

# LEPCHA AND BALTI TIBETAN: TONAL OR NON-TONAL LANGUAGES?

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## Tone-language Criteria

Until recently languages have been classified as either tonal or non-tonal, no attempt being made to sub-classify within the tone-language class. Pike, for example, excludes Swedish and Norwegian because they fail to satisfy the criterion "a language having lexically significant, contrastive, but relative pitch on each syllable", though he does at least suggest the possibility of admitting them to a new type of tone language.<sup>1</sup>

Gleason has since proposed that "at least four types" of tone language should be recognized on the basis of a fourfold distinction in the relationship of tone with intonation.<sup>2</sup> The Lhasa dialect of Tibetan he provisionally assigns to the fourth of these types, characteristics of which are that: (i) "intonation supplants tonal contrasts in part of the syllables. . . . Lexical units are found with their inherent tones only when they occur in certain restricted positions in tonal phrases, typically initial. In other positions these basic tones are more or less levelled out under a pervading system of morphophonemes", and (ii) "intonation may supplant tone on a much more extensive scale than this. . . . In utterances . . . tonal distinctions are very nearly levelled out, and a sentence intonation system takes its place.<sup>3</sup> On a sentence level Lhasa Tibetan is in no sense a typical tone language."<sup>4</sup>

Balti, a Western-Tibetan dialect, has, by implication, been classified as non-tonal;<sup>5</sup> Lepcha, on the other hand, has been regarded as tonal.<sup>6</sup>

<sup>1</sup> K. L. Pike, *Tone Languages*, Anne Arbor, 1948, 3, 14-15.

<sup>2</sup> H. A. Gleason, Jr., Review, *Language*, 37, 2 (April-June 1961), 298.

<sup>3</sup> The first of these characteristics can be illustrated from Y. R. Chao's phonemic analysis of Lhasa Tibetan in *Love Songs of the Sixth Dalailama* by Yu Dawchuyuan and transcribed by Dr. Jaw Yuanrenn (Y. R. Chao), Peiping, 1930, 27-8 and from R. K. Sprigg, "The Tonal System of Tibetan (Lhasa Dialect) and the Nominal Phrase", *BSOAS*, XVII, 1 (1955), 149-52, in which the second syllable of a disyllabic noun is shown to have regularly the higher of two distinctive pitch levels, and the second characteristic from R. K. Sprigg, "Verbal Phrases in Lhasa Tibetan-I", *BSOAS*, XVI, 1 (1954), 143-6, in which, in "Emphatic Sentences", the syllables of all words following the emphasized word are shown to have low pitch, much as in English.

<sup>4</sup> Gleason, *id.*, 299-300.

<sup>5</sup> H. A. Jäschke distinguishes the dialects of Spiti and of Central Tibet (Tsang) from Balti and all other Tibetan dialects as the only ones to be tonal (*A Tibetan-English Dictionary*, London, 1934, xiii-xiv, xvi-xxi); but, against this, two Kham dialects, of eastern Tibet, have also recently been classified as tonal (two-tone) (P. S. Ray, "Kham Phonology", *JAOS*, 85, 3 (July-September 1965), 336-42).

For modern classifications of the Tibetan dialects I have relied on G. Uray,

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The highly restrictive definition of tone applied by Pike would certainly exclude not only Balti but also Lepcha from the tone-language class; for both languages have "lexically significant contrastive pitch" not on "each syllable" but only on the syllables of polysyllabic nouns, and show no lexically significant pitch distinctions for syllables in other positions. Gleason's definition of tone, however, might not exclude Balti and Lepcha; for both make use of distinctive pitch in something like the manner that he describes for his "fourth type" of tone language, of which he gives Lhasa Tibetan as a model. The extent to which they do this, though, is much less than in Lhasa Tibetan; and one may reasonably ask whether their use of it is on a sufficient scale for them to qualify for membership of that type. Is there, in fact, a minimum degree of utilization, or, rather, should a minimum degree be recognized, whereby candidate languages will be either accepted or rejected? Alternatively, would it be useful to distinguish a class of languages as partly tonal?

Another factor that needs to be taken into account, and is considered in this article in relation to Balti and Lepcha, is: are languages in which pitch features are relatable to such other features as breath force and vowel duration to be classified as tone languages, the associated breath-force and vowel-duration features being at least to that extent subordinated to pitch, or are they to be classified as stress languages or as quantity languages, with regularly associated pitch features?

