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## Contents

The Limbu s-final and t-final verb roots,
after Michailovsky 1979 and Weidert 1982 [1]

R.K. Sprigg

0.   Taplejung and Panthar dialects

I had originally chosen Taplejung as the most suitable place in Limbuan
for a research programme into the phonetics and phonology of Limbu planned
for the early part of 1956 in order to concentrate on a northern dialect;
but I chanced to meet a young Limbu author and poet, Kajiman Kandangwa, who
persuaded me to go to Panthar instead, where I could count on help from his
friends in studying the language as spoken in the eastern part of the Limbu
area, towards Ilam.  Through Kandangwa I came to make the acquaintance of
the Chief Magistrate of Ilam, Kharga Bahadur Nembang (or Nembahang), better
known at that time as Ilam Double Subbah, who offered me his hospitality at
the village of Sartap, in the Panthar area of the District then known as
Dhankuta, and arranged for one of his relations, the late Randhoj Nembang,
to come over each day from the neighbouring village of Imbung (or Yongbong),
and patiently instruct me in the pronunciation of Limbu, which he knew how
to write in the script of the Limbus, the Kiranti script (cf. Sprigg 1959).

Double Subbah's prestige and support were a big advantage  to me, and
gave my phonological analysis of the verb in the Panthar dialect of Limbu
a flying start; but I have since learnt, from the work of Michailovsky
(1979) and Weidert (1982), that, if I had gone to Taplejung as originally
planned, I should have found the dialects of that northern and north-
eastern area of Limbuan, the Tamur Khola dialects, more regular in the
phonetic exponency of their phonological categories, and therefore probably
more conservative, than the Panthar dialect, on which I had spent four or
five weeks in January and February, 1956 (for an account of part of the
data collected at that time, short-quantity verbs, see Sprigg 1966).

1.   s-final roots, velar

The comparative irregularity in the Panthar dialect that I have referred

tc in section (0) above can be readily seen in certain phonetic features
of the root and suffix in two sub-categories, the velar sub-categories,
of a type of verb root that can conveniently be termed s-final. Indeed
the irregularity is such that, at first sight, 's-final' must seem to be
a misnomer for these Panthar sub-categories because the final part of the
root syllable and the initial part of the suffix in the following examples,
[-kh- -(k)kh- - kh-], do not contain any sound resembling [s] or [S], an
alveolar or an alveolo-palatal fricative; on the contrary, those sequences
of sounds are velar throughout, ending in a voiceless aspirated plosive,
which is preceded by either (i) a long vowel, as in [-V:jg-], (ii) a voice-
less velar plosive, as in [-V(k)kh-] , with the first [k] bracketed to
show that [-kkh-] occurs only in slow-tempo utterances, (iii) a short
vowel and voiced velar nasal, as in [-VNkh-] , and (iv) a long vowel and
voiced velar nasal, as in [-V:Nkh-]; e.g. (column 1: imperative ([-E]);
column 2: 3rd-person object ([-u-/-U-]); column 3: 1st-person past ( [-aN]))

| | | | |
|---|---|---|---|
| i. | [tSi:khE | ?a:khu? | la:khaN] |
| ii. | [HI(k)khE | kElE(k)khu? | lE(k)khaN] |
| iii. | [HINkhE | HINkhUN: | tsUNkhaN ] |
| iv. | [mEdHa:NkhEnnE | kEge:Nkhu: | lo:NkhaN ] |

| | | | |
|---|---|---|---|
| i. | cool it | he pulls it out | I danced |
| ii. | rock it | you turn it over | (he) turned me over |
| iii. | rear him | I brought him up | I wrestled |
| iv. | do not weigh it | you prevented it | I told my name. |

In the above examples the suffix is vowel-initial, [-E], [-u-]/[-U-],
and [-aN], whence the term vowel-initial junction; the roots at (ii) and
(iii) belong, respectively, to the root classes 11 and 12 of Sprigg 1966
(437), which is an analysis of short-quantity verb lexical items only, and
does not, therefore, include long-quantity verbs such as those at (i) and
(iv).

Prompted by the velarity that is such a prominent feature of the junction of root final and suffix initial in velar-final roots such as these I put them into a prosodic class that I termed k (Sprigg 1966, 448-9, but exemplified there only from short-quantity roots, as in (ii) and (iii) above), and thereby separated them from the s category of final that I was setting up to deal with the syntagmatic relations of sibilants in roots containing bilabial and 'tongue-front' consonants.[2] To some extent my reason for keeping the velar type phonologically separate, even though I had realized that these velar-final roots were complementarily distributed in relation to the bilabial-final and 'tongue-front'-final roots, was that the difference between the velars and the two latter was phonetically so great that I felt it would be rather extreme to put them into the same phonological class. It was not until recently that I learnt, from Michailovsky 1979, of the s suffix (Michailovsky prefers to treat -S as a suffix 'attached to Limbu verbal roots' (1)) embracing tongue-back (or velar) root finals equally with 'tongue-front' and bilabial, as transitive versus the intransitive function of his postfinal ∅ (1979, 3, 15-19; of the prosodic class z of Sprigg 1966, 448-9), and versus his T-suffix verbs too (1979, 22-4). In a prosodic analysis such as this, congruence of the phonological with the grammatical level should be allowed to over-ride a difference at the phonetic level, however great that phonetic difference may appear to be.

A more important influence on my analysis at that time, though, was the undue significance that I attached to a speciously orthodox example in my data of a [-ks/S] root, in such forms as [thokSE] 'make (him) fight' [thOksaN] '(he) made me fight' (Sprigg 1966, root class 14 (437)). I now believe this lexical item to be an inter-dialectal loan; but at that time, in my ignorance of the northern Limbu dialects, I felt justified in accepting it as an example, the only velar example, of the s prosodic type of final, and therefore classified it prosodically as -Ks (449-50). That decision forced me to classify the quite numerous examples of [-(k)kh-], etc. (Sprigg 1966, root class 11 (437); e.g. (ii) above) otherwise than

as s-final; but in this article I propose to treat the thOkS/s- lexical item as lying outside what one might call 'original' Panthar Limbu; in which case it should not be allowed to dictate the prosodic and phonematic analysis of the main stratum of that dialect.

2.  s-final roots, (a) bilabial cluster, (b) single alveolar and alveolo-palatal, (c) 'tongue-front', both single and cluster

If, then, I treat the [thOks/S-] verb lexical item as an unassimilated loan from another dialect, it is in the other three phonetic sub-categories of s-final verbs, the bilabial-cluster, the alveolar and alveolo-palatal, and what I have termed the 'tongue-front', especially the two former, that the phonetic justification for the syntagmatic term s is to be found, because the root classes belonging to the two former categories all have either an alveolar or an alveolo-palatal fricative ([s, S]), according to environment, in vowel-initial junction, the junction of the root with a vowel-initial suffix, (a)  [-ps/S-] and [-ms/S-], (b) [-V:s/S-, -Vs:/S:-], and (c) friction ([ -s/S-]) as a component of a voiceless alveolar or alveolo-palatal (aspirated) affricate, [-t̩sh-]/ [-tSh-] , [-(t)tsh-] /[-(t)tSh-], and [-ntsh-] / [-NtSh-] ; e.g. (col. 1: imperative ( [-E]); col. 2: 3rd-person object ([ -u-, -U-]); col. 3: 1st-person past ( [-aN] ))

| a. | i.   | [mEgHi:pSEnnE | kEHa:psu:            | kha:psaN]  |
|    | ii.  | [?ipSE       | thapsUN?            | khEpsaN ]  |
|    | iii. | [ti:mSE      | ti:msu?]            | –          |
|    | iv.  | [tUmSE       | kE?amsu?            | tEmsaN ]   |

|    | i.   | do not be mean     | you made him cry        | I yawned        |
|    | ii.  | sleep              | I throw him (wrestling) | he heard me     |
|    | iii. | smoke (meat)       | he smokes (meat)        | –               |
|    | iv.  | join --- together  | you warm it             | he caught me.   |

The roots at (ii) and (iv) belong, respectively, to the classes 18 and 17 of Sprigg 1966, 437, in which long-quantity verb lexical items, such as those at (i) and (iii), are distinguished but not analysed (433-6).

b.  i.   [jo:SE                  kEjo:su?              jo:saN]
    ii.  [lES:E                  lEs:u?]
    i.      satisfy (him)        you satisfy him       he satisfied me
    ii.     know it              he knows it.

The root at (ii) is an example of root class 19 of Sprigg 1966 (437), classified as s-final on pp. 448-9.

c.  i.   [mEbHe:tShEnnE          phE:tshUN?            (nTNwA)  phe:tshaN]
    ii.  [phɔ(t)tShE             kE:phO(t)tshu?        phɔ(t)tshaN]
    iii. [PENtShE                nOntshu?]             —
    i.      do not forget it     I squash it flat      I forgot
    ii.     employ him           you employ him        he employed me
    iii.    put a finish on it   he keeps it by         —

There are no long-quantity examples of [-NtSh/-ntsh] in my data; the roots at (ii) and (iii) are examples, respectively, of root classes 9 and 10 of Sprigg 1966 (437), but with a change of translation from 'bevel' to 'put a smooth finish on', the sense of the Nepali verb महार्नु

3.  Tamur Khola root-final -S and S-cluster verbs

Michailovsky 1979 does not go into phonetic detail; but the seven types of 'final consonants or clusters' -S, -PS, -TS, -KS, -MS, -NS, and NS, in a complete list of twenty-two (2), seems closely to resemble the seven Panthar s finals exemplified in (1)-(2) above; e.g. CI:KS, A:KS, LA:KS, LEKS, HINS, HA:PS, TUMS, PHOTS, NONS (15, 17-19, 22-4, 26; 'cool, uproot, dance, turn over, rear, cause to weep, assemble (a fire), hire, keep leftovers'). In view of the suspect status of [thOks/S-] in the Panthar dialect, discussed at (1) above, it is interesting to note 'THƆKS "incite to fight"' among his examples.

Michailovsky's examples are drawn from the Tamur Khola dialects only; Weidert's, on the other hand, include both Tamur Khola and Panthar; e.g.

```
P.      cakkhE?,   thE:khE?,   sɔNgHE?⌉
                                        ⌋─  ?ipsE?, ?aapsE?, tEmsE?, seesE?
T.K.    caksE?,    thE:ksE?,   sɔNsE?⌋
```

glossed, respectively, as (Sg. Impv.) wear, tear, sell, sleep, winnow, catch, urinate.

