally, the support of Tibetan orthography: the initial lt of _lta_ (Appendix A, col. 1), for example, is constant in _lta_ 'look' and in _da-lta_ 'now'; but the phonetic interpretation of lt alternates between t in the former word and nd in the latter, between a single initial consonant initially in the word _lta_, and a cluster medially in the word _da-lta_.

In Balti and Golok, as distinct from the Lhasa dialect, the b, g, n, and other appropriate cluster members of each dialect's initial system (except Balti m and n) invariably have a syllable-initial cluster as exponent in word-initial position, and commonly in medial position too, though depending on the type of junction; e.g. word-initial and medial rt in the Balti lexical item _rta_ 'horse' (rta) and _ronrta_ 'riding-horse' (bzhon-venta). In the rest of this article it is convenient to refer to Balti and Golok, and to other dialects of this type, as 'cluster' dialects, and to those dialects, like the Lhasa, Sherpa, and Sikkimese, whose syllable-initial consonant clusters are restricted to medial position, as non-'cluster' dialects.

IV. SYLLABLE-INITIAL CONSONANT CLUSTERS AND TONE

There is a further difference between 'cluster' dialects and non-'cluster' dialects: in the former a prosodic classification in terms of the appropriate cluster member of the 'initial' system is sufficient for any lexical item, as, for example, l-cluster-initial lexical item, r-cluster-initial lexical item, according to dialect, or, alternatively, in the case of those lexical items which have a non-cluster initial consonant or consonants in all circumstances, as simple-initial lexical items; but nearly all lexical items in the latter type of dialect, the Lhasa, for example, or the Sherpa, need not only the appropriate 'cluster' initial classification (or, if appropriate, a 'simple' initial classification) but a tonal classification as well, as 'high-tone' or 'low-tone' (only those lexical items which are grammatically classifiable as particles cannot be given a tonal
A POLYSYSTEMIC APPROACH IN PROTO-TIBETAN RECONSTRUCTION

classification). Thus, the Balti, Golok, and Lhasa-dialect forms corresponding to the Written-Tibetan lexical item zla ‘moon, month’ (Appendix A, col. 4) have ‘initial’ classifications l-cluster, r-cluster, and n-cluster respectively; but the Lhasa-dialect lexical item also has the tonal classification ‘low-tone’ (the reading-style pronunciation of the Written-Tibetan lexical item, incidentally, shares the n-cluster and ‘low-tone’ classifications with the Lhasa dialect, though differing somewhat in the phonetic exponent of n); e.g.

<table>
<thead>
<tr>
<th>Baltic</th>
<th>Golok</th>
<th>Lhasa</th>
<th>Written-Tibetan</th>
</tr>
</thead>
<tbody>
<tr>
<td>ldza-</td>
<td>rdza-</td>
<td>.da-, -nda</td>
<td>.nda-, -nda</td>
</tr>
<tr>
<td>Initial l-cluster</td>
<td>r-cluster</td>
<td>n-cluster</td>
<td>n-cluster</td>
</tr>
<tr>
<td>Tone ‘low-tone’</td>
<td>‘low-tone’</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(B ldzaa, G rdzaa, L .da-wo, W-T .nda-wo ‘moon, month’; L and W-T ‘ho-nda’ [Tibetan] calendar; zla-ba, hor-zla.)

It is a useful precaution to put the two tonal classifications in quotation marks at this stage because a ‘high-tone’ lexical item does not invariably have the higher of the two distinctive pitch levels, nor does the ‘low-tone’ lexical item invariably have the lower: Lhasa Tibetan is highly intonational; and (i), much as in English, the component syllables following the emphasized word of an emphatic clause have the lower pitch (Sprigg, 1954, 143-6); (ii), except as provided for under (i), the second and third syllables of disyllabic and trisyllabic nouns have the higher pitch level. Thus, a ‘high-tone’ lexical item can, under (i), have the lower pitch; and a ‘low-tone’ lexical item can, under (ii), have the higher pitch (Sprigg, 1955, 147-53, or Palmer, 1970, 126-32). It is, perhaps, preferable to use such terms as ‘tone-1’ and ‘tone-2’ rather than ‘high-tone’ and ‘low-tone’, which might be misinterpreted as being purely descriptive and as requiring a constant pitch level, either the higher or the lower, in all circumstances.

It seems to me probable that the initial-consonant clusters that can characterize the second syllable of nouns in the Lhasa dialect, and the resulting higher degree of consonantal differentiation for that syllable as compared with the first, is connected with the non-distinctive high pitch of that syllable: the greater range of initial-consonant features renders the pitch-level distinction, highly functional for the first syllable, less necessary for the second.

V. INITIAL-CONSONANT CLUSTERS AND MONOSYLLABIC LEXICAL ITEMS

My main concern in this article is to advance the thesis that initial-consonant clusters in Tibetan, or, rather, Tibetan syllable-initial features generally, are

12 For tone as a feature (prosody) of the word as a whole rather than of the syllable see, for the verbal phrase, Sprigg, 1954, 151-3, and for the nominal phrase, Sprigg, 1955, 134-5, 148-9 (Palmer, 1970, 112-13, 126-7). Component lexical items of tone-1 and tone-2 words have then to be classified tonally not as syllables but via the tone of the word in which they are exemplified (cf. Sprigg, 1963b, 99). In the case of the disyllabic and trisyllabic noun it follows from the fact that the pitch-level distinction does not apply to the second and third syllables that it is only the first-syllable place that provides the means of classifying a lexical item as ‘tone-1-word’ or as ‘tone-2-word’ (or, briefly, ‘tone-1’ or ‘tone-2’), i.e. a tonal criterion.
better treated not segmentally but unitarily, as applicable *en bloc* to mono-syllabic lexical items, providing an, as it were, supra-segmental scheme of classification with the same status as tonal classification; consequently, one could set up some such equivalence in the prosodic classification of Tibetan lexical items, between dialects, as:

<table>
<thead>
<tr>
<th>type of dialect</th>
<th>prosodic classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>'cluster'</td>
<td>cluster</td>
</tr>
<tr>
<td>non-'cluster'</td>
<td>tonal</td>
</tr>
</tbody>
</table>

Such an equivalence should make inter-dialect comparison easier, and thereby aid the reconstruction of Proto-Tibetan.

The dictionaries provide many lexical items that are current in both 'cluster' and non-'cluster' dialects; and I find it highly suggestive that certain of these lexical items can be pronounced, according to dialect, either tonally or clusterwise, or, indeed, both. The lexical item *zla* that I gave as an example in section IV will serve as an example here too: it can be pronounced (i) clusterwise and non-tonally, as in Balti and Golok, (ii) non-clusterwise in word-initial position but clusterwise medially, and tonally, as in the Lhasa dialect, or (iii) both clusterwise and tonally, as in the reading style of pronouncing Written Tibetan.

My next task is, clearly, to give some indication, even though only partial, of how dialect comparison and the reconstruction of Proto-Tibetan would look if approached from the more syntagmatic standpoint that I am advocating here; but before I do this, I ought first to make it clear that I do not believe such a task to be superfluous. I need to say this because Shafer would have said that we already know what Proto-Tibetan looks like: it is embalmed in the orthographic forms of Written Tibetan (his 'Old Bodish'; Shafer, 1950, 702-3, or 1955, 99). Though I have a high respect for Tibetan orthographic forms, so many of which can be justified from one or other of the contemporary Tibetan dialects, especially Balti and Golok, none of the dictionaries gives a reliable picture of the phonological structure of Written Tibetan during a given *état de langue* (Saussure, 1949, 142–3). Jäschke himself explicitly distinguishes two periods for his Written Tibetan entries (1881, p. iv), and specifies certain entries as being peculiar to the spoken language of Ladakh or other dialect areas, e.g. (p. 228): 'lāda...Ld. frq. for kla..., gła..., zla...'; no doubt he has also included other similar forms that he was unable to identify as such. The surest way of avoiding problems of this sort would be to confine one's orthographic analysis to the orthographic forms of some one single, and lengthy, text, on the assumption that the author or writer had been consistent within it, and that his orthographic forms had escaped emendation by copyists. A dictionary of the forms used in the Kangyur would be a case in point; but, even so, texts are not always internally consistent: F. W. Thomas, for

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13 The hazards of treating Written-Tibetan orthographic forms as a corpus of reliable data receive due emphasis in Miller, 1968, 416–18.
example, gives considerable space to orthographic variation in the lexical items of his Nam text (Thomas, 1948, 118-24).

More important still, perhaps, in the earliest texts, before the development of an orthographic tradition transcending dialectal differences, one is entirely dependent on the phonological acumen of the author or translator, writing at a time when the theoretical bases of phonological analysis and orthographic representation were not subject to the continual scrutiny of linguists, or, rather, of different schools of linguistics, to which they are indeed subject at the present time. Even then, there are, no doubt, linguists who have, in the course of developing a systematic transcription or orthography for a particular Burmese or Tibetan dialect, or a Tibeto-Burman language, shared my experience of hesitating between one symbolization and another, or—worse—being guilty of inconsistencies in symbolization. Such experiences develop a salutary humility in the face of problems comparable to those met by the carvers of the Myazedi inscription, for example, and a sympathy with them in their inconsistencies; but it does not put one under any obligation to follow them when one has the advantage over them in phonological training.14

Having given my reasons for not accepting Tibetan orthographic forms without first testing them against reconstructions based on comparing contemporary spoken-dialect forms I now return to the task of discharging the obligation that lies upon me to illustrate the form that my more syntagmatic, and polysystemic, type of phonological analysis imposes on the phonetic forms of certain typologically extreme Tibetan dialects. In order to do this I need to apply to the syllable initial a number of prosodic systems in addition to the Balti eight-term ‘initial’ system (section II), the Golok six-term (r, g, simple, etc.), and the Lhasa five-term (g, n, simple, etc.) (Appendixes A and B), and, further, to classify lexical items each in accordance with the appropriate term of these systems. Among these further systems are prosodic systems to deal syntagmatically with (i) voicing features and (ii) ‘occlusive’—versus—‘liquid’ features (section VI(A)), with (iii) rounded, front-and-spread, and neutral features, and (iv) features of openness and closeness (section VI(B)). Finally, phonematic systems, restricted, in this article, to initial-consonant systems, are set up for such lexical items as are prosodically comparable.

VI. TONE, AND THE SYLLABLE-INITIAL VOICING PIECE AND ‘OCCLUSIVE’—‘LIQUID’ PIECE

All the Balti l clusters in Appendix A and many of the Balti and Golok r, s, g, and b clusters (those in columns 1-10 and 17-20 of Appendix B) have

14 In a recent article (Sprigg, 1970) I tried to improve on the phonological analysis implicit in the traditional orthographic forms of certain Tibetan verbs, and to give them orthographic regularity, though at the cost of introducing orthographic combinations quite contrary to the orthographic tradition, e.g. ‘z’, ‘zh’, ‘s’, ‘sh’, and ‘r’—where the traditional spelling is ‘dz’, ‘j’, ‘tsh’, ‘ch’, and ‘dr’. For an earlier recognition of the orthographic relations of these pairs of verbal forms and its phonetic significance see Li, 1933, 1959; cf. also Chang, unpublished, pp. II.10; VIII.
either (i) voicelessness throughout the cluster or (ii) voice throughout the cluster; e.g. (i) (Appendix A) Balti ल and ल्स, (Appendix B) Golok ख्स and ल्स; (ii) (Appendix A) Balti ल्द and ल्द्झ, (Appendix B) Golok ग्झ and ल्झ. It is also noteworthy that this alternation in the voicing of the cluster as a whole in l, r, s, g, and b clusters is related to cluster-final plosion, affrication, and friction, but not to cluster-final nasality, lateral stricture, non-syllabic vowel (i), or rolled consonant: clusters of this latter type are either (i) mixed as regards voicing features, being partly voiceless and partly voiced, e.g. Balti झ म खल झ, गळ झ, or (ii) (in Golok only) completely voiced, e.g. नम रम नम, नम नम. This voicing difference is the syntagmatic basis for distinguishing the former type prosodically, under the term ‘occlusive’ (though this is something of a courtesy title for the fricatives that are also included in this class), from the latter, to which the traditional term ‘liquid’ can be applied. Thus, there are ‘occlusive’ l, r, s, g, and b clusters and ‘liquid’ r, s, g, and b clusters (but no ‘liquid’ l clusters); and it is only in the ‘occlusive’ type that voice contrasts with voicelessness as a feature of the whole initial cluster.

The same occlusive-liquid distinction also applies to the Golok n and m clusters (Appendix B); and so does the voicing distinction appropriate to the occlusive type of cluster, but with the following differences: (i) (cols. 1–10) voicelessness in n and m occlusive clusters does not extend to the whole consonant cluster (as in l, r, s, g, and b clusters) but does extend beyond the consonant cluster to the following vowel or consonant, e.g. न्थ न्थ न्थ न्थ, न्थ न्थ न्थ न्थ, as opposed to the fully voiced clusters न्थ न्थ न्थ न्थ न्थ न्थ न्थ with fully voiced vowel or following consonant; (ii) (cols. 11–16) only nasality (न्थ न्थ न्थ) occurs as a liquid cluster-final feature, and only in m clusters, again without the voicing distinction, i.e. without voice in lexical contrast with voicelessness as a feature of the whole cluster.