These, then, are the two problems discussed in this article, the former concerned with variations in the degree to which lexically distinctive pitch is utilized, and the latter with the possibility of associating that use of lexically distinctive pitch with prosodic systems other than tone.

## I. Degree to which lexically distinctive pitch is used

### A. Balti

In Balti lexically based differences in pitch do not apply to verbs, particles, or monosyllabic nouns, but only to disyllabic and trisyllabic nouns. Most of these have the lower of the two pitch levels initially ([ $\bar{\quad}$ ,  $\backslash$ ]);<sup>7</sup>

*Continued from previous page—*

*Kelet-Tibet nyelvjárásainak osztályozása*, Budapest, 1949, and A. Róna-Tas, *Tibeto-Mongolica*, The Hague, 1966, especially 21-33.

<sup>6</sup> N. C. Bodman (Cornell) is inclined to treat Lepcha as tonal (personal communication); so, too, is Prabhakar Sinha (Deccan-College Postgraduate and Research Institute), who kindly allowed me to see his unpublished material.

<sup>7</sup> But [ $\check{\quad}$ ,  $\wedge$ ] in the case of disyllabic nouns whose initial syllable is vowel-final and second syllable vowel-initial, e.g. [sna:] ear, [pɹu:] child, son, [tɔ:] rajah.

The phonetic transcription, in the International Phonetic Alphabet, shows only as much detail as the point at issue requires. [r] symbolizes a one-tap, or rolled, alveolar, but dental when preceded by either of the dental symbols [t] and [d], and to be distinguished from an alveolar fricative ([ʃ]); [V] and [C] symbolize any appropriate vowel or consonant respectively; high-pitch-bearing syllables are marked, when necessary, by an acute accent.

but eighty-four nouns, of which three are trisyllabic, have initial high pitch ([ $\bar{\quad}$ ,  $\backslash$ ]), and might have to be marked in a systematic orthography, though the fact that they fall into seven fairly well-defined groups might make this unnecessary.<sup>8</sup>

These groups are:

#### 1. [ $\bar{\quad}$ , $\backslash$ ]

- (a) loan words (22), e.g. [fikir] worry (Urdu),<sup>9</sup> [ʔata] father (Turkish), [ʔamma] but (Persian), [buespət] Thursday ([ʔ] Hindi), [ʃahar] city (Urdu), [moxɔr/mohɔr] seal (Persian);
- (b) quantity words (13):
  - (i) [-tse/-tsa]: [ʔaptse]/[ʔaptsa] later
  - (ii) [-tʃi]: [tʃhɔntʃi] some, [tʃiktʃi] alone, [gʃentʃi] short slope, [ʃaptʃi] flash, [kottʃi] a short while, [liptʃi] a very little
  - (iii) [-tsi]: [tsiltsi] a little
  - (iv) [ʔiʃin] a lot, [tita] small, [le:gi]/[le:i] very;
- (c) place, etc. (11): [diba], [dʒua], [dika] here, [deba], [deka], [ʔeka] there, [ʔawa] over there, [deni] thus, [dekhana] then, [denari] thus, [dopa] moreover;
- (d) relationships (10; 1 also included under (a)): [ʔata] father, [ʔaŋɔ] mother, [fɔnɔ] (K. [ph-]) brother (younger), [nɔŋɔ] sister (younger), [ʔaʃe] sister (elder), [nɛnɛ] aunt (younger), [mɔmɔ] uncle (maternal), [ʒã:mɔ] (K. [dʒ-]) uncle (maternal), [tʃhaŋɔ] niece, cousin; granddaughter, [matʃɔ] foster-;
- (e) place names (5): [ʃigʌʃ] Shigar, [tʃhɔrbət] Chorbat, [xapəlu] Khapalu, [keres] Kiris, [nurthan] [ʔNurthang];
- (f) [-mɔ] (5; 2 also included under (d)): [gɔnmɔ] shirt, [thɔnmɔ] arrival, [tsutmɔ] doll, [mɔmɔ], [ʒã:mɔ] (K. dʒ-) uncle (maternal);
- (g) miscellaneous (21): [butsha] man, male, [mala] ever, [snɪŋtʃɔp]

<sup>8</sup> The dozen or so Balti-speakers who write the language, using the Persian script do not symbolize the distinction, except that, where the second syllable is open and its vowel neutral, the two former types of pitch pattern are indicated by final *alif* (-*ā*) and the two latter by final *he* (-*ah*); e.g. [butshá (:)] *buzháh* son, child, boy, youth; [bútsha] *buzháh* male, man.