4.    Phonetic development of the Panthar root-final velars

Weidert's Tamur Khola examples, when compared with my Panthar examples, show a noteworthy alternation between a sequence of either a velar plosive (voiceless) or a velar nasal (voiced) and [s] in the former dialect with a sequence of either a velar stop (voiceless), though only in slow tempo, or a velar nasal (voiced) and an aspirated velar plosive (voiceless in my material, [-Nkh], but voiced in Weidert's, -NgH):

|         | i            | ii           | iii          | iv          |
|---------|--------------|--------------|--------------|-------------|
| T. K.:  | -Vks-        | -V:ks-       | -VNs-        |             |
| P.:     | [-V(k)kh-]   | [-V:kh-]     | [-VNkh-]     | [-V:Nkh-]   |

(Tamur Khola phonetic formulae abstracted from Weidert 1982 (5)).

I have observed a very similar alternation to that shown in columns (i) and (ii) above not between two different dialects of one language but within a single dialect, the Balti dialect of Tibetan.   In Balti conditional forms (in [-na]) a velar or a uvular s-cluster verb has alternative final sequences [-ks] and [-kh], or [-Ks] or [-K], e.g.

[JIksna]/[JIkhna]   'jigs-na    if he is afraid
[SaKsna]/[SaKna]   gshegs-na   if he goes (hon.), (Sprigg 1967, 196-7); the alternatives were equally acceptable to my informant.

The type of alternation in the Balti is different from the Limbu because it is consonant-initial ([n-]) where the Limbu is vowel-initial ([E], [u-]/ [U-], [a-]) in the examples at (1) above; but, even so, I believe the process of phonetic development to have been the same.  One possibility,

supported by a comparison of <u>sex</u> and <u>septem</u> in Latin with <u>hex</u> and <u>hepta</u> in Greek (and षष् (<u>sas</u>) and नप्त (<u>Sapta</u>) in Sanskrit) is that the change could have been direct, from local friction at the alveolus ([s]) to cavity friction, the voiceless resonance of the oral and pharyngal cavities as a whole ([h]) through the process of lowering the highest point of the tongue raised, the blade, from the proximity of the alveolus to the position of the appropriate vowel.[3]

On the other hand the velar contact present in [-kh] suggests that the aspiration (cavity friction) might well have developed via velar local friction ([x]), replacing the alveolus as the point of fricative approximation:

$$[-ks] > [-kx] > [-kh ]$$

(for examples of [-(k)kh and [-kh] see section (1), i-ii, above).

In slow-tempo utterances in the Panthar dialect there is, in short-quantity lexical items, the possibility of what appears, at first sight, to be a sequence of velar stop and velar plosive ([-kkh-], of. (1) above); but [-kkh-] is better regarded as an aspirated long plosive ([-k:h-]), balancing the short vowel of short-quantity lexical items such as these (but the plosive is short in fast-tempo utterances: [-kh-]).

To support this interpretation of [-kkh-] as [-k:h-]when preceded by a short vowel I would cite the root-final [-s:]/[-S:] of (2.b) above, corresponding to the [-ss]/[-SS] of Sprigg 1966, root class 19 (436-7), e.g. (vowel-initial junction).

[1ES:E    1Es:UN:    KE1Es:u?]
know it    I knew it   you know it;

the length of consonant is invariably associated with shortness of vowel, and is better symbolized as [-s:]. In corresponding long-quantity lexical items the consonant is short ([s/S]) in association with length of vowel; e.g.

[m :SE             m sUN?            kEm :su?
get him drunk      I get him drunk    you get him drunk.

Root-final  [-V:Nkh]  and  [-VNkh]  cannot be accounted for by exactly
the same process:  While a development of [s] to [h] is as possible for
these nasal finals as for the plosive type, it leaves the velar voiceless
plosive as an intruder.  A phonetically similar voiceless velar plosive
can be observed from some English-speakers intruding in the pronunciation
of **Kingston**, for example, as  [kINkstən]  rather than  [kINstən].  In both
the Limbu and the English the intruding velar plosive shares voicelessness
with the following sound, [s] in English, and [h] *[s]in Limbu, and its
velarity with the preceding sound, together with its oral occlusion
feature.  I therefore see the process as something like the following:

             *[-Ns]        *[-Nks]        [-Nkh].

(for examples see (1), iii-iv above).

I would account for the development of the root-final tongue-front
nasal and (aspirated) affricate cluster,  [-ntsh]/[-NtSh],  from a presumed
earlier *[-ns]/[-NS], in much the same way as I have done for the corres-
ponding velar nasal and (aspirated) plosive clusters through an intrusive
alveolar or alveolo-palatal plosive ([t]/[t]).  Here again English supplies
Something of parallel in the pronunciation of words such as **lunch** and **branch**
with a final nasal-and-affricate cluster ([-ntS]) rather than a nasal-and-
fricative cluster ([-nS]), in which what I take to be an intrusive plosive
([t]) shares its voicing feature, voicelessness, with the following sound,
but its place of articulation, alveolar, and its oral occlusion with the
preceding sound; from the sequence of plosive and fricative an affricate
has developed:

             *[-ns]        *[-nts]        [-ntsh]
            **[-Ns]        *[-NtS]        [-NtSh]

(for examples see (2), b, iii, above).

In this type of root final the aspiration feature ( h ) cannot be
treated as a development from local friction at the alveolus, because

alveolar local friction remains, in the junction, as the fricative element of the affricate. This aspiration feature is quite striking, because aspirated affricates ([tsh, tSh]) do not otherwise occur in Limbu. I would explain it as an automatic accompaniment of the voicelessness feature, as opposed to the non-aspiration that accompanies voice and affrication in intraverbal junction ([-dz-], alternating with voicelessness, [-ts-], in word-initial position); e.g.

[mEdza:tEnnE     tsa:ma?][4]

please do not eat    to eat

(cf. also, for plosives, the alternation of [p] with [b], [t] with [d], and [k] with [g]; e.g.

[p-]          [pi(:)RE]          [t-]          [t (:)j
    [-b-] [mE:bi(:)REnnE]              [-d-] [mE:do:jEnnE]
[k-]        [kENE]
    [-g-] [mE:gENEnnE]

give it, do not give it; dig it, do not dig it; fall, do not fall.

The same explanation and also stand for the remaining tongue-front finals, whether short ([-tsh]/[-tSh]) or long ([-ts:h]/[-tS:h]) affricates: the aspiration automatically accompanies the voicelessness. The length of the closure feature, which I had formerly treated as a difference between and affricate in long-quantity syllables ([-V:tsh]/[-V:tSh]) and a sequence of occlusive and affricate in short-quantity syllables, the occlusive being present only in slow-tempo utterances, [-V(t)tsh]/[-V(t)tSh], I now treat a difference in the length of the affricate, balancing a difference in vowel length, long vowel and short affricate versus short vowel and long affricate (but short in fast tempo):

long quantity:     [-V:tsh]     or     [-V:tSh]
short quantity:    [-Vts(:)h]   or     [-VtS(:)h]
(for examples see (2), b, i-ii above).

5.   The s term of the final prosodic system  phonetic exponents.

The purpose of the s term of the three-term final prosodic system,
s, t, and z, is to associate, syntagmatically, the two different types
of friction, (voiceless) alveolar or alveolo-palatal local friction, on
the one hand, and (voiceless) cavity friction (or aspiration), on the
other, with the appropriate preceding place of articulation, (i) bilabial,
(ii) tongue-front, and (iii) velar, and with the appropriate one of four
different manners of articulation, plosive, nasal, vocalic, taking into
account differences in tempo.  In order to admit the complementarily
distributed Panthar velar root finals, in [-kh], [-(k)kh], and  [-Nkh],
at (1), together with the tongue-front root finals in [-tsh/-tSh],
[-(t)tsh/-(t)tSh], and [-ntsh/-NtSh], at (2.c), which share the
aspiration feature with them, into the same prosodic class, s-final, as
the bilabial-and-fricative cluster root finals, in [-ps/S] and [-ms/S],
at (2.a), and the single alveolar- or alveolo-palatal-fricative root
finals, in [-s/S] and [-s:/S:], at )2.b),[5] separate statements of
phonetic exponency are needed, one for each of the four phonetically
different sets of syntagmatic relationships.  These four complementarily
distributed groups of associated phonetic features can be symbolized, from
imperative and other such vowel-junction forms, as:

i.   [s/S]   with┬[p          as in  [-ps/S]
                 │
                 └[m                 [-ms/S]

ii.─┬[s: S: ]      [V]              [-Vs:/S: ]
    │
    └[s̲/S]         [V: ]            [-V:s/S]

$$[(t)t/(t)t] \text{ as in } [-(t)tsh/(t)tSh]$$

iii.  [sh/Sh] with

| [ nt/N̲t ] | [ -ntsh/N̲tSh] |
|---|---|
| [ (k)k] | [ -(k)kh ] |

iv.  [h]

| [ Nk ] | [ -Nkh], |

in which [ (k)] and [ (t)] are confined both to short-quantity lexical items
and to slow tempo; for examples see, for (i), (2.a) above, for (ii), (2.b)
above, for (iii), (2.c) above, and, for (iv), (1) above (cf. also root
classes 18, 17, 19, 9, 10, 11, and 12 of Sprigg 1966, 437, and, for the
s term of the final system, 448-9).