(A) ‘Voicing’ system

When analyzed prosodically the voicing distinction that characterizes ‘occlusive’ clusters, voice in contrast with voicelessness each as a feature of the whole cluster, yields a two-term ‘voicing’ system, the terms of which are named v (from voice) and v (non-v, from voicelessness). This system is applicable not to the whole syllable but to the syllable-initial part, or piece; but even so, each of the terms can, of course, like the terms of the ‘initial’ system (section II), be used to classify monosyllabic lexical items according as they contain a v or a v syllable-initial piece, whence v-syllable-initial-piece lexical items (or, briefly, v-piece lexical items) and v-piece lexical items.

Corresponding to the v and v classifications that are statable for the ‘cluster’ dialects the Lhasa dialect has classification by tone, into ‘tone-1’ and ‘tone-2’ (or ‘high-tone’ and ‘low-tone’; section IV), with the ‘tone-1’ classification corresponding to the v, and the ‘tone-2’ classification to the v (the initial consonants being, for the Lhasa dialect, single in word-initial position but generally cluster when medial, though 1/-l below is an exception).
Because of the difference that I mentioned at the beginning of this section (VI) between the phonetic expenency of v and v in, on the one hand, Balti 1-, r-, s-, g-, and b-cluster lexical items, and Golok r-cluster, g-cluster, and b-cluster, and, on the other hand, n and m clusters, common in Golok but very rare in Balti, I give two sets of examples, at (1) and (2).

(1) 1-, r-, s-, g-, and b-cluster initial piece
(a) Prosodic correspondences

I have restricted my examples of the 'voicing' and 'tone' correspondences of these five types of cluster piece to (i) the Balti 1-cluster initial piece, with corresponding Lhasa n-cluster piece (with the exception of 1/-1 mentioned above), and (ii) a selection from the Balti b-cluster piece, with corresponding Lhasa b-cluster piece and, in a few instances, simple-initial piece (the first of the alternatives in pairs of Lhasa phonetic features is that which is appropriate to word-initial position, and the latter, also indicated by hyphen, to medial position; matching pitch features have not been symbolized here, but are as described in section IV; see also Appendix A):

(i) Balti 1-cluster piece; Lhasa n-cluster piece or simple-initial piece (only 1/-1)

<table>
<thead>
<tr>
<th>B</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>v-piece</td>
<td>t</td>
</tr>
<tr>
<td>v-piece</td>
<td>ld</td>
</tr>
<tr>
<td>tone-1</td>
<td>t/-nd</td>
</tr>
<tr>
<td>tone-2</td>
<td>d/-nd</td>
</tr>
</tbody>
</table>

Examples

Balti v-piece and Lhasa tone-1

<table>
<thead>
<tr>
<th>B</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jta/Jtas/Jtos</td>
<td>look (pres./past/imperat.)</td>
</tr>
<tr>
<td>ta/te:te:</td>
<td>&quot; (&quot; /&quot; /&quot; /&quot; )</td>
</tr>
<tr>
<td>thanda</td>
<td>now</td>
</tr>
<tr>
<td>Jtjaqs</td>
<td>iron (Khapalu dialect)</td>
</tr>
<tr>
<td>tfa:</td>
<td>&quot;</td>
</tr>
<tr>
<td>gondza</td>
<td>door-bolt</td>
</tr>
<tr>
<td>Jtsap</td>
<td>teach</td>
</tr>
<tr>
<td>lvp</td>
<td>&quot;</td>
</tr>
<tr>
<td>kalvp, kalup</td>
<td>advice</td>
</tr>
</tbody>
</table>

Balti v-piece and Lhasa tone-2

<table>
<thead>
<tr>
<th>B</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>ldag</td>
<td>lick</td>
</tr>
<tr>
<td>da:</td>
<td>&quot;</td>
</tr>
<tr>
<td>tfela</td>
<td>tongue-lick</td>
</tr>
</tbody>
</table>

15 Balti also has 1-cluster initials l and lq (Appendix A), e.g. [ljen][jen] 'heavy', [ltu] 'small pond' (?lteng-ka, gting, ldeng-ka, ldang-ka), lqom tfi 'heavyish', 'bulky' (?ldum, zlum), doubtfully identifiable, in some cases, with entries in ll-, ld-, gt-, etc., in Jäschke, 1881, except for [ltkpa], which seems readily associative with Written Tibetan rlig-pa, Lhasa "rlgba" (section B(26), below).

16 The significance of this alternation in the vowel features of verb lexical items (with matching alternating initial-consonant features) is considered, from the point of view of Lhasa phonology as well as of Tibeto-Burman comparison, in Sprigg, 1963b, 102–5.
but, for the more usual corresponding Lhasa medial syllable-initial nd, cf.

\begin{tabular}{lll}
B & lden & created, complete \\
L & gandé: & joyful, filled with joy \\
B & ldʒøŋ & side, direction \\
L & drepnədʒø: & Sikkim [rice country] \\
B & ldzəa & moon, month \\
L & dawə & \\
\textit{honde} & [Tibetan] calendar & hor-əla
\end{tabular}

(ii) Balti b-cluster piece; Lhasa b-cluster or simple-initial piece

\begin{tabular}{llllll}
B & v-piece & \textit{fi}/ps & \textit{fi}/pj & \\
 & v-piece & bə & bʒ & \\
L & tone-1 & s/-{(p)s} & f/-{(p/b)} & \\
 & tone-2 & s/-{(p)s} & f/-{(p/b)} & \\
\end{tabular}

Examples

Balti v-piece and Lhasa tone-1

\begin{tabular}{ll}
B & \textit{fi}/ps & cloud (Western, 'shade', Jäschke, 1881, 593) \\
L & si:bo & cool \\
\end{tabular}

but cf. also, for Lhasa (no Balti cognate), ps

\begin{tabular}{ll}
sogdu: & (he) welcomes \textit{bsu-gi’-dug} \\
tapso & mounted escort \textit{rta-bsu} \\
B & pʃalba & (verbal noun) diarrhoea \textit{bshal-ba} \\
L & \textit{ʃe} & wash, purge \textit{bshal} \\
\textit{tʃhəʃe}: & washing \textit{chu-bshal} \\
\end{tabular}

Balti v-piece and Lhasa tone-2

\begin{tabular}{ll}
B & bzo & shape, method \textit{bzo} \\
L & so & make \\
\textit{nopʃo}: & shoemaker \textit{dngo-bzo-ba} \\
B & bʒi & four \textit{bʒi} \\
L & \textit{ʃt} & \\
\textit{tʃrop}/\textit{bʃt} & four-cornered \textit{gru-bʒi} \\
\end{tabular}

Reconstruction based on the above tables and on Appendixes A and B gives the following Proto-Tibetan prosodic categories, and their Balti, Golok, and Lhasa reflexes:

\begin{tabular}{llllll}
P-T & B & G & L \\
(i) & *l cluster & l cluster & r cluster & n cluster \\
& *o piece & 'occlusion' & 'occlusion' & 'occlusion' \\
& *v & v piece & v piece & tone-2 \\
& *v & v & v & tone-1
\end{tabular}

\textit{My informant for the Skardu dialect stated a preference for ps and pj; but in his unstudied utterances is and if seemed at least as common. In the Lhasa dialect -bf is a fast-tempo alternative to -pj.}
The reason for designating the set of correspondences shown in section (i) as *l rather than, for example, as *r or *n, following the Golok or the Lhasa type of cluster, are that (i) I have found it more convenient to use *r and *n for sets of correspondences that do not involve a lateral-initial cluster (of which Balti is the only contemporary dialect to provide an example), and (ii) the majority of the corresponding orthographic forms have l-initial clusters: *lt, *ld, *lc, and *lj (see, for *r, section (B26), below, and, for examples appropriate to *n, Sprigg, 1968c, 310–11).

In (ii) a Proto-Tibetan category termed *f (from friction) has had to be distinguished from the *o term in order to accommodate correspondences in which the Balti and the Golok ‘occlusive’ piece correspond not to the Lhasa ‘occlusive’ piece but to the Lhasa ‘liquid’ piece. The criterion that I have used in the Lhasa dialect to distinguish ‘occlusion’ from the ‘liquid’ category is the potentiality of combining equally with word-initial aspiration and non-aspiration (Ph versus P); but word-initial friction combines only with non-aspiration, and has, therefore, been assigned, like nasality and lateral stricture, to the ‘liquid’ category.

There is another respect in which the features compared in section (i) differ from those compared in section (ii): in section (i) Balti and Golok v and v correspond not only to Lhasa tone-2 and tone-1 tonal classifications respectively but also, apart from l-, to word-initial voice and voicelessness in the Lhasa initial consonant, which is either plosive or affricative; in section (ii), on the other hand, in which the Lhasa initials are entirely or partially fricative, only the correspondence with the tone classification applies, because the Lhasa initials are, when word-initial, voiceless, and, when medial, either voiceless or mixed, and without voicing contrast. In this latter respect the Lhasa dialect is, perhaps, less typical of the non-‘cluster’ dialects than Sherpa or Sikkimese: for these two dialects the correspondence of Balti and Golok v and v with word-initial voice and voicelessness respectively applies to the fricative type of initial (section (ii)) as well as to the plosive or affracte type (section (i)); e.g. the tone-2 Sherpa and Sikkimese lexical item zo ‘make’ (bzo), cf. Balti *bzo ‘shape, method’; but Lhasa tone-2 so; the Sherpa and Sikkimese tone-2 lexical item *t ‘four’ (*bshi), cf. Balti *bgi, but Lhasa tone-2 *t; the Sikkimese tone-1 lexical item *sam of *samlo ‘thinking’ (*bsam-blo), cf. Lhasa tone-1 *sam of *samlo; and Sikkimese tone-1 *Je of *Je: ‘to say’ (*bsad-pa), cf. Lhasa tone-1 *Je of *Je:bo.

(b) Phonematic correspondences

(i) A comparison of the three Balti v-v pairs of clusters in section (a) above clearly suggests a three-term C-system for Balti; I symbolize these
three terms as T, Σ, and S. The exponents of each term of this phonematic system comprise whatever phonetic features distinguish each of the three pairs of clusters from the other two:

- **T**: dentality, plosion
- **Σ**: palato-alveolarity, affrication
- **S**: alveolarity, affrication

Each of these five features, it is worth noting, also forms part of the exponency of a prosodic term, the 1 term of the eight-term initial system (section II), which associates syllable-initial lateral stricture with dentality and plosion (It ld), with palato-alveolarity and affrication (Itf ld3), and with alveolarity and affrication (ltls ldz), with the result that each of those five features has been used twice, in the phonematic as well as in the prosodic statement; the balance of the phonetic features, the lateral stricture and the voice and voicelessness features, are exclusive to the prosodic statement, the lateral stricture to the exponency of the 1 term, and the two last features to the exponency of v and v.

In the Lhasa dialect, on the other hand, the corresponding syllable-initial features shown in section (ai), dentality (t/-nd d/-nd), alveolo-palatality (tf/-nd3 d3/-nd3), and alveolarity (1/-1), are exclusively part of the prosodic statement, serving, in intraverbal junction, to link the syllable final of certain preceding lexical items with the syllable initial of their own lexical items: -nd- -nd3- -V:l-, whence three prosodically different types of piece, termed, by reference to corresponding orthographic forms, the t, the c, and the l; e.g.

- **t** -nd-: chändé: wise
- **tshéndó**: colour
- **tshö**: [Gregorian] calendar
- **c** -nd3-: lönd3é: minister
- **l** -V:l-: tshöld3é: blessing

(cf. Sprigg, 1968b, 424, 433, 464–7, 501–8, 511–13, 515–17, 523). In consequence the second-syllable lexical item of all such compounds is given a prosodic classification, according to the type of piece it is exemplified in, and no phonematic system needs to be stated for any of the three shown here: (t-piece) ldan, ndog, zla; (c-piece) chen; (l-piece) rabs (because of considerable diversity in phonetic form each Lhasa lexical item has been distinguished here by the corresponding orthographic form). Thus, the Balti lexical item corresponding to ldan is an example of the T term of the three-term C-system statable for l-initial(-piece) lexical items, but the corresponding Lhasa lexical item is an example of the t prosodic term, while the form corresponding to zla is an example of the S phonematic unit in Balti but a further example of the t prosodic term in the Lhasa dialect.