<sup>9</sup> My informant for the Skardu dialect (S.), the prestige dialect of Baltistan, was Zakir Hussain Baltistani, a seventeen-year-old student, who was also an announcer for Radio Pakistan's daily broadcasts in Balti, and son of Fida Hussain Shamim, the poet laureate of Baltistan. For the Khapalu dialect (K.) my informant was Abdul Karim, a middle-aged watchman. The research was done in Rawalpindi (November 1964-March 1965), the Pakistan Government having refused me permission to visit Baltistan itself.

Unless otherwise indicated all examples are of the Skardu dialect.

My study of Balti was made immeasurably easier by the kindness of A. F. C. Read (author of *Balti Grammar*, London, 1934), in allowing me to copy his unpublished Balti-English dictionary.

dullard, [tsoŋtsox] very white, [trəspa]<sup>10</sup> (K. [tɿ-]) [a Khapalu dish], [ʔatfɔŋ] Ladakhi, [tʃhæxdum] clapping, [bizu] [woman of Sayyid family], [bramos] brass, [korɔs] [outer surface of knee-cap], [tʃhamət] [bunch of fruit on the tree], [damən] [small drums], [qəŋdɑ] bamboo torch, [həʔi] by force, [kəli] porridge, [kəndari] around, [kaʔo] [kind of torture], [khachu] wool waste, [korɔs] cobble-stone, [khəsoʔ] large gourd, [məskut] walnut sauce, etc.

The initial-high-pitch polysyllabic nouns are, therefore, confined to these seven categories; but these categories are not composed entirely of initial-high-pitch polysyllabic nouns. On the contrary, initial-low-pitch polysyllabic nouns are in a majority in each category:

2. [ˌː / ˌː \]

- (a) loan words: many more than twenty-two, e.g. [magaʔ] but (Urdu), [saman] luggage (Urdu), [ʔaxən] chaplain (Persian), [sabaq] lesson (Urdu);
- (b) quantity words (5):
- (i) [-tse]: [jyntse] a little, [tshuntse] a small one, small, [ditse] this much, [ʔajaptse] in the late afternoon
- (iv) [khaik] a few;
- (c) place, etc. (3): [dikha] this way, [dekha], [ʔekha] that way;
- (d) relationships (22), e.g. [ʔato] father (honorific), [nənɔ] son (royal), [ʔama] mummy, mother (archaic), [boŋɔ] daughter, girl, [matʃun] aunt (maternal), [minɔmɔ] brother (the remainder are given in an appendix);
- (e) place names (4): [skardo] Skardu, [kharman] Kharmang, [ɣaras] Gharas, [kargil] Kargil;
- (f) [-mɔ] (18), e.g. [bɔdmɔ] Tibetan woman, [tənɔmɔ] show, [tsenmɔ] game (the remainder are given in an appendix);
- (g) miscellaneous (many more than twenty-one; all disyllabic nouns other than those listed in section 1 and section 2 (a-f)), e.g. [butsha] child (cf. 1(g) [butsha] man), [haske] tomorrow, [boŋbu] donkey.

In addition to the eighty-four noun examples in section 1 all verbal nouns, which are analysed grammatically as comprising verb and nominalizing particle ([-pa/ba/ma/a/fa] (K. [-pha])), have the type-1 pitch patterns, with first-syllable high pitch, e.g. (the high-pitch-bearing syllable is marked with an acute accent)

[rdúnma] hitting	cf. [rdunmá] beam (K.), (S. [ɣd-])
[rgyéiba] conquering	cf. [rgyelbá] precious
[tjaqpa] being able to carry	cf. [tjaqpá] patience, endurance.

<sup>10</sup> Possibly a verbal noun "slicing"; on verbal nouns see below.

Indeed a verbal noun and an associated noun are occasionally distinguished in this way; e.g.

[rgóspa] needing	cf. [rgospá] need
[snjélba] begging	cf. [snjelbá] poverty.

This distinction also extends to compounds; e.g. [tʃélbatʃən] (K. [kɿ-]) "one who is ashamed", cf. [tʃélbátʃən] (K. [kɿ-]) "something shameful".

Disyllabic forms in which the first syllable is vowel-final and the second syllable vowel-initial are perceived phonetically as monosyllables with long vowel duration ([-V:]). Only two such examples have been noted as having initially high pitch, the first syllable of [le:gi], or [le:i], "very" (ɿ(b)(iv)); the rest have initial low pitch, with a rise or rise-fall ([ / / ^]); e.g. [tsho:] "nephew", "cousin", "grandson", [pɿu:] "child", "son", and the trisyllables ([^ \_]) [ja:tse] "this much", [ba:ntʃi] "approximately", [tsa:mtse] "how much".