6.   The t term of the final prosodic system: phonetic exponents.

The prosodic function of the t term, the second of the three terms
comprised in the final system, is to associate root-final non-aspirated
dentality, whether voiceless or voiced, with such preceding place-of-
articulation features within the root final as labiality, velarity, and
(in short-quantity lexical items, and only in slow tempo) dentality, and
with such manner-of-articulation as occlusion and nasality, and also to
associate a root-final voiced alveolar tap[( R )] with a preceding vocalic
articulation.  The three complementarily distributed sets of features
concerned in these syntagmatic relationships can be symbolized phonetically
as follows, from imperative and other such vowel-junction forms:

i.   [t] with

$$\left\{ \begin{array}{ll} [p\ ] & \text{as in } [-pt] \\ [(t)\ ] & [-(t)t\ ] \\ [V\ /\ V{:}\ ] & [-Vt\ /\ -V{:}t\ ] \\ [k\ ] & [-kt\ ] \end{array} \right.$$

$$
\text{ii. } [d] \quad - \begin{bmatrix} [m] \\[12pt] [n] \end{bmatrix} \qquad \begin{array}{l} [-md] \\[12pt] [-nd] \end{array}
$$

$$
\text{iii. } [R] \quad [\overset{\text{,}}{V}(:))//[V:] \qquad [-\overset{\text{,}}{V}(:)R]/[-V:R]; \text{ e.g.}
$$

(s = short quantity; 1 = long quantity)

|       |    |           |           |           |
|-------|----|-----------|-----------|-----------|
| i.    | s: | [ tSEptE  | mE(t)tE   | thOktE]   |
|       | 1: | [ li:ptE  | pa:tE     | tho:ktE]  |
| ii.   | s: | [ jEmdE   | phEndE ]  | −         |
|       | 1: | −         | thO:ndE]  | −         |
| iii.  | s: |           | [ piRE ]  |           |
|       | 1: |           | [ po:RE ] |           |

(i) cut it, say it, fight; be heavy, speak to (him), cook it;
(ii) tattoo him, untie it; mend (clothes); (iii) give it (to him); grow;
(cf. also root classes 2, 4, 6, 16, 8, and 22 of Sprigg 1966, 437, and,
for the t term of the final system 448-9, with this difference: I have
re-classified root class 22 as t rather than as z). There are no
examples of a root-final [Nd] in my material; but Michailovsky 1979 gives
a single example (obscene): CANT, as against seventeen examples of −NT,
but none of −MT. My example [jEmdE] contains the only root in [ −md ] in
my material.

7.    The z term of the final prosodic system: phonetic exponents.

To the third, and last, term of the final system I have, for want of
a better, assigned the letter z, the initial letter of zero. The purpose
of this type of prosodic piece is to associate single consonant sounds with
a preceding vowel (the majority of the phonetic exponents of both s and t,
on the other hand, are consonant clusters; cf. (5) and (6) above). These
consonant sounds are, in imperative forms, and therefore in vowel-initial
junction, two of them plosive, bilabial and velar, one of them an alveolar

flap, and two of them nasal; there is also a syllabic vowel as a root-final possibility accompanied, in slow tempo, by a non-syllabic voiced front spread vowel, but coalescing with the vowel of the suffix syllable in the types of vowel junction stated below.  The nasals are necessarily voiced, for voiceless nasals do not occur in Limbu; the plosives, on the other hand, and the flap type too in the formal scatter of certain lexical items (those of root class 5 of Sprigg 1966, 437; those of root class 7 have voice in all junction contexts), alternate in voicing between voice in vowel-initial junction and voicelessness in consonant-initial junction and in interverbal junction; i.e. they share the voice feature with a following vowel but are otherwise voiceless; e.g. (i) vowel-initial junction, (ii)-(iv) consonant-initial junction, (v) inter-verbal junction,

|       | i      | ii    | iii        | iv      | v        |             |
|-------|--------|-------|------------|---------|----------|-------------|
| [b]   | [jEbE  | jEpma | ?ajEpSi?   | jEppa?  | kEjEp]   | [p/pp]      |
|       | [Ha:bE | Ha:pma| ?aHa:pSi?  | Ha:pa?  | kEHa:p]  | [p]         |
| [g]   | [lagE  | lakma | ?alakSi?   | lakka?  | kElak]   | [k/kk]      |
|       | [pe:gE | pe:kma| ?abe:kSi?  | pe:ka?  | kEbe:k]  | [k]         |
| [R]   | [SERE  | SEpma | ?aSE(t)tShi? | SEtta? | KE:SEt]  | [p/(t)t/tt/t] |
|       | [je:RE | je:pma| ?aje:tShi? | je:ta?  | kEe:t]   | [p/t]       |

| stand   | to stand | we two stand    | I stand    | you stand    |
| cry     | to cry   | we two cry      | I cry      | you cry      |
| lick it | to lick  | it licks us two | it licks me| it licks you |
| go away | to go    | we two go       | I go       | you go       |
| kill it | to kill  | it kills us two | it kills me| it kills you |
| laugh   | to laugh | we two laugh    | I laugh    | you laugh    |

(the short-quantity examples represent root classes 1, 3, and 5 in Sprigg 1966, 437).

The lst-person subject or object examples in column (iv), in which voicelessness ([p, k, t]) precedes a vowel, appear to run counter to the examples in column (i), in which it is voice ([b, g, R]) that precedes a vowel; but it seems from comparison with the behaviour of open-syllable roots in this type of junction that it is to be regarded as consonant-initial junction: the initial consonant of the suffix (lst-person subject or lst-person object) is [? ] in such examples as [ wA:?a?, Si:?a?], 'I sit', 'I die'. Occasionally I have observed a glottal plosive in this type of junction even when the root is a closed syllable; e.g. [thUmm ?ah], usually [thUmma?], 'I am strong', [lamm ?ah], usually [lamma?], 'I ---' obscene. It seems clear, therefore, from internal evidence, that forms such as [jEppa?] and [ Ha:pa? ] above have developed from *[jEp?ah] and *[Ha:p?ah], in which the root-final stop was not only in junction with a suffix-initial consonant but shared voicelessness with it (cf. also Weidert 1982 for comparative evidence from other dialects: 'the vowel /-a/ is followed by a glottal stop in the Pantharay dialect, whereas it is preceded by glottal stop in most of the Tamor Khola dialects - - -

Pantharay    [ kENa? ] = kEN-a?, vs.
Tamor Khola  [ kEN?a ] = kEN-a.

In the Hangpang dialect of Tamor Khola the glottal stop gets further weakened and assimilates loosely to the velar nasal, =[kEN-?a] =[kENNa].'
(8).

For the predominantly plosive types of final shown above, voice and voicelessness are a function of type of junction, and, therefore, in complementary distribution; but the remaining types of z-final root have a constant voicing feature, voice, in consonant-initial and interverbal junction as well as in vowel-initial junction; e.g.

| [ m ] | [1EmE | 1Emma | ?alEmSi? | 1Emma? | kElEm ] | |
|---|---|---|---|---|---|---|
| [ N ] | [kjENE | kENma | ?agENSi? | kjENNa? | kEgEN ] | |
| [ R ] | [tARE | tc̣mma | ?adc̣NtShi?˙ | tcɔnna? | kjE:dcn ] | [ m/<u>N</u>/n ] |
| [ V̌(j) ] | [tO(j)E | tO:ma? | ?adc?esu?] | | | V: |
| [ V̌j ] | [tOjE | tO:ma? | ?adO:su? ] | | | V: |
| | [wʌjE | wA:ma? | ?awA:Si? | wA:?a? | kEwA:?] | |
| [ j ] | [tjEh | ta:ma(?) | ?ada:Si? | ta:?a? | kEda:] | |
| – | [jEh | ju:ma | ?aju:Si? | ju:?a? | kEju:] | |
| – | [tSEh | tsa:ma? | ?adza:su?] | | | |
| – | [SE | Si:ma | ?aSi:Si? | Si:?a? | kESi:?] | |

| be lazy | to be lazy | we two are lazy | I am lazy | you are lazy |
|---|---|---|---|---|
| fall down | to fall | we two fall | I fall | you fall |
| scold him | to scold | he scolds us two | he scolds me | he scolds you |
| dig | to dig | we two dig it | | |
| sew it | to sew | we two sew it | | |
| stay | to stay | we two stay | I stay | you stay |
| come here | to come | we two come | I come | you come |
| come down | to come down | we two come down | I come down | you come down |
| eat it | to eat | we two eat it | | |
| die | to die | we two die | I die | you die |

(the verb lexical items of lines 1-4 are examples of the root classes
15, 13, 7, and 21 of Sprigg 1966, 437). The verb in line 6, [ w -/wA:] ,
had also been included there as an example of root class 20; but I now
realize that it should have been treated as a long-quantity root, and as
not comparable, therefore, with the other roots of p. 437, which were
intended to be short-quantity only. The same correction applies to the
various examples of [ t -/t :-] on p. 436, where it is incorrectly given
as an example of the s (short) term of the quantity system; it ought to
have been classified as l (long).

I have thought it advisable to give seven sets of examples of the open-syllable type of lexical item, on lines 4-10, in order to account for a wide degree of phonetic variation in their vowel-junction forms (col. (i)). All the other types of junction (cols. (ii)-(v)) show length of vowel ([-O:], [-A:] etc.), as one would expect in a long-quantity root; but the examples in col. (i) show shortness of vowel, at one extreme, and, at the other extreme, co-alescence with the vowel of the suffix, resulting in a monosyllable.

Instead of a detailed fourfold prosodic statement I will briefly state the phonetic facts on which such a statement would be based:

i. where the lexical item has lip-rounding (and therefore backness) as a vowel feature in junction of types (ii)-(v), consonant-initial and interverbal, the vowel is syllabic in vowel-initial junction (col. (i), though short, as in lines 4-5 ([ tO:-/tO-], [ tO:-/tO-]), unless

ii. the lexical item has syllable-initial lip-spreading ([j-]), in which case it coalesces, as in line 8 ([ju:-/j-], not * jujE ); but

iii. if the lexical item has lip-spreading (and therefore frontness) as a vowel feature in junction of types (ii)-(v), it is either non-syllabic front spread, as in the dental-initial lexical item of line 7 ([tj-] ) in type-(i) junction, or it coalesces with the vowel of the suffix, in a monosyllable, as in lines 9-10, containing [ tSE ] and [[SE], presumably from *[tsaE] and *[SiE], unless

iv. that lexical item has lip-rounding ([w-]) as a syllable-initial feature (and therefore backness, [ A:/ ], as a vowel feature), in which case its vowel is syllabic, as in line 6; for *[wjE ] is an impossibility.

8. Revision of Sprigg 1966 as regards the s and t terms of the final system (448-9).

In Sprigg 1966 (which deals only with short-quantity lexical items in detail) I stated a prosodic system of four terms, s, t, z, and k, the final system, in order to deal with syntagmatic relations among consonants in root-final clusters and between single consonants and vowels (448-9). The presumed phonetic development of *[-ks] and *[-Ns] to [-(k)kh] and [-Nkh] in the Panthar dialect, discussed in (3)-(4) above in comparison with the Tamur Khola dialects, has decided me in favour of reducing the membership of that system from four to three by absorbing the former k term, appropriate to root classes 11 and 12 (p. 437), e.g. [-(k)kh] and [-Nkh], in the s term. This re-classification has meant changing the phonetic exponency of the s term, in (b) above, in order to accommodate the complementarily distributed velars, at (iv), as fellow members with the bilabial clusters [-ps] and [-ms], (root classes 18 and 17), at (i), and, at (iii), the tongue-front finals, e.g. [-(t)tsh/-(t) tSh] and [-ntsh/-NtSh] (root classes 9 and 10).