There are, of course, a considerable number of Lhasa-Tibetan lexical items that I have not observed in that type of intraverbal junction in which they

---

18 On the admissibility, in prosodic analysis, of using a phonetic feature as an exponent of a phonematic unit as well as of a prosodic term see Firth, 1957, 16.
combine, as second syllable, with a lexical item that has the range of final nasal and nasalized sounds n/n/n/n/m/V; but it is a reasonable prediction that all those with a word-initial dental (t th d), alveolo-palatal (t th d3), or lateral (l) either already appear in an example of intraverbal junction unknown to me, or have the potentiality of appearing in newly compounded forms, in the same types of intraverbal junction, t-piece, c-piece, and l-piece respectively, as are exemplified above, and have, therefore, an equal claim with the Lhasa lexical items corresponding to lthan, mdog, and zla above to be classified as t-piece lexical items, or, correspondingly, as c-piece or l-piece, the three terms t, c, and l being members of a system comprising 11 terms in all (junction system; cf. Sprigg, 1968b, 501-33; cf. also, for a corresponding system in Burmese, Sprigg, 1963b, 90-6). It is for this reason, a syntagmatic reason, that t, c, and l appear in the partial phonological formulae for the Lhasa dialect in the table below.

Since my Golok material is far from complete, I have not attempted to classify the Golok cognates of the Balti and Lhasa lexical items either prosodically or phonematically, and have had to be content with merely illustrating the corresponding syllable-initial phonetic features without detailed analysis.

The Balti-Lhasa correspondences, with some support from Golok, give me three sets of correspondences, which I have symbolized for Proto-Tibetan in the table below as the phonematic units *T, *Σ, and *S on the assumption that the Balti is more conservative than the Lhasa dialect.

The following table, then, symbolizes phonetically the exponents of each of the three terms of the Balti phonematic system combined with the exponents of the relevant terms of the two prosodic systems, the l term of the initial system and the v and v terms of the voicing system, and presents these phonematic and prosodic terms as reflexes of reconstructed Proto-Tibetan prosodic terms *l (of an eight-term initial system) and *v and *v (of a two-term voicing system) and phonematic terms *T, *Σ, and *S of the three-term phonematic system statable for the *lo-piece type of lexical item; 19 it also

19 In the Balti phonological formulae of this table the symbol ' o ' (from ' occlusion ') has been enclosed in parentheses because all Balti examples of the l-initial piece are also examples of the o, or ' occlusion ', piece, as opposed to the ' liquid ' piece, as defined at the beginning of this section (VI). Every Balti l-initial piece therefore implies that the lexical item in which it occurs is also, and equally, an example of the occlusion piece (but every example of the occlusion piece is not necessarily an example of the l-initial piece). The *o term of the Proto-Tibetan *lo formulae has not, however, been enclosed in parentheses; the reason for this is that it might well prove to be necessary to recognize a distinction between *o and a contrasting *liquid (*l) category with both of them applicable to the *l (initial) lexical item, whence *lo contrasting with *l. The orthographic combination lnu. of Written Tibetan supports the possibility that some such category as *ll (*l-cluster *liquid-feature) would be needed, though there is no such initial in Balti as *lu, or indeed in any other contemporary dialect known to me (but see Jäschke, 1881, p. xix, under 'Khams'). If such a possibility as *ll (*l-initial *liquid) were reconstructed, its Balti, Golok, and Lhasa reflexes would be

<table>
<thead>
<tr>
<th>*l (initial)</th>
<th>*l (feature)</th>
<th>ex.</th>
</tr>
</thead>
<tbody>
<tr>
<td>B simple</td>
<td>B liquid</td>
<td>B ya</td>
</tr>
<tr>
<td></td>
<td></td>
<td>G rja</td>
</tr>
<tr>
<td></td>
<td></td>
<td>L - rja</td>
</tr>
</tbody>
</table>
gives, as the Lhasa reflexes of *l, the n term and, in one case, the simple term (symbolized as z) of a five-term initial system, n, z, m, b, and g, as the Lhasa reflexes of *ŋ and *v, the tonal classifications 1 and 2 of a two-term tone system, and, as a further Lhasa reflex of *l, the h term of a two-term aspiration system, h and ŋ (cf. Sprigg, 1968b, 625–46) (both word-initial and medial features are illustrated for the Lhasa dialect, in that order):

<table>
<thead>
<tr>
<th>P-T</th>
<th>Balti</th>
<th>Golok</th>
<th>Lhasa</th>
</tr>
</thead>
<tbody>
<tr>
<td>*loŋT</td>
<td>l(o)vT</td>
<td>l</td>
<td>t</td>
</tr>
<tr>
<td>*lovT</td>
<td>l(o)vT</td>
<td>t</td>
<td>2nth</td>
</tr>
<tr>
<td>*lovΣ</td>
<td>l(o)vΣ</td>
<td>1</td>
<td>1nč</td>
</tr>
<tr>
<td>*lovΣ</td>
<td>l(o)vΣ</td>
<td>2</td>
<td>2nč</td>
</tr>
<tr>
<td>*lovS</td>
<td>l(o)vS</td>
<td>t</td>
<td>1zḥ</td>
</tr>
<tr>
<td>*lovS</td>
<td>l(o)vS</td>
<td>dʒ</td>
<td>2nth</td>
</tr>
</tbody>
</table>

(spaces in the Golok column of this table mean that my Golok material does not include an appropriate example).

The specimen lexical items, with corresponding orthographic forms, that have been given in section (ad) above for the Balti and Lhasa prosodic correspondences may stand for the phonematic correspondences in the above table too; and so may the Golok rows of examples at Appendix A, where it should be noted that the Golok example iti: ‘looked’ (blias) in col. 1 of that Appendix owes its i to its being a past-tense form. My material does not, unfortunately, contain the present-tense form; but analogy would lead me to expect rta (cf. rton ‘show’ (ston) and Itan ‘showed’ (bstan), and Sprigg, 1968c, 308–9).

I am obliged to admit, however, that the second syllable of the Golok cognate of da-lta ‘now’, tada or tata, has the simple initial d or t, not the expected r-cluster initial of *tarəta, and this in spite of the Balti It of alta and the Lhasa nd of _thanda.

Analogy would also lead me to expect for the Golok initial ʃ of Appendix A, col. 3, e.g. _op ‘teach’ (bslab(s), slob), an initial *rʃ, i.e. *rʃsop, to match the Golok voiced initial rdʒ of col. 4; but my expectation has clearly been disappointed. Similarly, I should have expected Lhasa initial *t/-nd in col. 3 of Appendix A, i.e. *tʃp, instead of ʃp (tone-1), to match the d/-nd (tone-2) of col. 4. The Golok initial ʃ here suggests an earlier *rl, parallel to the existing rl of rl5: ‘wind’ (rlung), developing to ʃ via r and ʃ (cf. ŋn ŋn ŋm in the final paragraphs of section II).

It is the Lhasa reflex d/-nd of *lovS (and the corresponding zl- of Written Tibetan) and the Golok and Lhasa reflexes of *lovS (ʃ, ʃ/-l) that are difficult to reconcile with the other reflexes; so some indication of the sort of phonetic processes that I would suggest to account for them will not be out of place. In making these suggestions I shall be guided by two principles. One of these is the principle that I put forward in Sprigg, 1968c, in connexion with ‘r’ sounds, that Tibetan abhors the duplication of a feature (‘r’ sound, occlusion, friction) within the syllable initial, and attempts to dispose of one
or other duplicate, thereby also reducing the articulatory complexity of the syllable initial. The other guiding principle is that \textit{vya\=n\=janabhakti}, or glide consonants, are readily developed to link friction (\textit{a s z j}) with oral obstruction (\textit{k g p b m n l}; Sprigg, 1968a, 1968c; cf. also Li, 1933, 147–8; 1959).

In the case of \(*lovS\) and its reflexes the problem is to account for a difference in order of features in the syllable initial: occlusive-fricative (\textit{ldz}) in Balti, but fricative-occlusive, by implication, in the order of symbols in Written-Tibetan \(zl\). In contrast the corresponding Lhasa medial syllable initial \textit{nd} is occlusive only; but it agrees with \(zl\) in being occlusive-final, whereas the Balti and Golok clusters are fricative-final (\textit{idz rdz}). Classical Greek \textit{zêta}, incidentally, provides a striking parallel, with alternative interpretations, as fricative-occlusive (\textit{zd}) or as occlusive-fricative (\textit{dz}) (Allen, 1968, 53–7).

A major reason for allowing myself to be guided by the two principles that I have mentioned is that it enables me to avoid having to resort to metathesis, a concept that encourages one to ignore the articulatory aspects of the problem. Instead I offer a reconstructed phonetic form that transcends the difference between the two orders of features and permits alternative lines of development (\(a\)) and (\(b\)) depending on which of the two duplications of a feature is treated as \textit{de trop} and abandoned, the former in one set of dialects and the latter in the other:

\[
\begin{align*}
1 & \quad 2 & \quad 3 & \quad 4 & \quad 5 & \quad 6 & \quad 7 & \quad 8 & \quad 9 \\
\ast slz & > \ast s(d)lz & > \ast zd\textit{lz} & > \left\{ \begin{array}{l} (a) \ast dlz > \ast dl(d)z > \textit{ldz} > \textit{rdz} \\
(b) \ast zdl > \ast z(d)ld > \ast \textit{ld} > \ast nd > \textit{d/-nd} \end{array} \right. \\
\end{align*}
\]

(by giving a number to each stage I do not mean to imply that alternatives (\(a\)) and (\(b\)) in each column were necessarily synchronic).

(1) In this stage it is reasonable to assume a voiceless initial fricative (\textit{s-}) : it is voicelessness that combines with the liquid feature \textit{m n n r} in Balti \textit{sm sn sq str} ; (2) a \textit{vya\=n\=janabhakti} voiced plosive (\textit{d}) must be assumed at this stage in order to account for the voicing of the \textit{s-} of stage (1) to the \textit{z-} of stage (3) (and, subsequently, the \textit{z-} of \(zl\)) ; for the voice of \textit{z-} requires voice combined with plosion (\textit{d g b}) ; (3) friction (\textit{z}) is duplicated at this stage, but only temporarily; for one or other duplicate will be treated as superfluous; (4) the duplicated initial of stage (3), friction-occlusion-friction, has been simplified to either (\(a\)) occlusion-friction (\textit{dlz}) or (\(b\)) friction-occlusion (\textit{zdl}), the features on which Written-Tibetan \textit{zl-} is assumed to be based ; (5) a further \textit{vya\=n\=janabhakti} \textit{d} arises in both lines of development (\(a\)) and (\(b\)) ; (6) the complex double-plosive initials of stage (5) are simplified, in line (\(a\)) to \textit{ldz-} (occlusive-fricative), as in contemporary Balti, and, in line (\(b\)), to the occlusive-only, but still double-plosive, cluster \textit{ldd} ; (7) in line (\(a\)) Golok develops \textit{r} initial as its reflex of \(*i\) initial, becoming a homophone of its reflex of \(*r\) initial ; in line (\(b\)) the double-plosive cluster of stage (6) is simplified to a single-plosive cluster, perhaps through the lateralization of the former cluster-initial \textit{d-}, and presumably becomes a homophone of a former \(*ld-\) reflex of \(*lovT\) for the Lhasa dialect.
(if the Lhasa dialect had, instead, followed development (a), it would at this stage, presumably, have developed into *ndz- or *nz-, homophonomous with its reflex of *novS, e.g. *nz of _senzom ‘smile’ (zhal-'dzum); (8) under the influence of nd-, the Lhasa and W-T reflex of *novT, the *ld- reflexes of *lovS and *lovT alike are nasalized to nd-, which survives in the reading-style pronunciation used for Written Tibetan; (9) the stage-8 features survive in the Lhasa dialect, but only medially, and in certain types of junction; in word-initial position they are simplified, perhaps through devoicing (nd-), to the partially-voiced single initial consonant (d-) of the present time.

The phonetic processes that I would reconstruct for *lovS and its Balti, Golok, and Lhasa reflexes are somewhat similar:

1 2 3 4 5

\[
\begin{align*}
*\text{s}s & \rightarrow (a) *\text{s}l(t)s & \rightarrow *\text{ll}ts & \rightarrow \text{llts} \\
& \rightarrow (b) *\text{sl} & \rightarrow \left\{ \begin{array}{l}
(i) *\text{pl} & \rightarrow *\text{ll} & \rightarrow \text{l} \\
(ii) \text{l} & \rightarrow \text{ll}\end{array}\right.
\end{align*}
\]

The stages are: (1) friction is duplicated, and therefore due to be simplified. The (a) line of development then goes through stages 2-4 as follows: (2) a vyanjanabhakti t develops; (3) the cluster is simplified to an occlusive-fricative sequence, getting rid of the fricative duplication in the process, perhaps through the lateralization of the former cluster-initial friction; the cluster is now voiceless throughout; (4) the cluster is now further simplified to the form it has in contemporary Balti. The (b) line of development goes through stages 2-5: (2) the cluster is simplified, getting rid of the fricative duplication, to a fricative-obstructive sequence, the features presumably symbolized by the sl- of the orthography; (3) in (ii) the Lhasa initial, and the reading-style pronunciation of Written Tibetan, are simplified to a single consonant, balanced by the additional complexity of a tonal classification (tone-1), while, in (i), Golok is taken to have rhotacized the cluster-initial s of stage (2), under the influence of its r-cluster initial, but probably without voicing it—indeed it would seem more likely to have extended voicelessness to the whole cluster; (4) voicelessness is a feature of the whole cluster, in which the initial has been lateralized; (5) the cluster has been simplified to the single voiceless initial consonant l.