Certain disyllabic lexical items show a variation in the pitch of their syllables between the lower of the distinctive pitch levels and the higher according as they are or are not compounded with another (monosyllabic) lexical item to form a trisyllabic word. The disyllabic lexical items [polo], [phaʔin], and [bəle], for example, when un-compounded, belong to the majority class, with first-syllable low pitch and second-syllable high ([poló], [phaʔin], [bəlélé], ball, dried apricot, bread); but, when compounded with a preceding monosyllabic lexical item to form a trisyllabic word also belonging to the majority pattern, the first syllable of these lexical items is, as second syllable of the word, characterized by high pitch, while their second syllables have either high or low pitch according to intonation; e.g. [kəŋpólo] "football", [ɿtapólo] "polo" (lit. horse-ball), [ɿtəppháʔin] [stoned large apricot], [kəŋpáʔin] [kind of apricot], [ɿtsəbbəle] [bread from germinating wheat grain], which are identical in pitch patterns with such trisyllabic nouns as [xoxóro] "thorn", [ʔaʔipa] "owner", "husband".

The pitch potentiality of either syllable of these disyllabic lexical items is, therefore, twofold, the actual pitch level in a given instance being a function of the type of word, trisyllabic or disyllabic.

## B. Lepcha

In Lepcha, as in Balti Tibetan, it is only in polysyllabic nouns that pitch levels (a higher and a lower) need to be distinguished; and, again, it is the lower of the two distinctive levels ([ˌː / ˌː \]) that is much the more common initially. The contrasting minority patterns, with high initial pitch ([ˌː / ˌː \ \_]), have, however, been recorded for as many as ninety-seven nouns.

This minority pair of patterns applies principally to nouns compounded of two lexical items the second of which covers some such lexical category as "race" (-kup), "language" (-ring), or "tree" (-kúŋ), while the

first specifies the member of that category; e.g. *róng-kup* "Lepcha (race)", *lúm-kup* "Nepalese (race)", *róng-ríng* "Lepcha (language)", *lúm-ríng* "Nepali", *gyeng-kúng* "bamboo (tree)", *sóng-kúng* [kind of tree].<sup>11</sup> The function of the initial high pitch, the more prominent of the two pitch levels, thus appears to be contrastive: it distinguishes a particular member of the lexical category from other members. These nouns are therefore termed contrastive nouns.

### 1. Contrastive Nouns

The degree to which contrastive nouns are characterized by the minority pattern, with initial high pitch, either level or falling ([ $\bar{\quad}$  /  $\backslash$ ]), or the majority pattern, with initial low pitch ([ $\underline{\quad}$  /  $\underline{\quad}$ ]), is as follows (those of the minority pattern are given first in each case, at (i), and those of the majority pattern follow, at (ii)):

(a) *-kup*, "race", "child"; "small"

(i) *róng-*, *lúm-*, *tsong-*, *nyór-*; *ryót-*, *nám-*, *myók-*; *bán-*, *zo-* (9); Lepcha, Nepalese, Limbu, Newar, orphan, nephew, son-in-law; small knife, small grain.

One of these nine examples, *róng-kup*, has also been observed with the pattern [ $\bar{\quad}$ ]; this pattern suggests analysis into two monosyllabic words, though it may also be a careful, and perhaps artificial, pronunciation. It is, however, referred to in the rest of this article as the two-word pattern, to distinguish it from the majority pattern (first syllable low; second syllable high) and the minority pattern (first syllable high; second syllable high/low).

*bán-kup* and *zo-kup* have also been observed with the majority patterns.

(ii) *'á-*, *hík-*, *bík-*, *kúng-*, (*rung-nyít*) *'úng-*, *yu-*, *lí-* (7); child, chicken, calf, young tree, Little (Rungeet), lesser wife, cottage.

For these seven only the majority pattern has been observed. They contrast with the nine examples in (i).

The trisyllabic noun *'á-rát-kup* "Tibetan (race)" follows the majority pattern: first syllable low, second syllable high, and third syllable high or low ([ $\underline{\quad}$  /  $\underline{\quad}$  /  $\underline{\quad}$ ]) according to the intonation.