This revision will mean that the phonematic units K and N of my former statement, Kk and Nk, will now be re-classified as Ks and Ns; but the phonetic exponents of each of these two phonematic units will remain the same:

K: voicelessness + occlusion ([k']; slow-tempo only)

N: voice      + nasality  ([N]); e.g.

K: [HI(K)khE] N: [HINkhE] ('rock it', 'rear him'; root classes 11 and 12 respectively).

The phonematic units -Ts and -Ns of Sprigg 1966 (449), and their phonetic exponents, remain as stated there, except that the phonetic exponent ascribed to -T, voicelessness + occlusion ([t']), must be stated

as limited to slow-tempo utterances.  The phonematic units -Ps and
-Ms, and their phonetic exponents, remain as stated (450).

A second, and consequent, change in Sprigg 1966 (448-9) will be the
removal of root class 14, stated there as -Ks, e.g. [ mE:tHOkSEnnE ] 'do
not make --- fight', from the s term of the final system to a subsdiary
system, on the grounds that it is a loan from a Tamur Khola dialect (cf.
(1) above).

A further revision concerns the root class which is given in Sprigg
1966 as 23 (437).  This root class was grouped there, prosodically, with
21 and 22 (as g, from glottal), on the grounds that all three were united
by the glottal feature ligamental phonation, alternating with glottal
plosion; e.g. (i) vowel-initial junction, (ii) consonant-initial junction:

|  | i |  | ii |  |
|---|---|---|---|---|
| [ -V́S ] | [ mE:bÉSEnnE] | [ pE?əma ] | [ -V?ə̀ ] |  |
| [ -V́:S ] | [ mE??Ó:SEnnE ] | [ ?Ó:ma ] | [ -V́: ] |  |

do not get sick   to vomit

This root class is suspect: (i) it is supported by only two members,
the two exemplified above, and (ii) the former may have been confused
with another, and phonetically similar, verb for 'vomit':

[ pe?ma ]   to get sick,   [ peŔah ] he got sick

Chemjong 2018 V.S. symbolizes both verbs as long-quantity;

पे-म pe:ma  'to vomit'; अ-म a.ma  'to eject from the mouth', with
past tense forms:

पेसु pesu and अ-सु a:su (cf. also Michailovsky 1979:  PE̲S itr. 'vomit'(23).

These two lexical items, therefore, should probably be treated as errors, or perhaps assigned to an onomatopoea sub-category, in which case the number of root classes given in Sprigg 1966 (437) will be reduced from twenty-three to twenty-two.

A third revision concerns the root class 22 of Sprigg 1966 (437): [piRE] 'give it'; there I classified it as z (448-9) on the grounds that it was of the 'single-final-consonant' type. These phonetic grounds, however, are not decisive: a single root-final consonant ([s/S], [s:/S:]) has been admitted as an exponent of the s term of the final system (at (2.b) and (5.ii) above), e.g. [jo:SE] 'satisfy him', [1ES:E] 'know it'; a single root-final [t] has also been admitted as an exponent of the t term of that system (at (6.i) above), e.g. (fast-tempo) [mEtE] 'say (it)', [pa:tE] 'speak to (him)'; and, in anticipation of this revision, I have included there, in sub-section (iii), the example referred to above, [piRE] 'give it' (root class 22), with [po:RE] added as a corresponding long-quantity example. In vowel-initial junction an alveolar tap ([R]) occurs in the exponency of both terms, z and t; so it becomes necessary to take into account consonant-initial junction and interverbal junction as well; e.g. (i. z term, ii. t term).

| | | | | | | |
|---|---|---|---|---|---|---|
| i. [R] | [SERE | SEpma | ?aSE(t)tShi? | Setta? | KE:SEt] | [ p/(t)t/tt/t] |
| | [je:RE | ja:pma | ?aje:tShi? | je:ta? | kEe:t] | [ p/t] |
| | [tARE | tOmma | ·?adɔNtShi? | t nna? | kjE:dɔn] | [m/N/nn/n] |
| ii. | [piRE | pi:mah | ?abi(?)Si? | pi??a? | kE:bi?] | [V(:)/(?)/??/?] |
| | [po:RE | po:ma | ?abo:Si? | po:?a? | kEbo(:)?] | [V:/?] |

i. kill it, to kill, it kills us two, it kills me, it kills you; laugh, to laugh, we two laugh, I laugh, you laugh; scold (him), to scold, he scolds us two, he scolds me, he scolds you; ii. give him it, to give, he

gives it to us two, he gives it to you; grow, to grow, we two grow,
I grow, you grow.

The range of phonetic forms at (ii) shows that this type of root,
number 22 of Sprigg 1966 (437), can usefully be associated, as the
contrasting t-final type of root, with the [s/S] and [s:/S:] types of
s root (root no.19), and with the vowel-final type of z root [V(:)]
(root no.21), together with no.20, [V(:)], its corresponding long-
quantity root, incorrectly classified there as short-quantity (436-7);
e.g. (l = long quantity; s = short quantity)

l s [s/S] [jo:SE    jo:ma    ajo:Si?    jo:?a?    kEjo(:)?]  [V:/V]

  z [Vj]  [tOjE    tO:ma    ?adO:su    wA:?a?    kEwA(:)?]

  t [R]   [pE:RE    pE:ma    ?abE:Si?    DE:?a?    kEbE:]

s s [s:/S:][lES:E    lE:ma?    ?alE:Si?]                      [V.]

  z [V̊(j)] [tO̊:ma?  ɔ?ad  ?ə su? ]                          [V(:)]

  t [R]   [piRE    pi:mah    ?abi?Si?    pi??a?    kE:bi?]  [V:/V?]

l s satisfy him, to satisfy, he satisfies us two, he satisfies me, he
    satisfies you;

  z sew it, to sew, we two sew it; I sit, you sit:

  t fly, to fly, we two fly, I fly, you fly:

s s know it, to know, we two know it;

  z dig it, to dig, we two dig it;

  t give it, to give, he gives us two, he gives me, he gives you.

The odd man out in the short-quantity set of examples is the s-final
set, which is distinguished by (i) clear phonation for the vowel (versus
ligamental phonation), and by (ii) length of consonant ([S:/s:]) in vowel-
initial junction (it would, in any case, be impossible for the z-final
and t-final examples to follow it in this length feature; for, in the
nature of things, a non-syllabic vowel or a tap cannot be long).  It is
possible that the [ S:/s: ] might have developed simply to balance the
shortness of the preceding vowel, or it might have developed from a sequence

of fricative and glottal plosive (*[s?]), corresponding to the suggested
development of the long nasals [n: N: m:] (fellow continuants of [S:/s:])
in what I have  ascribed to glottal-plosive junction forms (1st-person
subject or object grammatical forms) from *[n? N? m?]; e.g.

   -Ts        -Ns        -Ks        -<u>N</u>s        -Ps        -Ms

[phɔnna?     -      HINNa?    HINNa?    ?imma?    tEmma?]
he employs me, he rocks me, he rears me, I sleep, he seizes me
(Sprigg 1966, 442).

9.    Thees-final type of root, and its phonematic system

The upshot of the revision of the s term of the final system is that
it now comprises a set of seven phonematic units, three of which are
symbolized by P; T, and K, three with the nasal symbols M, N, and <u>N</u>, and
one, following Michailovsky 1979 (2), with the symbol ∅; they occur in
both short-quantity and long-quantity lexical items, except for N, which
is confined to short-quantity lexical items:

    short: Ps ·   Ms    Ts    Ns    Ks    <u>N</u>s    ∅s
    long:  Ps    Ms    Ts    -     Ks    <u>N</u>s    ∅s; e.g.

(as in vowel-initial junction, 1st-person subject or object)

[?ips-    nams-    phO(t)tsh-    nOntsh-    HI(k)kh-    sONkh-    lEs:-]
[Ha:ps-    ti:ms-   phE:tsh-     -       li:kh-    tha:Nkh-   jo:s-]
sleep, smell, employ, store up, rock, sell, know, make cry, smoke (meat,
etc.), squash flat, train, weigh, satisfy.

10.  -Ms, -Ns, and -<u>N</u>s, and nasality

The examples of -Ms, -Ns, and -<u>N</u>s roots that were given at (8) above
each have a cluster for their phonetic exponents in the Panthar dialect.
This type of exponent is appropriate to junction in which there is an
initial vowel in the suffix, which is the case for grammatical forms such
as the imperative, the 3rd-person object (present or past), and 1st-person
intransitive past ([-E, -u?/-UN?, -aN]); e.g. (imperative)

short: [mE:namSEnnE, nONtShE, sONkhE]; long: [ti:mSE, tha:NkhE]
do not stink, save them up, sell it; smoke it, weigh it.

This type of junction was chosen to illustrate the cluster
possibility; but there are other types of junction in which the phonetic
exponents of -Ms, -Ns, and -N̲s are not a cluster but a single sound, as
in the following examples, which are taken from (i) interverbal junction
(word-final), (ii) suffix-initial nasal-consonant junction ([m-]), (iii)
suffix-initial plosive-consonant junction ([b-]; interrogative), and
suffix-initial fricative-consonant junction ([S-/s-]; dual): (cols. one,
three, and four contain s(hort-quantity) roots, and cols. two and five
l(ong-quantity)

|        | -Mss         | -Msl      | -Nss      | -N̲ss        | -N̲sl       |
|--------|--------------|-----------|-----------|-------------|------------|
| i.     | [kjE:dEm     |           |           | kjEHIN      | kElo:N]    |
| ii.    | [tEmma?      | ti:mma    | pEmma     | HINma(?)    | lo:Nma]    |
| iii.   | [kjE:dEmbi   |           |           | kjEHINbi    | kElo:Nbi]  |
| iv.    | [?adEmSi?    | ?adi:msu? | ?abEntshu?| ?aHINSi?    | ?alo:NSi?] |

i.   he seizes you, he rears you, you give your name
ii.  to seize, to smoke, to put a good finish on, to rear, to give one's
     name.
iii. does he seize you, does he rear you, do you give your name
iv.  he seizes us two, we two smoke it, we two put a good finish on it,
     he rears us two, we two gave our names.