(ii) An examination of the Balti b-cluster-piece examples at (a(ii) above suggests a two-term C-system for lexical items of that prosodic type. I have symbolized these two phonematic units as S and Σ; their phonetic exponents are:

\[
\begin{align*}
S & \text{ alveolarity } \text{ laminality (i.e. blade articulation)} \\
\Sigma & \text{ palato-alveolarity } \text{ apicality (i.e. tip articulation)}
\end{align*}
\]

As in section (i) above I again give a table illustrating the phonetic exponents of each of these two Balti phonematic terms in combination with the phonetic exponents of the b term of the initial system (section II) and of the v and v terms of the voicing system.
Not all Lhasa cognates of Balti b-initial lexical items are also classifiable as b-initial, in terms of the Lhasa-dialect initial system referred to in section (i) above (n, z, b, m, g); some are simple-initial, symbolized as z-piece. Corresponding to the two terms, v and v, of the Balti voicing system Lhasa has, again, the tonal classifications 1 and 2 (I have little doubt that Golok will be found to match Balti in this respect; my data are not sufficient to prove it); and corresponding to the Balti phonematic units Lhasa again has a prosodic term, another of the terms of the 11-term juncture system already referred to in section (i), conveniently symbolized as s. Lexical items of the s prosodic type can be further divided prosodically into y and ŭ according as their syllable-initial consonants are palatal or non-palatal, with matching vowel features, of degree of fronting and closeness (cf. Sprigg, 1968b, palatalization system, 583–93). The y corresponds to the Balti Σ term, and the ŭ to the S. These Balti and Lhasa correspondences, with such support as my limited Golok material affords, are symbolized for Proto-Tibetan, in the following table, by b, o, v, v, s, and Σ. 20

<table>
<thead>
<tr>
<th>P-T</th>
<th>Balti</th>
<th>Golok</th>
<th>Lhasa</th>
</tr>
</thead>
<tbody>
<tr>
<td>*bovS</td>
<td>bovS</td>
<td>f/ps</td>
<td>1b/ţzţy</td>
</tr>
<tr>
<td>bovS</td>
<td>bovS</td>
<td>bţ</td>
<td>2b/ţzţy</td>
</tr>
<tr>
<td>*bovS</td>
<td>bovS</td>
<td>f/pf</td>
<td>1b/ţzty</td>
</tr>
<tr>
<td>*bovS</td>
<td>bovS</td>
<td>bţ</td>
<td>2b/ţzty</td>
</tr>
</tbody>
</table>

(again, as in section (i), a space in the Golok column means that my corpus does not, unfortunately, include an appropriate example). For Balti and Lhasa examples, and corresponding orthographic forms, see section (aii) above, and, for Golok, the following:

İsamšlo/psä:ţlo reflection bsam-blo Lhasa sam- (tone 1)
ţrolžā: good custom srol-bzang
bţi/ɨ four bţhi

In the second of these examples I have had to be content with intraverbal-junction features; but analogy would lead me to expect bţ in word-initial position; cf. Balti bţāmo ‘good’ (bzang-po), and Lhasa saŋ-bo and kje-psā: ‘profit’ (khe-bzang).

(2) n- and m-cluster initial piece

Since (i) the Balti and Lhasa dialects do not have nasal clusters in word-initial position, (ii) nasal clusters in medial position in the Lhasa dialect, though not uncommon, do not distinguish voice and voicelessness, and (iii) the Balti nasal clusters in medial position do distinguish voice and voicelessness but number only six examples, it is more instructive to illustrate the exponents

20 Formulae for the Balti b initial differ from those of the Balti 1 initial (section (i)) in the status of the o (‘occlusive’) term: in the 1-initial formulae the o was placed in brackets because it is invariably implied by the 1 term; in the b-initial formulae, on the other hand, o is not necessarily implied by the b term, because there is a contrasting 1 (‘liquid’) type of piece, bl, e.g. ɨl-, in ɨlā/ţlæs/ţlɔs ‘plait’ (blsë/ţhas) (cf. p. 563, n. 19).
of v and  in the n-cluster and the m-cluster initial piece from Golok. I limit my examples here to the Golok m-cluster piece, with Lhasa m-cluster, n-cluster, and simple-initial correspondences (medial features are again indicated by a hyphen):

<table>
<thead>
<tr>
<th>Golok m-cluster piece</th>
<th>Lhasa m-cluster, n-cluster, or simple-initial piece</th>
</tr>
</thead>
<tbody>
<tr>
<td>G  v-piece mth   mtsh   mtjh   mkh   mtj   mdr</td>
<td></td>
</tr>
<tr>
<td>v-piece md   mz   mg   -nd   d/-nd   ndr</td>
<td></td>
</tr>
<tr>
<td>L  tone-1 th   tsh/-dz   tjh/-d3   kh   t3/-ndr</td>
<td></td>
</tr>
<tr>
<td>tone-2  d/-nd   z   g/-mg   dr/-ndr</td>
<td></td>
</tr>
</tbody>
</table>

Examples

G mthemoga of the thumb mthe-bo'i
L thebo: "" "" ""
G mtsho lake mtsho
L tsho "" ""
-jo mtsh(h)o blue-glittering lake g.yu-mtsho
-kho mz6: armament go-mtshon
G mtjhodmi offering-lamp mchod-me
L tjhe: eat, drink mchod
-tjha ma36: libation of tea ja-mchod
G mkhanpo abbot mkhan-po
-kjem bo "" ""
G mtroya firm mkhregs-pa
L -targ(b)6: "" ""
G mtra6a cord (')phreng-ba
L -tren-a/phen-a "" ""
G -tjha ndr:/a: rosary phyag-(')phreng
-tjha -tr:/a:  
G mda arrow mda'
L da "" ""
-mz nde gun me-nda'
G mzo cross-bred yak mdzo
L zo "" "" ""
-pa-mze: master tailor dbu-mdzad
G mgjoya quick mgyogs-pa
L -gig(b)6: [stone weight] rdo-mgyogs (if this mgyogs is the same)
do mgjo: 
G mdrombo guest mgron-po
L -drem-bo "" ""
drum-bo  
-kodr6: feast sku-mgron
-kodrd6: 

<table>
<thead>
<tr>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>G mthemoga of the thumb mthe-bo'i</td>
</tr>
<tr>
<td>L thebo: &quot;&quot; &quot;&quot; &quot;&quot;</td>
</tr>
<tr>
<td>G mtsho lake mtsho</td>
</tr>
<tr>
<td>L tsho &quot;&quot; &quot;&quot;</td>
</tr>
<tr>
<td>-jo mtsh(h)o blue-glittering lake g.yu-mtsho</td>
</tr>
<tr>
<td>-kho mz6: armament go-mtshon</td>
</tr>
<tr>
<td>G mtjhodmi offering-lamp mchod-me</td>
</tr>
<tr>
<td>L tjhe: eat, drink mchod</td>
</tr>
<tr>
<td>-tjha ma36: libation of tea ja-mchod</td>
</tr>
<tr>
<td>G mkhanpo abbot mkhan-po</td>
</tr>
<tr>
<td>-kjem bo &quot;&quot; &quot;&quot;</td>
</tr>
<tr>
<td>G mtroya firm mkhregs-pa</td>
</tr>
<tr>
<td>L -targ(b)6: &quot;&quot; &quot;&quot;</td>
</tr>
<tr>
<td>G mtra6a cord (')phreng-ba</td>
</tr>
<tr>
<td>L -tren-a/phen-a &quot;&quot; &quot;&quot;</td>
</tr>
<tr>
<td>G -tjha ndr:/a: rosary phyag-(')phreng</td>
</tr>
<tr>
<td>-tjha -tr:/a:</td>
</tr>
<tr>
<td>G mda arrow mda'</td>
</tr>
<tr>
<td>L da &quot;&quot; &quot;&quot;</td>
</tr>
<tr>
<td>-mz nde gun me-nda'</td>
</tr>
<tr>
<td>G mzo cross-bred yak mdzo</td>
</tr>
<tr>
<td>L zo &quot;&quot; &quot;&quot; &quot;&quot;</td>
</tr>
<tr>
<td>-pa-mze: master tailor dbu-mdzad</td>
</tr>
<tr>
<td>G mgjoya quick mgyogs-pa</td>
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<tr>
<td>L -gig(b)6: [stone weight] rdo-mgyogs (if this mgyogs is the same) do mgjo:</td>
</tr>
<tr>
<td>G mdrombo guest mgron-po</td>
</tr>
<tr>
<td>L -drem-bo &quot;&quot; &quot;&quot; drum-bo</td>
</tr>
<tr>
<td>-kodr6: feast sku-mgron</td>
</tr>
<tr>
<td>-kodrd6:</td>
</tr>
</tbody>
</table>
A POLYSYSTEMIC APPROACH TO PROTO-TIBETAN RECONSTRUCTION

In my Golok material there are no examples of an initial cluster mð3. The Golok form corresponding to the initial mj of Written-Tibetan mjal 'meet', which I had expected to yield a Golok m-cluster *md3, in fact yielded the n-cluster pd3 (ndja:), which my informant spelt phonetically as 'ja'; and the limited time available to me did not allow me to test other likely lexical items (Jäschke, 1881, in fact lists only four other items with initial mj).

Golok m-cluster lexical items commonly correspond to Lhasa n-cluster items, as in three of the above examples (mda', 'phreng, mgyon), while 'bras shows evidence for both n-cluster (.Je'ndrs:) and m-cluster (.Ja'mdrs:) classifications. Only two lexical items in the above examples are unequivocally m-cluster in both Golok and Lhasa: mchod, mgyogs; one other, mtsho, shows evidence in the Lhasa dialect for both a m-cluster classification and for a simple-initial classification: 'jo mtsho versus _gja^dzo/_gja^ts3 (rarely also _gja^mzo); the remainder, mthe, mdzo, mkhan, and mkhregs, give no support for any other classification, in the Lhasa dialect, than simple-initial because I have no record of any of them as appearing in intraverbal (or medial) junction, in which type of junction alone could there be criteria of the m or the n cluster in that dialect.

It will be observed that I have left out of account, in the previous paragraph, all lexical items that have initial labiality and plosion:

<table>
<thead>
<tr>
<th>G</th>
<th>v-piece</th>
<th>mph</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>tone-1</td>
<td>ph/-mb</td>
</tr>
<tr>
<td></td>
<td>tone-2</td>
<td>b/-mb</td>
</tr>
</tbody>
</table>

Examples

G  mdamphe'ngs  of a target  mda'-'phen-gyi ('phen/'phangs/phong 'throw')
L  gjvmbi:  target  rgyab'-ben (in which the nasality of the m is attributable to junction with the second of the two lexical items)
G  mbga'tsham  masked dance  'bag'-cham
L  .bak'tjam  "  "
    .Je'-mba  mask (honor.)  zhal'-bag

The reason for this is that in all other m-initial clusters the features associated with m- are non-homorganic (non-labial); but in the n cluster, on the other hand, the nasality is combined with the same place of articulation as the following consonant, including labiality. Tibetan orthography, incidentally,
supports this decision in favour of treating mph- and mb- as n-cluster, by symbolizing them with the a chung (‘ph-, ’b-).

(a) Prosodic systems

Reconstruction based on the above table gives the following Proto-Tibetan prosodic categories, with their Golok, Balti, and Lhasa reflexes:

<table>
<thead>
<tr>
<th>P-T</th>
<th>G</th>
<th>B</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>*m cluster</td>
<td>m cluster</td>
<td>(m cluster)</td>
<td>m cluster</td>
</tr>
<tr>
<td></td>
<td>'simple initial'</td>
<td>'simple initial'</td>
<td></td>
</tr>
<tr>
<td>*o piece</td>
<td>'occlusion'</td>
<td>'occlusion'</td>
<td>'occlusion'</td>
</tr>
<tr>
<td>*v piece</td>
<td>v-piece</td>
<td>(v piece)</td>
<td>tone 2</td>
</tr>
<tr>
<td>*v piece</td>
<td>v-piece</td>
<td>(v piece)</td>
<td>tone 1</td>
</tr>
</tbody>
</table>

(I have placed certain Balti reflexes in parentheses to indicate that the number of lexical items that exemplify them is very small.)

(b) Phonematic systems

If I exclude for the moment those Golok m-piece lexical items which have rhotacized initials (mtʃ mdr), and their Lhasa and Balti cognates (Lhasa tr/-ndr dr/-nd dr/-mdr; Balti (Khapalu) gr br), I need to state a four-term initial-consonant system for Proto-Tibetan *m-cluster *o-piece lexical items: *T, *S, *Σ, and *K. The Golok reflexes of these terms I also symbolize as T, S, Σ, and K; their phonetic exponents are:

- T dentality plosion laminality
- S gingivality affrication ,,
- Σ alveolo-palatality ,, dorsality
- K velarity plosion ,

In the following table I have set its Golok reflex against each of the terms of the Proto-Tibetan *m-cluster *o-piece initial-consonant system, together with the pair of syllable-initial features (v-piece, v-piece) from which the Golok exponents of each phonematic term are drawn; I have also added the syllable-initial features of cognates in the Balti and Lhasa dialects appropriate to word-initial position, and to medial position too where it is instructive to do so:

<table>
<thead>
<tr>
<th>P-T</th>
<th>Golok</th>
<th>Balti</th>
<th>Lhasa</th>
</tr>
</thead>
<tbody>
<tr>
<td>*movT</td>
<td>movT</td>
<td>mth</td>
<td>th</td>
</tr>
<tr>
<td>*movT</td>
<td>movT</td>
<td>md</td>
<td>d</td>
</tr>
<tr>
<td>*movS</td>
<td>movS</td>
<td>mtʃh</td>
<td>tʃh/-mtʃh</td>
</tr>
<tr>
<td>*movS</td>
<td>movS</td>
<td>mz</td>
<td>z</td>
</tr>
<tr>
<td>*movΣ</td>
<td>movΣ</td>
<td>tʃh/-mtʃh</td>
<td>tʃh/-('m)dʒ 1</td>
</tr>
<tr>
<td>*movΣ</td>
<td></td>
<td>dʒ/-mʒ</td>
<td>dʒ</td>
</tr>
<tr>
<td>*movK</td>
<td>movK</td>
<td>mkh</td>
<td>-mkh</td>
</tr>
<tr>
<td>*movK</td>
<td>movK</td>
<td>mg</td>
<td>g</td>
</tr>
</tbody>
</table>

21 The function of the *o and the o in the Proto-Tibetan and the Golok phonological formulae is to distinguish them from the contrasting categories *liquid (‘l) and liquid (l) that would be
Examples are the lexical items given earlier in this section (2), with the addition of the following:

*movS Balti **rgjamthbo** river  \( mtsho \) 'lake'
*movΣ Balti **χlomfšun** embitteredness  \( mchin \) 'liver'
*movΣ Balti **bamd3ok** (Skardu) cow's tail hair  \( mjug \) 'tail'
*movK Balti **χlomkhan** skilled in singing  \( mkhan \) 'skilled'

If I had thought fit to include the rhotacized Golok m-piece initials \( mtr \) and \( mdr \) on the same terms as the non-rhotacized initials \( mth, md, mtsh, mz, \) etc., I should have needed a five-term initial-consonant system instead of the four-term system stated above; and the fifth term might have been symbolized as \( R \). In that case its phonetic exponents would have been:

\[
\begin{array}{cccc}
\text{R} & \text{alveolarity}, & \text{affrication}, & \text{apicality}, \\
\text{drawn from the following Golok initials, with the initials of Lhasa and Balti cognates for comparison, and set against formulae reconstructed for Proto-Tibetan:}
\end{array}
\]


<table>
<thead>
<tr>
<th>P-T</th>
<th>Golok</th>
<th>Balti</th>
<th>Lhasa</th>
</tr>
</thead>
<tbody>
<tr>
<td>*movR</td>
<td>movR</td>
<td>\text{mtř}</td>
<td>none</td>
</tr>
<tr>
<td>*movR</td>
<td>movR</td>
<td>\text{mdř}</td>
<td>\text{gr}</td>
</tr>
</tbody>
</table>

Examples are as above, with the addition of the following from the Khapalu dialect of Balti, and their Golok and Lhasa cognates:

<table>
<thead>
<tr>
<th>Balti</th>
<th>Golok</th>
<th>Lhasa</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>gron</strong> feast</td>
<td>mdrombo guest</td>
<td>.drəm-bo guest</td>
</tr>
<tr>
<td>bres rice</td>
<td>mdr: rice</td>
<td>drc: rice</td>
</tr>
</tbody>
</table>

(Written Tibetan \( mgron, 'brus)\)

However, syntagmatic considerations oblige me to separate these Golok m-cluster initials in \( mtř \) and \( mdř \) from the other four types of m-cluster initial considered above (\( mth, md, mtsh, mz, \) etc.): (i) apico-alveolar friction (\( r \ r \)) combines only with apico-alveolar occlusion, not with lamino-dental plosion, lamino-gingival affrication, or any of the other non-nasal occlusive features of the m cluster; (ii) in reverse, apico-alveolar occlusion occurs only in combination with apico-alveolar friction; and (iii) the vowel that follows \( mtř \) and \( mdř \) needed to deal with such other Golok m-initial clusters as \( mj, mp, mn \) (Appendix B, cols. 11, 12, 14) and reconstructions based on them; but, since the symbols \( T, S, Σ, \) and \( K \) would not be used for those Golok ml (and Proto-Tibetan *ml) phonological formulae, the phonematic symbols \( T, S, Σ, \) and \( K \) imply the prosodic terms \( o \) and \( *o \), and make it possible to dispense with them in all formulae in which these phonematic symbols appear.

22 I should like to include Balti \( -ms \) and \( -md \) in this section, as exemplified by \( snamsol \) 'nostril' \( sna-mtshul \) and \( snamdol \) 'whiskers' ('sna-rdal, sna-rdol'); but the vowel quality of the first syllable, \( a \) rather than \( a \), shows that contemporary Balti at least treats the \( m \) as final in the first syllable, not as initial in the second.
is fully voiced in either case.\footnote{But cf. the partially voiceless vowel of the non-rhotacized initials mth mtsh mtsf mhk, contrasting with the fully voiced vowel of md mz and mg syllables.} These three associations of features provide grounds for distinguishing a rhotacized syllable-initial piece (r piece) from all non-rhotacized (r) types of piece, and, in this instance, the non-rhotacized type of m-cluster piece (mf) analysed phonetically above. Similar considerations also apply to the prosodic analysis of the Lhasa and the Balti dialects, with the significant difference that apico-alveolar friction combines with velarity and labiality in Khapalu Balti (as well as with alveolarity), whence the Khapalu Balti initials kř gr př br.\footnote{The Khapalu-Balti apico-alveolar rhotacized initials are tř and dr, e.g. trok, tri, dře, dra ‘six, smell, demon, equal’ (drug, dri, dře, dra); there is no tř- to match the two voiceless aspirated initials kř and př (cf. also section II(B)).}

Balti, in fact, and especially Khapalu Balti, shows the analysis and comparison of these initials to be less straightforward than one would have expected from Golok, Lhasa, and Skardu-Balti cognates (Golok mť mdr; Lhasa tť dr -n/mdr; Skardu tř dr př br), and reinforces the syntagmatic grounds for distinguishing the rhotacized piece (r) from the non-rhotacized (ř). Khapalu Balti distinguishes two places of articulation, velar and labial (but not alveolar), for voiceless rhotacized initials (kr pr), and three, velar, labial, and alveolar, for voiced rhotacized initials (gr br dr), e.g.

\begin{tabular}{llll}
| křunče | elbow & [ʔmŋhrig-ma wrist] \\
přa | kick & ’phra & gron & feast & mgron \\
přes | rice & ’bras & dra & equal & ’dra \\
\end{tabular}

The problem is to determine which of these Balti initials correspond to the Golok m-cluster initials mť mdr; and my Golok material is too scanty for me to do this with any certainty; however, the Khapalu-Balti apico-alveolar-initial lexical item dra ‘equal’ (’dra) is clearly a cognate of the Golok -ndra of rkoandra ‘image, likeness’ (sku-’dra), not a m-cluster but a n-cluster lexical item. This Khapalu-Balti lexical item, and others in dr-, regularly correspond to n-cluster lexical items in the Lhasa dialect, e.g. kondra ‘image’ (sku-’dra), and the second lexical item of jndra ‘ghost’ (shi-’dre). Khapalu-Balti dr-initial lexical items are therefore excluded from further consideration here, as being in all probability related to Golok n-cluster lexical items (Tibetan orthography also provides support for not associating these Khapalu-Balti lexical items in dr-, and their Lhasa cognates (in dr/-ndr), with the Golok m-cluster type of lexical item: it has no such initials as *mdr and *mthr).\footnote{For an interpretation of ’dr- as *r- see Li, 1959, 58–9, and Li, 1933, 147–8; cf. also Chang, unpublished, pp. IV.5–9.}

My material does not include Golok and Lhasa cognates for relevant Khapalu-Balti lexical items in the voiceless labial initial př, e.g. přa při přet ‘kick, lessen, angle’ (’phra, ’phri, (’)phret); but for Balti lexical items in the voiced labial initial br the Lhasa cognates are n-cluster, and the Golok are m-cluster; e.g.
A POLYSYSTEMIC APPROACH IN PROTO-TIBETAN RECONSTRUCTION

<table>
<thead>
<tr>
<th>Balti, simple-initial</th>
<th>Golok, m-cluster</th>
<th>Lhasa, n-cluster</th>
</tr>
</thead>
<tbody>
<tr>
<td>bras</td>
<td>mdri:</td>
<td>je-ndre:</td>
</tr>
<tr>
<td>bromzses</td>
<td>mdrumba</td>
<td>jA'ndrom</td>
</tr>
<tr>
<td>brok</td>
<td>mdruk</td>
<td>ts'ha-ndru:</td>
</tr>
</tbody>
</table>

(bras, 'bras, bzhes-'bras; 'brum-rjes, 'brum-pa, lha-brum; 'brug, 'brug, bya-'brug). In such a case as this, where the Lhasa dialect supports a *n-cluster reconstruction but the Golok a *m-cluster, one might be tempted to prefer the Golok, as being the more conservative (indeed the m-cluster piece is well on the way to being merged with the n-cluster piece in the Lhasa dialect); but a more significant factor is the labiality feature in the Balti initial br (both Khapalu and Skardu dialects being in agreement here): the two criteria of the Golok and the Lhasa m cluster are (i) that the nasality must be labial, and (ii) that the associated plosive, affricate, fricative, or nasal must be non-homorganic, i.e. non-labial; and the labiality of the Balti plosive-initial br therefore supports a *n-cluster reconstruction via a conjectural homorganic nasal-and-plosive initial *mbr, giving place to *mbdr (cf. also Spigg, 1968a, 165–6, and Spigg, 1968c, 310). The same argument would apply to the Balti voiceless initial pr, with orthographic support: ’phr-, but no *mphr-.

The only Khapalu-Balti rhotacized initials left to be accounted for are, therefore, the rhotacized velar initials, voiceless (kr) and voiced (gr). Here again my scanty Golok material does not include a cognate for any of my Balti lexical items in kr-; though the orthography (mkhrig-ma), if historically sound, supports a *m-cluster reconstruction from Khapalu-Balti krinmS ‘elbow’. In the case of the Balti voiced-initial lexical item gron ‘feast’ (mgron), on the other hand, I have a Golok m-piece cognate in mdrombo ‘guest’ (mgron-) and a Lhasa n-piece cognate in kondrō; kondrō: ‘guest’ (sku-mgron). Here, the labiality argument that I used against a *m-cluster reconstruction from Golok mdri:, Lhasa jendre:, and Balti bras does not apply; and the velarity of the Balti form is consistent with a *m-cluster reconstruction via conjectural non-homorganic nasal-and-plosive initials *mgr and *mgdr.

If these arguments are accepted, Proto-Tibetan lexical items can be reconstructed that are both *m-cluster-initial and *r-piece. The reflex of *r would be r in the Golok, Lhasa, and Balti dialects; but the reflex of *m would be m in Golok, n in Lhasa, and simple-initial in Balti, and, since no paradigmatic (consonantal) differentiation would be possible in the initial of *mr lexical items, there would be no need to set up a reconstructed initial-consonant system for items of this prosodic type:

<table>
<thead>
<tr>
<th>P-T</th>
<th>K-B simple, r</th>
<th>Lha. n-piece, r</th>
<th>Gol. m-piece, r</th>
</tr>
</thead>
<tbody>
<tr>
<td>*mvr</td>
<td>vKr [?] krin(m5)</td>
<td>nvr tраг-(b)ο</td>
<td>mvr mtroya</td>
</tr>
<tr>
<td>*mvr</td>
<td>vKr gron</td>
<td>nvr dreo(gā:)</td>
<td>mvr mdrombo</td>
</tr>
</tbody>
</table>

(Khapalu-Balti 'elbow' (? mkhrig-ma 'wrist'); L, G 'solid' (mkhregs-pa);
The examples that I have given in section (A) will, I hope, suffice to illustrate the ‘occlusive’ type of piece in the Balti, Golok, and Lhasa dialects, and for the Proto-Tibetan *o-feature-piece and *f-feature-piece correspondences, and also for the consequential Balti and Golok voicing systems and the Proto-Tibetan terms *v and *v that are based on them; I now wish to consider the ‘liquid’-feature, or ‘liquid’, type of piece (1 piece), and the Proto-Tibetan *1-piece based on comparison of the 1 piece in the three dialects.