Regardless of whether the phonetic exponency of each of these three
finals, Ms, Ns, and N̲s, is a cluster or a single sound, that exponency
invariably contains nasality as one of its features; so the choice of the
symbols M; N; and N̲ is appropriate.

11. -Ps, -Ts, and -Ks, and their plosion/nasality alternation

One might expect a comparable state of affairs to be also true of

-Ps, -Ts, and -Ks, that all three would have plosion, or, where
appropriate, affrication, as part of their phonetic exponency in all
their forms, even if they too had sometimes a cluster as phonetic
exponent (as in (1), (2), and (5) above) and sometimes a single sound.
This is what the examples so far given suggest; e.g. (s = short
quantity; l = long quantity)

| -Pss | -Psl | -Tss | -Tsl | -Kss | -Ksl |
|------|------|------|------|------|------|
| i. [?ipSE | Ha:pSE | phO(t)ShE | phE:tShE | HI(k)khE | li:khE] |

go to sleep, make --- cry, employ him, squash it flat, rock it, train
him; but these examples do not give a complete picture: -Ps, -Ts, and
-Ks are not as consistent, in this respect, as -Ms, -Ns, and -Ns; for
they alternate in phonetic exponency between the plosion and affrication
exemplified above and the nasality to be observed in the following
examples: ((ii) nasal-initial consonant junction ([m-]), (iii) plosive-
initial consonant junction ([b-]), (iv) fricative-initial consonant
junction ([S-]), (v) interverbal junction; cols. 1, 3, 5: short-quantity
roots; cols. 2, 4, 6: long-quantity roots)

| -Pss | -Psl | -Tss | -Tsl | -Kss | -Ksl |
|------|------|------|------|------|------|
| ?imma? | Ha:mma | phOmma | phE:mma | HINma? | li:Nma] |
| ?imbi | kEHa:mbi | kEpHOmbi | kEpHE:mbi | kEHINbi | kjEli:Nbi] |
| ?a?imSi? | ?aHa:mSi? | ?apHONtShi? | ?apHe:NtShi? | ?aHINSi? | ?ali:NSi?] |
| HEn ?im | kEHa:m | kEpHOn | kEpHE:n | kjE:HIN | kjEli:N] |
| [m] | [m] | [m/N/n] | [m/N/n] | [N] | [N] |

to sleep, to make --- cry, to employ, to squash flat, to rock, to train;
does he sleep, does he make you cry, does he employ you, does he squash
you flat, does he rock you, does he train you; we two sleep, he makes us
both cry, he employs us two, he squashes us two flat, he rocks us two,
he trains you; he sleeps, he makes you cry, he employs you, he flattens
you, he rocks you, he trains you.

Weidert 1982 classifies these -Ps, -Ts, and -Ks roots of mine as

'nasal verb' ('/-m/, /-n/, /-ṇ/, /N/'; 5, 9), and accounts for the
plosion or affrication in vowel-initial junction as a development from
an earlier nasal: 'The stem-final nasal consonant that shows up in the
A quotation from changes to its homorganic voiceless stop counterpart when
fused with -s-. What can be suspected at this moment is that an original
fusion of two suffixes lies at the bottom of the seemingly unorthodox
change from nasal to stop. The assumption of an ordered sequence of the
same two suffixes where -t/d- is followed by -s- is most natural' (11).

The main obstacle to a 'fusion of suffixes' solution is that, if a
t suffix is in systemic contrast with a s suffix, each suffix having a
conflicting role in the morphology, it is difficult to conceive of the
two as combining within a single root. Weidert is aware of this difficulty:
he commends one of a number of tentative solutions as 'advantageous in the
sense that a clashing together of two infixes as surmised above is avoided'
(13) and as having the advantage of not having to postulate two juxtaposed
proto-suffixes in verb classes (1) and (4) e.g. for '(1)', '-a(a)N-t-s,
and for '(4)', '-a(a)m-t-s' (12); but, after considerable discussion, he
decides in favour of treating these roots in which plosion and affrication
alternate with nasality as having substituted plosion/affrication for
nasality in certain of their forms as a result of introducing a -t- suffix:
'the a priori assumption of allowing a proto-suffix system containing the
minimal elements ∅ (zero), *-t-, *-s-, and *-t-s-' (15).

My own view is the reverse of this: instead of postulating that such
roots as these have been moving from nasality towards a mixture of
nasality and plosion I take the -Ps, -Ts, and -Ks roots to have moved from
complete, or near-complete, plosion/affrication to the current mixture:
plosion/affrication maintained in vowel-initial junction, but superseded
by nasality in consonant-initial junction and in interverbal (or word-final
junction.

12. The s-final phonematic system and Tibeto-Burman comparison

Support for identifying the sort of s-final root considered in (10) above as being classifiable as -Ps, -Ts, and -Ks rather than, following Weidert 1982, as '-m-t-s', '-n-t-s', and '-N-t-s' (12, 16-18) comes from comparison with Burmese and Tibetan:

-Ps and Burmese -p, Tibetan -b (s)

-Ms    -m,    -m

-Ts          -d (?from *-ds)

-Ns          -n

-Ks    -k;    -g (s)

-Ns    -n,    -n (s)

-Øs    -V,    -V (s); e.g.

| | Limbu | Burmese | Tibetan |
|---|---|---|---|
| 'ips | sleep | 'ip | ?yib hide one's self (Benedict 1972, 36) |
| hèps | wear | | ?'kheb/ḱhebs spread over |
| yups | tighten | rup take in (but contrariwise) | |
| cups | assemble | chum | 'dzom(s) |
| nams | smell | nam: smell of | mnam smell of |
| tèms | catch | | 'tham seize |
| pòts | start, keep on | ?pru do, perform | spyod perform, use |
| nòns | keep by | nho add | snon add |
| 'èks | break | 'ak cract open | |
| phòōks | break (tr.) | phok burst | 'big(s)/'bug(s)break into |
| sòns | sell | choṅ conduct business | 'tshoṅ/btsoṅs sell |
| thuns | make --- drink | | 'thuṅ/'thuṅs drink |
| sees | make water | se: urine | |
| yoos | satisfy | rai be satisfied | |
| nees | lie down | | (b) sñe(s), |

The cognates are not numerous; but I believe them to be enough to justify such finals as -Ps, -Ts, and -Ks as distinct from -Ms, -Ns, and -N̲s.

13.  Presumed development of nasality in -Ps, -Ts, and -Ks roots.

In the examples at line (ii) of (11) above it would be possible to account for the single nasal, [ m ], which is the phonetic exponent of -Ps and -Ts, and [ N ], as the phonetic exponent of -Ks, as an aspect of the nasal type of junction: since nasality also occurs as an initial feature of the suffix lexical item ([ m-, n-] ), presumed root-final * [-ps] , *[ -ts] , of plosion-and-friction cluster, perhaps through some such process as that shown below, whereby [ -s- ] develops into a voiceless nasal ([ m̲, N̲]) before being voiced to [m ] and [ N]:

i.  $\begin{bmatrix} * \text{[-ps m-]} \\ * \text{[-ts m-]} \end{bmatrix}$ > [-pm̲m-] > [-m̲m-] > [-mm-]

ii.  * [-ks n-]⁻  [-kN̲n-] > [-N̲n-] > [-Nn-]; for examples of (i) see line (ii) of (11) above; and for (ii) cf. the following:

| -Ps | -Ts | -Kss | -Ksl |
|---|---|---|---|
| [tho:mnE | ph ɔnnE | pONnE | khe:NnE |

I watch for you, I employ you, I lift you up, I tie you up.

This explanation cannot, however, serve for types of junction such as those shown at lines (iii) and (iv) of (11) above, in which there is a suffix-initial consonant other than a nasal, either, at (iii), a plosive ([ b-] ), or, at (iv), a fricative ([ S-] ); so I can only suggest, here, that the features of the nasality type of junction (line (ii) might have been extended by analogy to all consonant-initial types of junction, e.g. lines (iii) and (iv).  Once the cluster type of exponency had ceased to be a possibility in consonant-initial junction, the choice must have lain between a single stop or plosive,[ p t k ], and a single nasal,

[m n N]; and the choice of the nasal might, perhaps, have been
reinforced by the nasality that would be familiar in that type of
junction as part of the phonetic exponency of -Ms, -Ns, and -N̲s (cf.
(10) above). In fact, roots of the three types -Ps, -Ts, and -Ks
(root classes 18, 9, and 11 of Sprigg 1966, 437) seem well on the way
to being absorbed, respectively, into the -Ms, -Ns, and -N̲s classes
(root classes 17, 10, and 12); for it is only in the type of junction
in which the suffix is vowel-initial that plosion survives as one of
their exponents, with the result that there are phonetic criteria for
distinguishing -Ps, -Ts, and -Ks roots from -Ms, -Ns, and -N̲s,
respectively, only in vowel-initial junction.

Even in word-final position (and, therefore, in interverbal
junction) it is nasality, not plosion, that has been chosen for the
phonetic exponents of -Ps, -Ts, and -Ks, [m n N], as at line (v) of
(11) above, just as it is for -Ms, -Ns, and -N̲s, as in line (i) of (10)
above.

It is significant that a cluster cannot occur in word-final position
in present-day Panthar Limbu, but only a single consonant, either (i)
stop ([p k t ?]), as for -Pz and -Pt, for -Kz and -Kt, for -tz and -tt,
and for -Øt and -Øz (symbolized as -Rzg and -Yzg in Sprigg 1966, 450),
or (ii) nasal ([m N n]), as for -Ps, -Ms, -Mz, and -mt, for -Ks, -N̲s, and
-N̲z, and for -Ts, -Ns, -nz, and -nt.

It is not unreasonable to suppose that Limbu formerly had consonant
clusters in verb roots in word-final position, because consonant clusters
are attested in the same circumstances in the Balti dialect of Tibetan,
e.g.
   [ mI   Ips ] will not hide, [ mI JIks ] will not fear (y̲i̲b̲, 'j̲i̲g̲s̲)

In current Limbu, however, the choice, for the phonetic exponency of -Ps,
-Ts, and -Ks in interverbal junction lies between a single plosive and a

single nasal; and, if I am correct in assuming that nasality had
previously developed as the appropriate phonetic exponent for junction
with a consonant-initial suffix in all circumstances ([-mb- -ms- -mS-]),
etc.; (11) above, lines (ii) - (iv)), then that nasality would clearly
have been a more appropriate feature than plosion for replacing an
earlier cluster in interverbal junction too.