(B) ‘Liquid’ (-feature) piece ; w, y, or a piece

The ‘liquid’ piece (Appendix B, cols. 11–16) differs from the ‘occlusive’ type in the following two major respects: (i) ‘liquid’-piece clusters in Balti belong neither to the completely voiced nor to the completely voiceless type but to a mixed type, in which both voicelessness and voice are represented, and in that order, e.g. ṭy str xj, while in Golok a majority of them will be seen to be completely voiced, e.g. rl ṭ(a)m mn, though some of them contrast with the mixed type of voicing features, e.g. ṭy rm versus ṭy rm; but (ii), whether voiced throughout or mixed, ‘liquid’-feature clusters show no voicing contrast to match the syntagmatic voice-voicelessness distinction on which the ‘voicing’ system (v, v) of the ‘occlusive’-type piece of syllable is based (whence also Proto-Tibetan *v and *v for *o and *f lexical items).

In dialect comparison too, as between Balti and Golok on the one hand and Lhasa on the other, it is noteworthy that lexical items classified in Balti and Golok as ‘liquid’-feature-piece (or 1-piece) cluster-initial lexical items differ from ‘occlusive’-feature-piece (or o-piece) cluster-initial lexical items: the former correspond exclusively to tone-1 Lhasa lexical items, but the latter correspond to either tone-1 or tone-2. The ‘liquid’-piece cluster-initial lexical items are also classifiable as r-, s-, g-, or b-cluster in Balti, and as also r-, g-, b-, or m-cluster in Golok; the Lhasa cognates are in all cases tone-1 and in most cases ‘simple-initial’, though consonant clusters in medial junction (-ηη -μη) provide grounds for classifying a few of them as ‘cluster-initial’: g-cluster (-ηη) and m-cluster (-μη), as opposed to ‘simple-initial’ (ηη -η). I illustrate these correspondences in the following table, and have added to them examples in which a Golok ‘cluster-initial’ piece (r-cluster, g-cluster) corresponds, exceptionally, to a Balti ‘simple-initial’ piece (G ṭy, B ṭ; G ṭ(a)m, B ṭη):

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>G ṭy</td>
<td>ṭy</td>
<td>mn</td>
<td>ṭ(a)m</td>
<td>yηn</td>
<td>yηn</td>
<td>ṭm</td>
<td>rl</td>
<td>ṭstr</td>
<td>ηaj</td>
</tr>
<tr>
<td>B ṭy</td>
<td>ṭy</td>
<td>xm</td>
<td>sm</td>
<td>χl</td>
<td>str</td>
<td>xj</td>
<td>..</td>
<td>..</td>
<td>..</td>
</tr>
<tr>
<td>L ṭη</td>
<td>ṭη</td>
<td>ṭη</td>
<td>ṭη</td>
<td>-η</td>
<td>-η</td>
<td>-m</td>
<td>l</td>
<td>-s</td>
<td>-j</td>
</tr>
<tr>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
</tr>
</tbody>
</table>

Cluster

Simple

tone-1

m-cluster

G-cluster
Examples

<table>
<thead>
<tr>
<th>Golok</th>
<th>Balti</th>
<th>Lhasa</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 rña</td>
<td>yu</td>
<td>-na</td>
</tr>
<tr>
<td>2 rña/rnyö/rgos</td>
<td>-na/-nya/-nya</td>
<td></td>
</tr>
<tr>
<td>3 rï:</td>
<td>xmol</td>
<td>-ny:</td>
</tr>
<tr>
<td>4 mnic:</td>
<td>ñje/ñjes</td>
<td>-ne:</td>
</tr>
<tr>
<td>5 y(ø)ni:</td>
<td>ñis</td>
<td>-ni:</td>
</tr>
<tr>
<td>6 yàng:</td>
<td>ñk</td>
<td>-mi:</td>
</tr>
<tr>
<td>7 ñmen</td>
<td>smen</td>
<td>-mi:</td>
</tr>
<tr>
<td>8 rlposé:</td>
<td>ñk</td>
<td>-mi:</td>
</tr>
<tr>
<td>9 tìrin(ba)</td>
<td>tìrnu</td>
<td>-sim(ba)</td>
</tr>
<tr>
<td>10 nejìw</td>
<td>xju(u)</td>
<td>-jo</td>
</tr>
</tbody>
</table>

('five' (Inga), 'fifteen' (bco-lnga); 'reap' (rnga/brngas/rngos); 'silver' (also, for Balti and Lhasa, 'sweat' (rnyul)) (dnogul), 'Chinese silver' (rgya-dnogul); 'tan' (Balti, 'massage') (mnyed), 'tanner' (ko-mnyed-pa); 'two' (gnyis), 'twelve' (bco-gnyis); 'eye' (mig) (also dmog), 'eye of a needle' (khab-mig); 'medicine' (sman), 'emetic' (skyug-sman); 'air' (rung), 'dust-storm' (thel-rung), 'worm' (srin), 'worm' (srin-bu); 'turquoise' (g.yu), 'turquoise (honor.)' (mgul-g.yu)).

In the absence of fuller Golok material it would be hazardous to give firm reconstructions based on the above correspondences; I wish, however, to propose certain tentative Proto-Tibetan prosodic systems, and try and account for anomalies. These prosodic systems include such terms as: (1) *l-feature, (2) *s-cluster, (3) *r-cluster, (4) *g-cluster.

(1) *Feature system: *l

The other two terms of the Proto-Tibetan *feature system, the *o term and the *f term, so named from ' occlusion ' and ' friction ' respectively, and their reflexes in Balti, Golok, and Lhasa, were stated in section (A) above; corresponding reflexes for the third term of that system, *l (from 'liquid'), are:

*l: Balti l, Golok l, Lhasa l;

the examples given at (2a-c) below, for *s, *r, and *g clusters, will all serve equally well as examples of *l of the *feature system; i.e. as examples of *sl, *rl, and *gl.

(2) *Initial system

The Balti, Golok, and Lhasa cluster initials and simple initials of Appendix B, cols. 11–16 and 21 provide reflexes for the five terms *s, *r, *g, *b, and *m of the seven-term *initial system that combine with the *l term of the three-term *feature system comprising *l, *o, and *f (so named from 'liquid', 'occlusive', and 'fricative'), as *sl, *rl, *gl, *bl, and *ml. The *n term of the *initial system does not combine with the *l term of the *feature system; but the remaining term of the *initial system, also designated *l following the orthography, has already been shown, in (A1a) above, to combine with the *o term of the *feature system, and can probably be held to combine with the *l term.
of the *feature system too, whence *ll, as a means of accounting for the set of
initial-consonant correspondences in Balti *ya, Golok *ra, and Lhasa *ña ‘five’
(*linga) of col. 1 of the examples shown earlier in this section (B) (further
supported by such forms as Jäschke’s ‘Khamsзна’, for a discussion of which
see Róna-Tas, 1966, 27-9, 141-2; cf. also p. 563, n. 19). As examples of the
*initial system in combination with the *l term of the *feature system I take
*s, *r, and *g.

(a) *s

The Balti, Golok, and Lhasa reflexes of the Proto-Tibetan *s-cluster term
of the *initial system for those lexical items which are also *l-feature are:

*1 *s: Balti *s, Golok *r, Lhasa ‘simple’ + tone 1; e.g.

<table>
<thead>
<tr>
<th>Balti</th>
<th>Golok</th>
<th>Lhasa</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 snt(ma)</td>
<td>tna(ma)</td>
<td>ṇṇa(ha)</td>
<td>old</td>
</tr>
<tr>
<td>2 smen</td>
<td>rmen</td>
<td>ṇā(:ma)</td>
<td>Nyingma [order]</td>
</tr>
<tr>
<td>3 snaa</td>
<td>rnap</td>
<td>ṇa(md3o:) (?)</td>
<td>ear²⁶</td>
</tr>
<tr>
<td>4 sngn(po)</td>
<td>(mtsho)šnon</td>
<td>ṇnum(bo)</td>
<td>blue, Blue Lake</td>
</tr>
</tbody>
</table>

(1, rnying-pa, rnying-ma; 2, sman; 3, rna-ba, rna-mchog²⁶; 4, sngn(-po),
mtsho-sngon).

It is noteworthy that the Lhasa tonal reflex of *s is tone 1 when *s is
combined with *l (feature), i.e. *sl, but not when *s is combined with *o
(feature), i.e. *so (Ala). In the latter combination (*so) there is the further
need to refer to the voicing system, according to which tone 1 is the Lhasa
reflex of *v (*sov) and tone 2 the reflex of *v (*sov). This difference emphasizes
the importance of the feature system that can be set up for each of the three
contemporary dialects in relation to the *feature system of Proto-Tibetan,
and the importance of dealing with liquid-initial lexical items separately from
occlusive-initial lexical items in Tibetan phonological analyses and, con-
sequently, in Tibeto-Burman reconstruction.

(b) *r

The corresponding reflexes of *r cluster for lexical items that are also
examples of *l feature, i.e. *rl, seem to be the following, though my scanty
Golok material limits the number of cognates that I can draw on:

*1 *r: Balti *r, Golok *r, Lhasa ‘simple’ + tone 1; e.g.

<table>
<thead>
<tr>
<th>Balti</th>
<th>Golok</th>
<th>Lhasa</th>
<th>English</th>
<th>Written Tibetan</th>
</tr>
</thead>
<tbody>
<tr>
<td>ṭno</td>
<td>ṭno</td>
<td>ṭno</td>
<td>roast</td>
<td>rngod/brngos</td>
</tr>
<tr>
<td>ṭmakha</td>
<td>ṭ/rma</td>
<td>ṭma</td>
<td>wound</td>
<td>rma</td>
</tr>
<tr>
<td>ṭpjox</td>
<td></td>
<td></td>
<td>habit</td>
<td>(b)snyoq ‘crave for’</td>
</tr>
</tbody>
</table>

²⁶ Jäschke, 1881, gives ‘*nám-c’og or ‘ám-c’og’ as colloquial for rná-ba (with an orthographic
form ‘rná-mé’og’, p. 312); but *nā is too ill-supported to be treated as a cognate of Balti *nda
and the reading-style form *na (Roerich, 1958, 134 gives ‘*na’ for Golok); cf. Jäschke, 1881, 605,
*nam-brag and *am-bag, the only other comparable pair.
(Balti has no such initial as \( \text{rn} \); my Golok material does not contain an example of \( \text{r/rn}- \) either, though such an initial is to be expected: Roerich, 1958, 134, gives \( '\text{sna}' \) for 'nose' (\( '\text{sna}' \)).

It is, however, necessary to take note of two types of exception to these reflexes: (i) while the above Balti items are valid for both Khapalu and Skardu dialects, there are a number of lexical items for which Skardu has a \( s \) cluster but Khapalu a \( r \) cluster; e.g.

<table>
<thead>
<tr>
<th>Skardu</th>
<th>Khapalu</th>
</tr>
</thead>
<tbody>
<tr>
<td>s\text{ñit}</td>
<td>r\text{ñit}</td>
</tr>
<tr>
<td>s\text{ñjen}</td>
<td>r\text{ñjen}</td>
</tr>
<tr>
<td>s\text{ña/sñes}s\text{ños}</td>
<td>r\text{ña/ñes/ños}</td>
</tr>
</tbody>
</table>

(ii) corresponding to the Golok \( r \) cluster of \( \text{rni} \): 'silver' (\( \text{dngul} \)) Balti has the \( g \) cluster \( \text{xm-} \) of \( \text{xmlol} \).

(i) Of these two Balti dialects it is the Khapalu that is generally the more conservative in syllable-initial features. Other things being equal, then, it would seem preferable to follow the Khapalu dialect in discrepancies of this sort, and to explain the Skardu \( s \)-cluster forms as an extension of this sort of cluster to original \( r \)-cluster forms under the influence of analogy. Alternatively, it might seem better to allow Written-Tibetan orthography to decide such problems, on the assumption that the orthographic form antedates any confusion between the \( s \) cluster and the \( r \) cluster in Balti; for this purpose one would need to know the date of the sources cited by Jäschke and other lexicographers as authorities for a particular orthographic form, especially where Jäschke, for example, gives both \( s \) cluster and \( r \) cluster for the same lexical item, e.g. (p. 195) \( \text{rnyi} \) and \( \text{snyi} \) 'snare', (p. 134) \( \text{rngas} \) and \( \text{sngas} \) 'bolster', and (p. 427) \( \text{smug-pa} \) and \( \text{rmugs-pa} \) 'fog'. There is also the further problem, illustrated by \( g\text{ñyen} \) above, that the orthography is sometimes opposed to both \( s \) cluster and \( r \) cluster alike.

(ii) On the second point Lhasa-dialect \( \text{\textendash}\text{ñwyl} \) and the spelling-style pronunciation of Written Tibetan as \( \text{\textendash}\text{ñwyl} \) both support the velarity of \( \text{rni} \); against the labiality of \( \text{xmlol} \), and, with the labiality, the \( r \) cluster; for the \( g \) cluster has no velar member (*) in any dialect known to me, nor is there any means of symbolizing such a cluster within the conventions of Tibetan orthography (*\( \text{gng-} \) is not a permitted initial sequence).

I would myself account for the \( \text{xm-} \) of the Balti form \( \text{xmlol} \) 'silver' (\( \text{dngul} \)), as well as for its Balti homophone \( \text{xmlol} \) 'sweat' (\( \text{rngul} \)), by first distinguishing Balti back rounded syllables, under the prosodic term \( w \), from both front spread syllables (or \( y \) syllables) and neutral syllables (or \( a \) syllables) (cf. Sprigg, 1968b, 534–72); the vowels of \( w \) syllables are related to a different set of initial-consonant features from those of the \( y \) or the \( a \) type of syllable, including

\[ \text{Jäschke, 1881, however, gives 'ynul' ['? error for 'yul'] as the Khams form, and 'yul' (or 'xmlul') as the Balti (p. xix). No such initials as '\text{yul}' or '\text{xmlul}' appear in Ray's northern-Kham (Kanze) or southern-Kham (Batang) material (Ray, 1965); but Roerich, 1958, gives '\text{d\u01c0}', '\text{\u01a0\u01d1}', 'd\text{\u01d1}', for Rebkong Amdo, his 't' symbolizing 'un son uvulaire spirantisé' (pp. 28, 115).} \]
among those features uvularity (x y) as opposed to the velarity (x y) of y and a syllables. The two Balti lexical items xmol are w syllables; and it would be tempting to state that the vowels of all Balti w syllables (u o o y) combine with initial x and not with initial r. That, however, is not the case; for Balti has rny- in the lexical item rnyo/rnyos 'roast' (rnyod/rnyogos), which is equally of the w type with the forms xmol, thus proving that it is perfectly possible to have initial rny, a r cluster containing velarity, in the w type of syllable. If rnyo, then why not also *rnyol?

Though rnyo and xmol are indeed both w syllables, they differ from each other in one important respect, degree of stricture: the vowel of the two forms xmol is between close and half-close, and is in any case closer than the vowel of rnyo/rnyos (half-open). It is, therefore, necessary to make a further distinction, that of 'close'-vowel syllables, like xmol, from 'open'-vowel syllables like rnyo/rnyos; but, since a two-term vowel harmony based on degrees of closure is a feature of Balti, one would wish to make a close-open prosodic distinction in any case.28 I would account for the phonetic processes of the change by postulating two close-vowel lexical items *rnyol (dngul, rngul), which developed a heavily lip-rounded initial *rnyw usual with velars but, in this case, carried to the point of labial closure simultaneous with the velar closure (*rnymw-) or following closely on it (*rnymw-); the three-consonant initial cluster was then simplified to the current two-consonant cluster xmr-, still characterized by strong lip-rounding, in which the x takes its voicelessness and friction from the former *r, and its uvularity from the velarity of the former *n combined with backness of vowel o.

Such an articulatory process, confined to syllables with close back rounded vowels, would mean that the Balti r cluster rny- and g cluster xmr- in w-syllable lexical items would be prosodically distributed reflexes of a Proto-Tibetan *rD- in *w-syllable lexical items (*wrD-) as follows:

P-T

<table>
<thead>
<tr>
<th>P-T</th>
<th>Balti</th>
</tr>
</thead>
<tbody>
<tr>
<td>w (syllable)</td>
<td>g cluster</td>
</tr>
<tr>
<td>c(lose)</td>
<td>xmr-</td>
</tr>
<tr>
<td>o(pen)</td>
<td></td>
</tr>
</tbody>
</table>

The g cluster xmr contrasts, in Balti close-piece w syllables, with the r cluster rny; e.g.

<table>
<thead>
<tr>
<th>w (syllable) c(lose piece)</th>
<th>g cluster</th>
<th>r cluster</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silver, sweat</td>
<td>xmol</td>
<td>rmok</td>
</tr>
<tr>
<td>Fog</td>
<td>rny</td>
<td></td>
</tr>
</tbody>
</table>

(dngul, rngul; rmugs-pa 'fog, sluggish').

Although both initials have labial nasality (m) in common, and appear to contrast only in respect of x versus r, if my speculations are correct, it would be fruitless to limit one's interest to those features in isolation: it is as a cluster that xmr is significant, owing the uvularity of the x to a former velar nasal (n),

28 Though not dealt with in detail the significance of degree of vowel closure is indicated in Sprigg, 1967, 189.
the nasality and voice of m also to the former velar nasal, the voicelessness and friction of the x to a former voiceless apico-alveolar roll (r), and, last but not least, the labiality of m to the closeness and lip-rounding of the following vowel (o). It is only in combination, as a cluster (g cluster), that xm makes sense as the reflex of Proto-Tibetan *rD- in the *w type of lexical item, while rm- is the Balti reflex of the contrasting initial *rM- in the same (*w) prosodic type of lexical item, i.e. of *wrM-. It would be vain to expect to be able to account for xmo- as a Balti development of *rø- in a type of syllable other than one with lip-rounding and a close-vowel tongue position among its features, i.e. a syllable that is, prosodically, w (in contrast with y and ø) and ‘close’ (in contrast with ‘open’).

While Balti, if analysed prosodically, offers two different types of cluster as reflexes of Proto-Tibetan *rD-, the complementarily distributed g-cluster and r-cluster reflexes xm and r respectively, as in xmo and rø/ro, Golok, as far as my material goes, has r cluster as its constant reflex. Balti, similarly, appears to have a constant cluster reflex, r-cluster, as reflex of *r in the case of *rM-, and a constant cluster reflex for *r in the case of *rL- too, though in this case the Balti reflex is g-cluster (the corresponding Lhasa reflexes are constant: tone 1 and simple initial). Presented in the form of a table these initial reflexes of Proto-Tibetan *r, constant for Golok and Lhasa but variable for Balti according as the prosodic class of the lexical item is (i) y, ø, or w, and (ii) open (o) or close (c), are:

<table>
<thead>
<tr>
<th>Proto-Tibetan *r</th>
<th>Golok</th>
<th>Balti</th>
<th>Lhasa</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>*yrM-</td>
<td>r</td>
<td>r</td>
<td>-m</td>
<td>hoof</td>
</tr>
<tr>
<td>*srM-</td>
<td>r</td>
<td>r</td>
<td>-ma</td>
<td>wound</td>
</tr>
<tr>
<td>*worM-</td>
<td>r</td>
<td>r</td>
<td>-mø:(mø)</td>
<td>(B) shout</td>
</tr>
<tr>
<td>*wcrM-</td>
<td>r</td>
<td>r</td>
<td>-mø:</td>
<td>(L) curse</td>
</tr>
<tr>
<td>*yrD-</td>
<td>r</td>
<td>r</td>
<td>-n:</td>
<td>fog</td>
</tr>
<tr>
<td>*srD-</td>
<td>r</td>
<td>r</td>
<td>-n:</td>
<td>wither</td>
</tr>
<tr>
<td>*worD-</td>
<td>r</td>
<td>r</td>
<td>-n:</td>
<td>reap</td>
</tr>
</tbody>
</table>

Examples

<table>
<thead>
<tr>
<th>P-T</th>
<th>Golok</th>
<th>Balti</th>
<th>Lhasa</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>*yrM-</td>
<td>r</td>
<td>rmika</td>
<td>-møbe</td>
<td>hoof</td>
</tr>
<tr>
<td>*srM-</td>
<td>r</td>
<td>rma(kha)</td>
<td>-ma</td>
<td>wound</td>
</tr>
<tr>
<td>*worM-</td>
<td>r</td>
<td>røot</td>
<td>-mø:(mø)</td>
<td>(B) shout</td>
</tr>
<tr>
<td>*wcrM-</td>
<td>r</td>
<td>røok</td>
<td>-mø:</td>
<td>(L) curse</td>
</tr>
<tr>
<td>*yrD-</td>
<td>r</td>
<td>røjit</td>
<td>-n:</td>
<td>fog</td>
</tr>
<tr>
<td>*srD-</td>
<td>rø/a/ro</td>
<td>-n:</td>
<td>wither</td>
<td></td>
</tr>
<tr>
<td>*worD-</td>
<td>røø/ro</td>
<td>-n/ø:</td>
<td>reap</td>
<td></td>
</tr>
</tbody>
</table>

29 Khapalu røjitpa, but Skardu snjita, ‘wither, wrinkle’.
The above examples illustrate more especially the importance of distinguishing the w syllable from the other two prosodic types, the y and the a; in other cases it is the y syllable that can usefully be distinguished from the a, especially in connexion with the Golok g cluster and the Balti g and r clusters.

(c) *g

It is the Proto-Tibetan *g cluster that gains from distinguishing the y syllable from the a syllable in Balti and Golok. The grounds for making this distinction are syntagmatic: in Balti, for example, the range of initial consonants that can be associated with the front spread vowels i e is remarkably different from those appropriate to a a a; corresponding syntagmatic relations in Golok are difficult for me to determine from the limited material available to me, especially since lexical items spelt with -ing in Written-Tibetan orthography look as though they would have to be classified prosodically as a-syllable; e.g. ming, shing, rnying 'name, wood, old': Balti y-syllable mun, fdn, snu but Golok (?) a-syllable mnan, fdn, rnan. Apart from the uncertain prosodic status of such Golok lexical items as these there seem to be no obstacles in the way of considering prosodic categories y and a in Balti and Golok to be reflexes, respectively, of Proto-Tibetan *y and *a.

The Golok reflexes of *g are g-cluster for both y and a classes of lexical item (and for the w class too, for that matter); but only the w-syllable Balti reflexes of *g are g-cluster, its y-syllable reflexes being either g-cluster or simple-initial, and its a-syllable reflexes being either g-cluster or r-cluster, as in the following table (the Lhasa reflexes of *g are tone-1 in every case, and simple-initial apart from one g-cluster lexical item):

<table>
<thead>
<tr>
<th>P-T *g *w</th>
<th>Golok</th>
<th>Balti</th>
<th>Lhasa</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>*wcrL-</td>
<td>rnl</td>
<td>rnl</td>
<td>-ny</td>
<td>silver</td>
</tr>
<tr>
<td>*yrL-</td>
<td>rml</td>
<td>rml</td>
<td>-lgbh</td>
<td>testicles</td>
</tr>
<tr>
<td>*grL-</td>
<td>rll</td>
<td>rll</td>
<td>-lapb</td>
<td>vapour</td>
</tr>
<tr>
<td>*wcrL-</td>
<td>rll</td>
<td>rll</td>
<td>-llo</td>
<td>air</td>
</tr>
</tbody>
</table>

(rmig-pa, rma, dmod, rmugs-pa, rnyid, rnga/rngas/rngos, rngo/rngos, dngul (Balti and Lhasa also rngul 'sweat'), rlig-pa, rlangs, rlung).

My material unfortunately contains no Golok cognate in this category; but Roerich, 1958, gives 'rnam' for this lexical item (p. 134).
A POLYSYSTEMIC APPROACH IN PROTO-TIBETAN RECONSTRUCTION

Examples

<table>
<thead>
<tr>
<th>P-T</th>
<th>Golok</th>
<th>Balti</th>
<th>Lhasa</th>
<th>English</th>
<th>Writ. Tib.</th>
</tr>
</thead>
<tbody>
<tr>
<td>*wgL-</td>
<td>Ṽe'le</td>
<td>ḥlu(u)</td>
<td>ḥlo</td>
<td>song</td>
<td>ḡlu</td>
</tr>
<tr>
<td>*wgN-</td>
<td>Ṽe'nu</td>
<td>ṽnot(pa)</td>
<td>ṽne:</td>
<td>harm</td>
<td>ṽn̂d</td>
</tr>
<tr>
<td>*wgY-</td>
<td>Ṽe'ju</td>
<td>ṽju(u)</td>
<td>ṽjo</td>
<td>turquoise</td>
<td>ṽy</td>
</tr>
<tr>
<td>*agL-</td>
<td>Ṽe'laŋ(a)</td>
<td>ṽlaŋ</td>
<td>ṽli:</td>
<td>ox</td>
<td>ṽlaŋ</td>
</tr>
<tr>
<td>*agN-</td>
<td>(?) Ṽe'nām</td>
<td>ṽnam</td>
<td>ṽnam</td>
<td>sky</td>
<td>ṽnām</td>
</tr>
<tr>
<td>*agM-</td>
<td>Ṽe'mak</td>
<td>ṽmaq</td>
<td>ṽma:</td>
<td>army</td>
<td>ṽmāq</td>
</tr>
<tr>
<td>*agY-</td>
<td>Ṽe'jak</td>
<td>ṽjaq/jaq</td>
<td>ṽja:</td>
<td>yak</td>
<td>ṽy</td>
</tr>
<tr>
<td>*ygL-</td>
<td>Ṽe'lu(bu)</td>
<td>ṽlu(bu)</td>
<td>ṽlip(ɡwɔ)</td>
<td>flute</td>
<td>ṽlip</td>
</tr>
<tr>
<td>*ygN-</td>
<td>Ṽe'ni:</td>
<td>ṽnis</td>
<td>ṽni:</td>
<td>two</td>
<td>ṽnis</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(-tɔ)-ɲi:</td>
<td>twelve</td>
<td>bcu-ɲyis</td>
</tr>
<tr>
<td>*ygM-</td>
<td>Ṽe'ɲug</td>
<td>ṽmuk</td>
<td>ṽmi:</td>
<td>eye</td>
<td>ṽmuk</td>
</tr>
</tbody>
</table>

(my Skardu-dialect informant preferred ḡ- to xi- for jaq/jiaq ' yak' (g.yaq), but would accept only xi- in jiaq/jiaq ' precipice' (g.yang) and jia ' rust' (g.ya')).