14.  The t-final type of root, and its phonematic system.

It would be reasonable to expect that the seven-term phonematic
system attributed to the s member of the three-term final system (s, t,
z), namely P, K, T, M, N, N̲, and ∅ (as in (8) - (11) above), should be
matched by a seven-term phonematic system for the t member of the final
system too.  There is no difficulty in identifying six members, P, K, t,
n, m, and ∅; e.g. ((i) short-quantity, (ii) long-quantity; vowel-
initial junction ([-E]))

|  | Pt | Kt | tt | mt | nt | ∅t |
|---|---|---|---|---|---|---|
| i. | [tSEptE | thOktE | mEttE | jEmdE | phEndE | piRE] |
| ii. | [kho:ptE | la:ktE | ?u tE | — | wA:ndE | pE:RE] |

i.  cut it, fight him, speak to him, tattoo him, untie it, give it;

ii.  grasp it, tread on it, call him, rock him, fly; but there is no
good candidate for  the role of example of a seventh class, 'N̲t,
corresponding to the N̲s of the s-final phonematic system, with junction
features *[-Nd], corresponding to the [-md] and [-nd] of the mt and nt
examples above.  There is, however, a poor candidate for a seventh such
root class, a solitary example, in the verb lexical item in the
following two words:

[HEn  SE:Nk] he pants      [mESE:NktEnnE] do not pant.

The forms  of this verb do not, however, make it a strong
candidate for a further category, -N̲t, because the root-final [-Nk]
and [-Nkt-] of these two words do not conform strictly to the pattern

set by the —nt and the —mt classes, [nd-] and [ -md- ] (root classes
8 and 16 of Sprigg 1966, 437: e.g.

[kE:phEn]  he unties you  [mE:jEmdEnnE]  do not tattoo him;
which would require *[HEn SE:N] and  *[mESE:NdEnnE].  Even if these
words were treated as deriving their voiceless velar stops [-k] and
[-k-] in something like the intrusive manner of [-k-] in the
pronunciation of the English example <u>Kingston</u> as [kINkstən] referred
to in (4) above, they would still be at odds with the —nt and —mt
classes.

Alternatively, and probably better, the exceptional forms [SE:Nk]
and [-SE:Nkt-] could be treated as onomatopoeic, and assigned to a
sub-system isolated from the majority pattern of the language.  In
that case there will not be a correspondence in number between the
seven root classes belonging to the s-final type and the six root
classes of the t-final type in the Panthar dialect.  It is worth
noting, at this point, in support of this onomatopoeia treatment,
that there is no seventh, or -Nd-, member of the t/d cluster type in
Weidert 1982 (5, 9) either, and that, although Michailovsky 1979
distinguishes a NT root class (2, 16), he gives only one example of
this class, an obscenity.

In the Panthar dialect the nasal terms -N, -M, and -N̄ are less
well represented in terms of lexical items than -T, -P, and -K in both
t and s types of final:  in the s type there are no examples of -N in
long-quantity lexical items, and in the t type there are no -N̄ lexical
items, not even an obscenity, and only one example of -M, as against
thirteen -Ms lexical items (and five -Mz lexical items; cf. (16) below).
Further, in the z type of final (at (16) below), -N, -M, and -N̄ are
confined to short-quantity lexical items; and, even so, there are only
lexical items serving as examples of -Nz.  It seems reasonable, therefore,
to treat the discrepancy in numbers between the six-term t-final

phonematic system and and the seven-term s-final phonematic system (and the seven-term z-final phonematic system, at (16) below) as fortuitous.

15. The t-final phonematic system and Tibeto-Burman comparison.

The number of examples of t-final cognates that I have been able to find for comparison with Burmese and Tibetan includes:

| | Limbu | Burmese | Tibetan |
|---|---|---|---|
| liipt- | heavy | le: | ljid- heavyness |
| 'ept- | fan | yap fan (n.) | (g.)yab-fanning |
| cept- | cut | | bcad (perf.) cut |
| khakt- | get hard | khak difficult | khag- difficult |
| makt- | dream | mak | rmaṅ- |
| lookt- | run | ?rok arrive, reach | rgyug run |
| mutt- | blow | mhut | 'bud |
| putt | clench fist | put slap | |
| caatt- | play | | rtsed |
| khuunt- | steal | khuni | rkun- theft |
| pir- | give | pe: | sbyin |
| pèèr- | fly | pyam | 'byer' disperse in flight (Benedict 1972, 83, 166) |
| phir- | tread on | phi crush | ?'phyi blot out |
| nèr- | be in dilemma | | mnar be tormented |
| har- | bite | hap | hab mouthful |
| 'èr- | get chapped | | 'gas chap |
| kar- | crack | | " crack |
| poor- | grow | | ?'bo(s) |

16. The z-final type of root, and its phonematic system.

The seven-term phonematic system of the s-final and the six-term, or, perhaps, seven-term system of the t-final types of root have been stated in (9) and (14) above; before proceeding to a brief study of

Michailovsky's -?R roots it is first necessary to state the phonematic
system of the z terms of the final prosodic system, and give examples
the phonetic criteria of the z term were stated at (7) above).

The z term's phonematic system also comprises seven units;
they are, in relation to the quantity system:

Short:  Pz Kz tz nz Mz Nz Øz

Long::  Pz Kz tz  -  -  - Øz; ^e.g.

(as in a dual for; cg. (7) above)

| -Pz | -Kz | -tz | nz | Mz | Nz | -Øz |
|---|---|---|---|---|---|---|
| s: -:Ep- | -lak- | -SE(t)t- | -lm- | -lEm- | -gEN- | -dɔ?ᵊ-] -dɔNt- |
| l: -Ha:p- | -be:k- | -je:t- | - | - | - | -do:-] |

s:  stand, lick, kill, scold, laze, fall, dig

l:  cry, go, laugh

l". The z-final phonematic system and Tibeto-Burman comparison.

|  | Limbu |  | Burmese |  | Tibetan |
|---|---|---|---|---|---|
| re: | stand | | rap | | |
| li: | plait | | ?lip curl | | sle |
| pa: | scoop | | pak | | |
| la: | lick | | lyak | | ldag |
| tha: weave | | | | | 'thag |
| ru: | bring down | | rhut put down | | |
| se: | kill | | sat | | bsad/gsod |
| ree: | laugh | | ray | | bgad |
| wa: | wear, put on | | wat | | 'god adorn |
| li: | estice | | ?lim delude | | |
| thu: | drink | | | | 'thuṅ |
| si: | die | | se | | shi/'chi |
| khu: | carry | | | | 'khur |
| to | dig | | tu | | ?'dul till (Benedict 1972, 62) |
| ca: | eat | | ca: | | za/bza' |

18.  T clusters and -?R (Michailovsky 1979)

Michailovsky is puzzled by his 'roots in -R and -?R, which in some
cases seem to be related to -T and -N' (1979, 3). [6]  In fact, in nine
instances out of thirteen in his Appendix he has treated -?R as a honorary
member, as it were, of what he terms the 'T-allofam' (20, 23). [7]  His section
'Families with ∅- and T-allofams (or two T-allofams)', for example, includes

∅:  TƆ  sew,                                    THA   keep (composition only)

T:  TƆ? R have sth. sewn for so.,              THA? R put aside.

The roots -?R of Michailovsky's analysis are given more than honorary
-T status in my analysis: in (14) above they appear as fully-fledged members
of the t class of final, their phonematic unit being ∅; e.g. (short-quantity)
[plR-] give, (long-quantity) [pE:R-] 'fly'.  This means that I classify
the Panthar-dialect root [tha?R-] 'keep', corresponding to Michailovsky's
THA?R, as -∅t, or, rather, since it is short-quantity, as -∅ts.  There is
no root in my data corresponding to his THA; but, if there were, I should
expect to classify it prosodically as z-final, with ∅ as its phonematic
unit, i.e. as -∅z, in accordance with my classification of [tƆj-/tƆ:-]as
-∅z in (16) above.  The relationship of THA versus THA?R would then be one
of z versus t, corresponding closely to Michailovsky's intuition.  Indeed,
superficial changes in his symbolization can make the relationship even
clearer: (i) Michailovsky 1979 treats open-syllable roots, such as THA and
T , as having 'final consonant ∅' (2); but this ∅ is not overtly symbolized
in his roots; if it were to be, THA and TƆ would be symbolized as THA∅ and
TƆ∅; (ii) his root-final '?' in '-?R' is in complementary distribution with
-∅, the former being followed only by 'R', and the latter being never
followed by any other symbol; so '-?R' could be re-symbolized as -∅R; (iii)
'R' in the proposed -∅R is in complementary distribution with 'T', as in
-PT, -TT, -KT, -MT, -NT, and -NT; it could therefore be re-symbolized as
T, whence -∅T, a change that is, in any case, advisable on account of the
honorary 'T-allofam' status of -R that I have referred to above, with the

advantage that THAØ and TƆØ would appear in opposition to THATØT and
TƆØT (and '-?R' in Michailovsky's 'complete list of final consonants
or clusters' would need to give place to -ØT); (iv) this -ØT derived
from '-D?R' is confined to short-quantity syllables; the complementarily
distributed long-quantity final consonant symbolized as 'R' (Michailovsky
1979, 2) in '-:R', would also need to be re-symbolized as -ØT, and could
be distinguished from the short-quantity -ØT by using Muchailovsky's
long-quantity symbol ':', whence -:ØT versus -ØT, e.g. MA:R and TE?R
(Michailovsky 1979, 17, 16) re-symbolized as MA:ØT and TEØT; (v)
Michailovsky's 'Ø-allofam' is not overtly symbolized: 'HA:P itr. "weep"
is the Ø-allofam (in spite of its final -P) of the family HA:P/HA:PT/
HA:PS' (2); but if HA:P were to be overtly symbolized as an example of
the Ø-allofam, that 'fam' would appear as HA:PØ/HA:PT/HA:PS; correspondingly,
his open-syllable roots THA and T , for which I have proposed, at (i), that
the '-Ø consonant' be overtly symbolized, whence THAØ and TƆØ, would then
have to be re-symbolized as THAØØ and TƆØØ (versus THAØT and TƆØT). The
former Ø of -ØØ in, for example, TƆØØ would be in phonological contrast
with such other final consonants as -P, -T, -M, -N, and -N̲, while the
latter Ø of -ØØ would be in allo-fam (morphological) contrast with -T and
-S.  As one would expect in an article directed towards the allo-fam
relationships, all the open-syllable roots in Michailovsky 1979 are also
examples of Ø-allofam, and could, therefore, be symbolized with -ØØ; but
not all -Ø verbs in Limbu are Ø-allofam 'transitives are in all minority
among verbs with Ø-postfinal that have T- or S-allofams, not among all verbs
with Ø-postfinal' (5).  There might, then, be an advantage, for easy
reference, in using a different symbol for the allofam from the postfinal,
Ø for one of them, perhaps, and Q, Z, X, or some other unneeded letter of
the alphabet, for the other.