I have treated ' simple initial' as the Balti reflex of *g in *ygN- and *ygM-above (ɲis, muk); but this choice leaves unaccounted for a single Balti example of Ṽm-: xmt ‘swallow’ (mād). Balti xmt cannot be treated otherwise than as an example of g cluster, supported, in the y type of syllable, by the g-cluster xl- of xlu bü but opposed by the simple initials nj- and m- of njis ‘ two’ (gnyis) and muk ‘ eye’ (mig, occasionally also dmig). It cannot, though, claim the support of the Balti g cluster Ṽm- of the w type of syllable, as in xmol ‘ silver’, ‘ sweat’ (dngul, rngul), because I have treated Ṽm- not as a reflex of *g but as a reflex of *r (section (b) above). I have allowed the problem to be decided by the tone of the Lhasa cognate (-mi:), which is not the required tone 1 but tone 2.

There is one other respect in which the division of the reflexes and their examples in the above table into the three prosodic types, w, a, and y, is instructive; this too especially concerns the Golok, Balti, and Lhasa reflexes of *yg. It will no doubt have been observed that Golok initial Ṽen occurs

31 cf. Laufer, 1914, 106-7: ' The form dmig is still found in modern popular texts; for instance twice in the small work Sa bdag klu gūan-gyi byed grol, along with the orthography mig four times.'
twice in the y section of that table; it is, in fact, the only nasal initial in the Golok yg syllable, corresponding to both gny- and (d)m- of the orthography. In the Balti and the Lhasa y syllable, on the other hand, two nasals are distinguished; and this twofold distinction is the basis for the P-T terms symbolized as (*yg) *N and *M, the only two nasal terms of what appears to be a three-term initial-consonant system statable for the *yg syllable: *N, *M, *L.

In the y syllable, therefore, the Golok g cluster does not include labial nasality as a possibility, the only possible nasal being the palatal nasal (n) shown in wən above; but in the Golok a-syllable g cluster not only is a labial nasal possible, e.g. emak ' army ' (dmag), but it seems virtually certain that a more extensive study of Golok than I had an opportunity of making would bring to light a contrasting dental-nasal g cluster (cf. Roerich, 1958: ' ynam ' (p. 134)), and possibly a palatal-nasal g cluster too (cf. the ' ʒnā—cou. Tib. lit. giña'-ba ' given in Roerich, 1958, for the neighbouring Rebkong Amdo dialect (p. 122)), all three within the same prosodic class of lexical item (a-syllable). This would provide three different Golok reflexes for three different nasal terms, symbolized, perhaps, as *M, *N, and *D, of a P-T initial-consonant system appropriate to a *a type of syllable, a quite different story from the *y type of syllable, for which only two nasal terms could be reconstructed, and for which the Golok palatal-nasal g cluster wən has to serve as reflex for *gN and *gM alike:

*ygN- : Gol. g wən, Bal. simple nj, Lha. g tone 1 n/-ŋ
*ygM- : ,, ,, ,, ,, ,, m, ,, simple ,, m

In this respect the Golok y-syllable g-cluster contrasts sharply with y-syllable simple-initial lexical items: in the former, as I have shown, there seems to be only one possible nasal cluster (wən), but in the latter two nasal consonants can be distinguished. On this basis two consonants *N and *M can be distinguished for *simple *y-syllable initials in Proto-Tibetan, each with a distinct reflex, in Golok as well as in Balti and Lhasa:

P-T | Golok | Baltic | Lhasa
---|---|---|---
*y simple N- : y simple N- | n | y simple N- | nj | y
* | | | | [tone 2]
* | | | | [simple]
* | | | | -n
* | | | | -m

Examples

<table>
<thead>
<tr>
<th>P-T</th>
<th>Golok</th>
<th>Baltic</th>
<th>Lhasa</th>
<th>English</th>
<th>Writ. Tib.</th>
</tr>
</thead>
</table>
| *y simple N- | n | simple N- | nj | y | n
| | | | | [tone 2]
| | | | | [simple]
| | | | | -n
| | | | | -m

* 32 Reasons for treating mŋ as m-cluster-initial, in y-syllable examples like these, rather than as simple-initial were given in section II(B) above; for mj and me, as alternative (but non-contrastive) orthographic forms of mi and me cf. Laufer, 1914, 96–7.
Both the *simple and the *g-cluster types of *y-syllable lexical item agree, then, in needing two nasal phonematic units (*N, *M) as members of their *

l-feature (liquid) consonant system. As I have explained, I have had to be cautious over proposing closed initial-consonant systems for prosodically comparable lexical items because the few days that I was able to give to working with my Golok informant were far from being enough to ensure that I had sufficient material for such a purpose; but I hope that I have succeeded, in some measure, in demonstrating that it is rewarding to treat the dialect material, the raw material of reconstruction, within a set of systems rather than a single system. A polysystemic analysis is concerned, within each dialect, with prosodic and phonematic systems; dialect comparison then extends that analysis to the reconstructed form. First to be established for the reconstructed language, in this case Proto-Tibetan, are the reconstructed prosodic systems; phonematic systems (initial-consonant, vowel, and final-consonant, for example) can then follow, each system being set up for, and only for, prosodically comparable lexical items.

This technique of analysis has been demonstrated here from syllable-initial features mainly because of the association of syllable-initial features with tone in Tibetan. I wished to demonstrate what appear to me to be the advantages of classifying lexical items in terms of prosodic systems based on their initial-cluster and other syllable-initial features in much the same way as is more commonly done in tonal analyses.

Though I have dealt in this article with prosodic equivalence between Tibetan dialects in tone and syllable-initial features, it seems to me likely that in other languages a corresponding equivalence could be stated for tone and syllable-final features. The treatment of Ancient Chinese -t, a simple final consonant, as equivalent to a tone by Karlgren, Pulleyblank, and others is very much to the point here, especially, from my point of view, if the final consonant in question could be shown to have characteristic vowel features associated with it that syntagmatically related vowel and final consonant as one of a set of types of syllable final; so too, and with greater significance than for Tibetan, is the study of the syllable final in relation to tone in the Burmese-Lolo branch of Tibeto-Burman.

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33 Discussed in Bodman, 1969, 339-40.
34 For Burmese see Sprigg, 1963b, 89, on the exclusive relationship of the 'k piece' to 'tone 1'; the first-syllable lexical item of the k piece, a k-piece lexical item, can then be classified as being also a tone-1 lexical item (k-piece lexical items are those which are, in certain types of environment, stop-final). For Lolo see Matisoff, 1970.
### APPENDIX A

#### 1 cluster

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>a</th>
<th>b</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bal.</td>
<td>ṭ</td>
<td>ṭd</td>
<td>ṭs</td>
<td>ṭdz</td>
<td>ṭf</td>
<td>ṭd</td>
<td>ṭ</td>
<td>ṭ</td>
</tr>
<tr>
<td>Gol.</td>
<td>(Ḳ)</td>
<td>ṭ</td>
<td>ṭrd</td>
<td>ṭf</td>
<td>ṭd</td>
<td>ṭf</td>
<td>ṭd</td>
<td></td>
</tr>
<tr>
<td>Lha. (a)</td>
<td>ṭ</td>
<td>ṭd</td>
<td>ṭf</td>
<td>ṭd</td>
<td>ṭd</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b)</td>
<td>ṭnd</td>
<td>ṭnd</td>
<td>ṭnd</td>
<td>ṭnd</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(c)</td>
<td>ṭ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>She.</td>
<td>ṭ</td>
<td>ṭd</td>
<td>ṭf</td>
<td>ṭd</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Examples

| Bal. | ṭʦ | ṭd아 | ṭs LAP | ṭdz | ṭf | ṭd | ṭkpa | ṭdɔm |
| Gol. | (Ḳi) | ṭp | ṭrd | ṭfak |
| Lha. (a) | ṭʦ | ṭd | ṭlp | ṭdav | ṭf | ṭd |
| (b) | ṭtspaused | ṭg paused | ṭ | ṭd5i | ṭlub | ṭv |
| (c) | ṭf | ṭ |
| She. | ṭ | ṭ | ṭl | ṭ |

(1(a) 'looked' (biltas), (b) 'now' (da-lta); 2(a) 'lick' (ldaq), (b) 'joyful' (dga'-ldan), (c) 'tongue-lick' (ld-ladu); 3 'teach' (bslab(s)); 4(a) 'moon' (zla-ba), (b) 'Tibetan calendar' (hor-zla); 5(a) 'iron' (lcags), (b) 'tinder-box' (me-lcags); 6 'weight' (ljadi); a, 'testicles' (rlig-pa); b, 'heavyish' ((?) ldum, zlum 'round').

---

25 My Sherpa material includes the compound ṭpo la 'moon' (in a more careful style, ṭpo la), the second lexical item of which cannot be given a tonal classification (see p. 555, n. 12 for the obligatory, and non-distinctive, upper pitch level of the second syllable of disyllabic nouns, which applies to Sherpa equally with the Lhasa dialect). W. W. Glover, (1970), however, quoting Schoetteldreyer, not only gives /'uklaaq/ for 'moon' (p. 66) but also /laa/ for 'month' (transcribed as /la/ in Schoetteldreyer and Hale, 1970, 375). If I am correct in assuming that the second lexical item in my ṭpo la (Schoetteldreyer's /laa/) is the same lexical item as Schoetteldreyer's /laa/ (/laa/) 'month', the lower distinctive pitch level symbolized by /laa/ (or /laa/) would enable me to classify that lexical item as, in my terms, tone-2. The fact that Schoetteldreyer symbolized high pitch for it, as second syllable, in /'uklaaq/ but low pitch in /laa/ or /laa/ would be no obstacle to my tonal classification, because high pitch is in any case obligatory for the second-syllable lexical item of a disyllabic noun. It is also the case that Lhasa Tibetan uses ṭdawela zla-ba for 'moon' and 'month' alike (for the tonal significance of the symbol /q/ in /'uklaaq/ see Pittman, 1970, 5).
APPENDIX B

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| r cluster | r cluster | r cluster | r cluster | r cluster | r cluster | r cluster | r cluster | r cluster | r cluster | r cluster | r cluster | r cluster | r cluster | r cluster | r cluster | r cluster | r cluster | r cluster | r cluster |
| Bal. | ꪉ | ꦍ | ꦍ | ꦍ | ꦍ | ꦍ | ꦍ | ꦍ | ꦍ | ꦍ | ꦍ | ꦍ | ꦍ | ꦍ | ꦍ | ꦍ | ꦍ | ꦍ | ꦍ |
| Gol. | ꪉ | ꦍ | ꦍ | ꦍ | ꦍ | ꦍ | ꦍ | ꦍ | ꦍ | ꦍ | ꦍ | ꦍ | ꦍ | ꦍ | ꦍ | ꦍ | ꦍ | ꦍ | ꦍ |
| Lha. | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ |
| s cluster | s cluster | s cluster | s cluster | s cluster | s cluster | s cluster | s cluster | s cluster | s cluster | s cluster | s cluster | s cluster | s cluster | s cluster | s cluster | s cluster | s cluster | s cluster | s cluster |
| Bal. | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ |
| Lha. | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ |
| g cluster | g cluster | g cluster | g cluster | g cluster | g cluster | g cluster | g cluster | g cluster | g cluster | g cluster | g cluster | g cluster | g cluster | g cluster | g cluster | g cluster | g cluster | g cluster | g cluster |
| Bal. | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ |
| Lha. | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ |
| b cluster | b cluster | b cluster | b cluster | b cluster | b cluster | b cluster | b cluster | b cluster | b cluster | b cluster | b cluster | b cluster | b cluster | b cluster | b cluster | b cluster | b cluster | b cluster | b cluster |
| Bal. | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ |
| Lha. | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ |
| n cluster | n cluster | n cluster | n cluster | n cluster | n cluster | n cluster | n cluster | n cluster | n cluster | n cluster | n cluster | n cluster | n cluster | n cluster | n cluster | n cluster | n cluster | n cluster | n cluster |
| Bal. | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ |
| m cluster | m cluster | m cluster | m cluster | m cluster | m cluster | m cluster | m cluster | m cluster | m cluster | m cluster | m cluster | m cluster | m cluster | m cluster | m cluster | m cluster | m cluster | m cluster | m cluster |
| Bal. | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ | ꦏ |

* Past-tense verb forms.


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A POLYSYSTEMIC APPROACH IN PROTO-TIBETAN RECONSTRUCTION


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