Such Panthar z-final roots as [Si:-] die, [phO:-] knit, [tŏ(:)-] dig,
and [ mO(:)-] dig, for example, could be put into Michailovsky's 'Ø-post-
final' class but not into his Ø-allofam class, as SI:Ø, PHƆ:Ø, T ƆØ, and
MƆ, but not as SI:ØØ, etc.  His grouping of roots by 'family' has no

relevance to these four, and other such non-∅-/T-/S-fam roots; they are non-fam.

19.  Long quantity and short quantity in -∅z roots.

In Sprigg 1966 I made the mistake of classifying the root [tOj-/tO:-] sew (Michailovsky's Tɔ) and [wʌj-/wA:-] 'be' as short-quantity (436, 437), through giving undue importance, as a phonetic oriterion, to the marked shortness of vowel that I had observed in certain of their forms; I now realize that this shortness is confined to the type of junction in which the suffix has a (syllabic or non-syllabic) initial vowel ([- O(j)-, -ʌj-]; Sprigg 1966, 436; cf. (7) above).  I also now find that, in its re-considered role as a long-quantity root, [tOj-/tO:-], contrasts, in quantity, with the short-quantity root [tO(j)-/tO(:)-] 'dig', mainly through a difference in phonation,  'normal' versus ligamental phonation; and so does [mOj-/mO:-] 'get drunk' with [mOj-/mO(:)-] 'dig':

     vowel-initial junction consonant-initial junction
l:   [tOjE     tOjUN?     ?adO:su?  tO:ma?]
     ,                              ,
s:   [tO(j)E   tO?əjUN?   ?adO?əsu?  tO:ma?]

l:    sew it, I sew it, we two sew it, to sew
s:    dig it, I dig it, we two dig it, to dig

The above two, [tO(j)-/tO(:)-]  and  [mOj-/mO(:)-], are, in fact, the only short-quantity examples of this, the -∅z, type (root class 21, Y(z), of Sprigg 1966, 449-50) in my data; but I take them to be enough to make it necessary to distinguish them, as -∅zs roots, from the above long-quantity (-∅zl) roots [tO(:)-]  'sew' and [mO(:)-]  'get drunk', and from quite a number of long-quantity roots corresponding to Michailovsky's -∅ class.  If I were to follow him in using ':' to symbolize long quantity, Panthar lexical items such as [tOj-/tO:-]  'sew' and [tS-/tsa:-]  'eat' would be distinguished by this ':' symbol, as Tɔ:(∅) and CA:(∅), from Tɔ(∅), from        'dig' and Mɔ(∅) 'dig'.

Michailovsky's Ø-allofam and T-allofam examples may be compared, as regards quantity, as follows:

TA      come,       JU      come down,      KHE      quarrel
TA:T    bring,      JU:T    bring down,     KHETT    quarrel over sth. obj. (15),

KO  be burned (17),  TƆ                      sew
-                    TƆʔR  [TƆØT]  have so.   sewn for so.        obj. ,
THA                  keep (only in composition),  KU      carry
THAʔR [THAØT]  put aside,               KU:TT have so. obj.
                                                carry sth.,
KH      worship (spirits)                CA      eat,
KHƆ:TT exorcise (spirits) from so. (obj.),   CA:TT feed,
SA      deliver,
SA:TT   deliver sth. to so. (obj.) (20).

Michailovsky's open-syllable (Ø-allofam) examples are all short-quantity; so too, are three of his T-allofam examples; but the majority are long. The Panthar -Øz cognates, on the contrary, are all long-quantity, -Øzl, and therefore correspond in quantity to the related -Øt roots: (phonetic form appropriate to junction with -ma for the -Øzl roots, and to junction with [-E] for the -tzl and -ttl roots)

    i.   [ta:-     ju:-      khe:-     tO:- ku:- tsa:-]      -Øzl
    ii.  [ta:R-    ju:R-]                                     -tzl
    iii.                     [khe:t-            tsa:t- sa:t-]-ttl
    i.   come      come down quarrel sew carry eat      -
    ii.  bring     bring down
    iii.                     claim       -    feed    guide.

20. -ʔR and -S as T-allofam and S-allofam

    -ʔR appears again in its T-allofam role in Michailovsky's section 'Families with T- and S-allofams' (23), in which his -ʔR is paired, this

time, with -S in six striking intransitive-transitive pairs of examples,
from which I have chosen:

    PES    vomit    PHES    fart    SES    urinate

    PE?R    vomit on  PHE?R    fart at  SE?R    urinate on so. (obj.)

(Michailovsky 1979, 23, 17).

On the same grounds as in (18) above I would substitute -∅T for his
-?R, with the result that PHE?R and SE?R would be regularized as PHE∅T
versus PHES, which could, correspondingly, be regularized as PHE∅S; and
so, similarly, could SE?R and SES, and the other examples. It would, in
that case, be necessary to substitute ∅S in Michailovsky's 'complete list
of final consonants and clusters' for his final consonant -S, which, like
his -?R, combines, in his examples, only with a short vowel, e.g. PHES and
SES above. My Panthar -∅s cognates, however, are, with one exception,
long, matched by -∅t short forms:

    -∅sl: [nE:s-    -    phe:S-  Se:S-  ma:S-    m ɔ:S-]

    -∅ts: [nE?əR- pe?R-  phe?R-  Se?R-  ma?əR-]

    -o∅l:                                  [mɔj-]

lie down,            -     break wind           urinate,

be in a dilemma, be sick, break wind in the face of, urinate on,

lose, get --- drunk,

hide, get drunk.

Translated into Michailovsky's symbolization my -∅sl examples would
appear as: PE:S, PHE:S, SE:S; they are all long-quantity (for the
quantity distinction in -∅s lexical items of. (2.b) and (8) above); my
-∅ts examples, on the other hand, are short-quantity, and would need to
be symbolized as PE?R, PHE?R, and SE?R, for example, in his system (or
PE∅T, PHE∅T, and SE∅T in accordance with my proposal at (18) above).

21.    -R and -S as T-allofam and S-allofam (intransitive and transitive)

Michailovsky 1979 assigns Ø-allofam and S-allofam roles respectively
to -R and -S in his section 'families with Ø- and S-allofams' (17-19); e.g.

-R(Ø):  P̲E̲R   itr.  fly          SOR itr. wake up
-s:     PH̲E̲S  tr.   cause to fly SOS tr.   "     ";

but he adds the observation:   '[perhaps should be placed in  A4a below]'
(18), i.e. in the section entitled 'Families with T- and S-allofams', and
in the sub-section entitled 'T-allofam intransitive or deponent'.

From my point of view the latter alternative is preferable.  Michai-
lovsky's 'final consonant' R would then have honorary T-allofam status;
and I should find it tempting to re-symbolize his P̲E̲R and SOR, for example,
as P̲E̲T and SOT, or, more consistently, consistently, PE̲ØT and SOØT, in
morphological contrast with PE̲S and SOS (re-symbolized as PEØS and SOØS);
but any such re-interpretation would lead to conflict with the re-symboli-
zation of -?R as -ØT advocated at (18) above; e.g. Tɔ?R and PE̲?R as Tɔ ØT
and PE̲ØT.  It would confound Michailovsky's short-vowel final -?R examples
with his short-vowel final -R examples, with the result that his PE̲?R
'vomit on' (23) would be identical with his P̲E̲R 'fly' (18), both being
re-symbolized as PE̲ØT (this identification would not, however, apply if his
'fly' example were spelt P̲E̲:R, as it is on p. 26).

22.  Quantity in -R roots  (-ØT v.  -:ØT)

In my Panthar material the symbolization problem does not arise,
because there are only two categories, short-quantity in -Øt versus long-
quantity, where Michailovsky has two short-quantity and one long-quantity
(-?R, -R, -:R); his -?R forms regularly correspond to Panthar short-quantity
forms; e.g.

TE?R take away, THA?R  put aside, NA?R  desist         -?R
[te?R-         tha?əR-]keep,      [nE?R-] be in a dilemma, -Øts;

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his -R and -:R forms, on the other hand, correspond to my long-quantity
-∅t (-∅tl) examples as follows⅃

sh.: POR, PER, HER, SER, SOR, JOR;

l.: PHI:R, MA:R, I:R, HƆ:R, SƆ:R

l.: ¨ , ¨ , ¨ , ¨ ;

e.g. [po:RE, pE:RE, He:RE; phi:Ra]; grow! fly! get dry! it shrank.

In the Panthar dialect, then, provided that long quantity were symbolized,
by a colon as in Michailovsky 1979, perhaps, or by doubling the vowel symbol
as in Weidert 1982, there would be no difficulty in symbolizing Michailovsky's
-R and -:R roots as -:∅T; in which case his POR, PER, and PHI:R, for example,
would appear as PO:∅T, PE:∅T, and PHI:∅T (or poo∅t, etc.).[8] In this long-
quantity type of root it would be possible to assign an intransitivity
function to the -T as opposed to the -S.

23. Quantity in -S roots (-∅S v. -:∅S)o

All Michailovsky's examples of -S roots, thirty-six in number, are
symbolized as short-quantity; but the ten cognate roots in my Panthar data
are all long-quantity except one, [pES-], which is in any case suspect (for
short-quantity -∅s roots cf. (2.b) and (8) above):

sh.: MAS, HIS, PHES, PHIS, PHES, SES, KIS, LAS, KHAS, PES, + 26

l.: ¨ , ¨ , ¨ , ¨ , ¨ , ¨ , ¨ , ¨ , ¨ ;

sh.: ¨ ;

e.g. [mEpHE:sjEnnE    do not make  ---- fly, [Se:SE] urinate!
?[pE(:)SE] get sick!

The Panthar long-quantity root [PE:R-] 'fly' is, therefore, in the
same quantity category as its matching causative [phE:s-] 'make ---- fly'
(they might be symbolized as PE:∅T and PHE:∅S); and so are [mɔj-] and
[mɔ·S-], 'get drunk' and 'get ---- drunk' respectively (-∅zl v. -∅sl).

24. -∅ and the final system (s, t, z), and Weidert 1982.

My observations on Michailovsky 1979, and especially the morphological significance of his final consonants and clusters -R, -?R, and -S in relation to his ∅-, T-, and S-allofams ((18)-(23) above) largely depend on associating the three terms of my final system, s, t, and z, through a common phonematic unit -∅. Stated in (8) above I recall that association here: (i. long quantity, ii. short quantity)

i.  s: [-s/S]  [Se:SE    Se:ma    ?aSe:su?    jo:?a?    kEjo(:)?]  [-V:/V]
    t: [-R]    [pE:RE    pE:ma    ?abE:Si?    PE:?a?    kEbE:]
       [-Vj]   [kujE    ku:ma?    ?agu:su?    ju:?a?    kEju:]
    z:
       [C-]    [tSE    tsa:ma    ?adza:su?    wA:?a?    kEwA:?]
ii. s: [-s:/S:] [1ES:E   1E:ma?    ?alE:su?]     –         –      [-V:]
    t: [-R]     [piRE    pi:ma?    ?abi?Si?    pi??a?    kEbi?]   [-V:/V?]
    z: [-V(j)]  [tO(j)E  tO;ma?    ?adO?ə-su?]   –         –      [-V:/V?]

i.  urinate, to urinate, we two urinate, he satisfies me, he satisfies you;
    fly, to fly, we two fly, I fly, you fly;
    carry it, to carry, we two carry it, I come down, you come down;
    eat it, to eat, we two eat it; I stay, you stay;
ii. know it, to know, we two know it;
    give it, to give, he gives us two, he gives me, he gives you;
    dig, to dig, we two dig it.

As far as long-quantity roots are concerned. Weidert 1982 advances a very similar analysis:

'11. -aa-s

12. -aa-t
                                                         - VOWEL

13. -aa-∅ ('absence ("zero") versus presence
          (-t/d-, -s-) of suffix elements' (12)

e.g;

        inifinitive sg. impv. 1st p. sg. fut. English gloss

| '11. | seema? | seesE? | seesuN? | urinate |
|------|--------|--------|---------|---------|
| 12. | pEEma? | pEErE? | pEE-a | fly |
| 13. | caama? | cE? | caN? | eat (9) |
| 14. | kuuma? | kuyE? | kuyuN? | carry' (14). |

It is only in vowel-initial junction that Weidert's two classes 13 and 14 differ from each other; and I have shown above (7) that they are complementarily distributed in relation to lip-rounding and lip-spreading; consequently, his two classes are equally members of my -∅z class.

A dearth of material compared with my Panthar data has prevented Weidert from dealing comparably with short-quantity roots, in terms of his categories -s-, -t-, and -∅-, corresponding closely to my root-final classes -∅s, -∅t, and -∅z above:  he has no short-quantity forms suitable for treating as -s- or as -∅-, but only forms suitable for -t-; e.g.

'(10)  -a?-t-  GLOTTAL'  (12), e.g.

'(10)  ha?ma?  ha?rE?  ha?ruN?  bite'  (9).

Because of this absence of contrasting short-quantity -s- and -∅- forms he goes on, in a section on 'Reconstructed Proto-Limbu Verb Class morphology' (18), to distinguish this class sharply from his 'class 12-t':

'10  *CV[±p/t/k/]s-t > CV?-d   CV?r-

12  *CVV-t                    CVVr-'  (18).

His classes 10 and 12 correspond to my short-quantity (s) and long-quantity (1) root-final -∅t class as follows:

|  | Weidert |  | Sprigg |
|--|---------|--|--------|
| 10 | CV?r-, e.g. ha?/ha?r- | | -∅ts, e.g. [ pi˙:/pi˙R/pi˙?- ] |
| 12 | CVVr-, e.g. pEE/pEEr- | | -∅tl, e.g. [ pE:/pE:R-] ; |

his class 11 merges the short- and long-quantity members of my root-final -∅s class as follows:

```
         Weidert                                    Sprigg
                                        ⎡ -∅ss, e.g. [1E:/1ES:-]
   11  CVss∿CVs∿CVVs,   e.g. see/sees-  ⎢
                                        ⎣ -∅sl, e.g. [Se:Se:s-];
```

and, finally, his classes 13 and 14 have no examples corresponding to the
short-quantity members of my root-final -∅z class, whence the following
correspondence:

```
            Weidert                              Sprigg
                                       -∅zs, e.g. [tO:/tO(j)-]

   13  C(V)-,      e.g. caa/c-  ⎤
                               ⎥   -∅zl, e.g. [ku:/kuj-], [tsa:tS-]
                               ⎥
   14  CVV,  CVy,  e.g. kuu/kuy-⎦
```

Michailovsky 1979 and Weidert 1982 have helped me to arrive at a fairly
large-scale revision of my previous analysis, Sprigg 1966 (limited, for the
most part, to short-quantity lexical items), through acquainting me with
data from other dialects, and through a close examination of the morphological
role of -s and -t.


NOTES

1.  The revised version of a paper of the same title presented, in summary
    form, at the 4th Annual Conference of the Linguistic Society of Nepal,
    Tribhuvan University, Kathmandu, December, 1983.  For specially devised
    symbols see Appendix I.

2.  I have used 'tongue front' as a phonetic term to cover the three parts
    of the tongue (as active articulator) tip, blade, and front, in asso-
    ciation, respectively, with the teeth, the alveolus, and the hard palate,
    as in: [t, n], in opposition to 'tongue back', or velar ([k, g, N]).

3.  For 'cavity friction' see Pike 1943: 'voiceless resonance of a chamber
    as a whole by air going through it as through an open tube' (71); for
    the vowel quality cf.  Sweet 1877:

'By weakening the different point and blade consonants a variety of
vowels may be found, which are not included in the regular scheme of
vowels. - - - A weakened [z] gives a vowel that has the effect of
a very forward [eh] (I.P.A. [ə] ), being in fact the "blade" vowel most
nearly corresponding to [eh], and bearing the same relation to [eh] as
[z] itself has to [j]' (Henderson 1971, 115).

Cf. also the alternation in Nepali between [s-] and [-H-]for the
lexical item [s/Hʌt], e.g. [sʌttʌri] 'seventy' and [ekꜜHʌttʌr] 'seventy-
one', though, in the case of [H], the cavity friction is accompanied by,
and masked by, local friction in the glottis (arytenoidal friction) and
by voice (cf. Sprigg 1978, 12-15).

4.    The absence of aspirated affrication as a **word-initial** possibility
to match the word-initial non-aspirated affrication that appears in
examples such as: [tsUmma?] 'I meet', [ts ɔ] '(he) ate it' (from *[tsa:u:]),
and the example[tsa:ma?] above appears to be due to the very reverse of
the process by which I have sought to explain the development of aspiration
**within the word:** an earlier word-initial aspirated (voiceless) affricate
*[tsh] would appear to have developed into a (non-aspirated) voiceless
fricative ([s-]), perhaps through a weakening of the plosive element giving
rise to * [ssh] and *[sh] as intermediate stages. Michailovsky 1979 gives
six examples in which he associates his root-initial S with TS as members
of a transitive-intransitive pair; e.g. 'TSUPS itr. "gather", SUPS tr.
"gather"', 'TSONT itr. "fall over", SONT tr. "Fell, knock over"' (25). This
would make his S- in certain lexical items a reflex of *TSH-.

5.    These two fricatives are necessarily voiceless; for voiced fricatives
do not occur in Limbu, except for [ z] as an occasional fast-tempo variant
of the affricate [dz,] e.g. [mEza?tEnnE] 'do not feed him', 'do not play'.

6.    Limbu books, in the Kiranti script, also show some confusion in
spellings with **r-**; but in their case the confusion is with **l-**, e.g.
<u>sap-ra</u> for <u>sap-la</u> 'book'. Probably the reason for this is that, apart from

loan-words such as **ra-ja** 'king', [1] and [R] are complementarily
distributed: [1] is restricted to initial position in lexical items,
and can occur in word-initial position; [R] is restricted to the final
position in lexical items, but does not occur in word-final position;
e.g. [1E:RaN'] 'he stretched me', [kE1E?ERu?] 'you stretch him', but
[kE:1E?] 'he stretches you'. Chemjong 2018 V.S. gives only one page of
entries with word-initial **r**.

7.    'I have adopted Jim Matisoff's "allofam" for "member of a word family",
and his sign to indicate this relationship. In most of the finals - - -
the formal difference between the allofams lies in the postfinal element.
Thus when I refer to the $\emptyset$-, T- or S-allofam of a family, I am referring
the postfinal not to the final: HA:P itr. "weep" is the $\emptyset$-allofam (in spite
of its final -P) of the family HA:P/HA:PT/HA:PS; HA:PT tr. "mourn" is the
T allofam of HA:P (or of the family), etc.' (2-3).

    While I recognize that his fellow specialists owe a considerable debt
to Matisoff for introducing the terminology of procreation into Tibeto-
Burman studies, through 'tonogenetic' (Matisoff 1970) and 'the "organic"
approach to linguistic comparison' (Matisoff 1974-5), he should not lead
us into miscegenation: the etymological bastard 'allofam' should be replaced
by some such term of pure lineage as **allogene** or **allophyte**.

8.    Michailovsky has symbolized his short-quantity root PER 'fly' (18) as
long-quantity (PE:R) on p. 26; the long-quantity symbolization is supported
by Weidert 1982:

    '12 pEEma?, pEErE?, pEE-a' (9).

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Phonetic symbols specially devised as substitutes for the symbols of the
International Phonetic Alphabet

?   (voiceless) glottal stop or plosive

S   voiceless alveolo-palatal friction

J   voiced palato-alveolar friction

K   voiceless uvular friction

H   voiced arytenoidal (glottal) friction

R     "    alveolar tap

N     "    velar nasal

N     "    palatal nasal

    voiceless velar nasal (section 13 only)

m     "     labial nasal

E   voiced syllabic front spread vowel, half-open

U    "     "      back rounded   " , close to half-close

I    "     "      front spread   " ,  "   "   "

O    "     "      back rounded   " , open

A    "     "      " spread   " ,  "