(b) *-ríng*, "language"

(i) *róng-*, *lúm-*, *pát-*, *pro-*<sup>12</sup> (4); Lepcha (language), Nepali,

<sup>11</sup> The transliteration follows Col. G. B. Mainwaring, *A Grammar of the Róng (Lepcha) Language*, Calcutta, 1876, except that an apostrophe is used initially in syllables that he treats as vowel-initial, and a circumflex for his symbol *rán*. The acute accent of the transliteration is not to be identified with the acute accent of the phonetic transcription (n. 7).

The material I owe to K. P. Tamsang, Mandai of Bong Bustee, Kalimpong, and formerly Secretary of the Darjeeling Lepcha Association, who was Research Assistant in Lepcha at the School of Oriental and African Studies for the session 1951-2.

<sup>12</sup> Mainwaring gives *prú* (*op. cit.*), cf. also his *Dictionary of the Lepcha-Language*, ed. Albert Grünwedel, Berlin, 1898).

Tibetan (language), Bhutanese (language).

One of these four, *róng-ríng*, has also been observed with the majority patterns.

(ii) *'á-*, *shú-* (2); voice, petition.

(c) *-cho*, "book"

(i) *róng-*, *lúm-*, *pát-* (3); Lepcha book, Nepalese book, Tibetan book.

(ii) None.

(d) *-kúng*, "tree"

(i) *gyeng-*, *sóng-*, *có-*, *rip-*, *zo-* (5); bamboo, [kind of tree], tea bush, [flowering tree], [lit. rice tree].

Three of these five, *sóng-kúng*, *rip-kúng*, and *zo-kúng*, have also been observed with the majority patterns.

(ii) *shíng-* (1);<sup>13</sup> [species of Macaranga].

*sung-lí-kúng* [kind of tree, species Terminalia], *phá-lák-kúng* [kind of tree], and *ra-nól-kúng* [kind of palm tree] correspond in pitch patterns to *'á-rát-kup* (a)(ii).

(e) *-bí*, "vegetable"; "edge"

(i) *zo-*, *gyek-*, *thok-*, *mán-*; *cú-* (5); curry (lit. rice-vegetables), [plant used in pickling], harvest, meat and vegetables; Himalayas.

Four of these five examples, *zo-bí*, *gyek-bí*, *mán-bí*, and *cú-bí*, have also been observed with the majority patterns.

(ii) None.

(f) *-bang*, "bottom"

(i) *kúng-*, *rip-*, *'úng-*, *cú-*, *zo-*, *lang-* (6); trunk, stem, bottom (of water), Kinchinjunga, foot of a rice plant, base of a rock.

*'úng-bang*, *zo-bang*, and *cú-bang* have also been observed with the majority pitch patterns; and all six have been observed with the two-word pattern (a)(i).

(ii) *po-* (1); bamboo foundation (place-name).

(g) *-lí* "house"; "heavy"; "seed"

(i) *róng-*, *krip-*, *món-* ([ $\text{?món-}$ ]);<sup>14</sup> *bán-*; *zo-* (5); Lepcha house (also place-name Rongli), [polluted house], hospital; [blunt side of knife blade]; rice seed.

All of these except *món-lí* have also been observed with the majority patterns. In the minority patterns the vowel of *zo-* is characterized by long duration ([o:]); in the majority patterns, on the other hand, not only is it

<sup>13</sup> *nyo-kúng* "grandmother" and *thi-kúng* "grandfather", which are also, perhaps, examples of the same lexical item as *kúng* "tree", also have the majority patterns.

<sup>14</sup> For the initial glottality, not symbolized in the orthography, see R. K. Sprigg, "The Glottal Stop and Glottal Constriction in Lepcha, and borrowing from Tibetan", *Bulletin of Tibetology*, III, 1 (Gangtok, February 1966), 6.

characterized by short duration but also, in fast tempo, by closeness ([u]), or by centrality with little or no lip-rounding ([ə]).

(ii) *bik-*, *rip-*, *bí-* (3); breeding cow, flower seed, vegetable seed.

*bik-lí* has also been observed with the two-word pitch pattern.

(h) *-bá*, "direction", "time"

(i) *pe-*, *nye-*, *me-*, *co-*, *cá-*, *go-*, *to-*, *lo-*, *'o-* (9); there, afterwards, down there, down there, a short time ago, sometimes, up there, nowadays, there.

*'o-bá*, *to-bá*, and *co-bá* have also been observed with majority pitch patterns.

(ii) *sa-* (1); where.

(i) *-re*, "thing"

(i) *'o-*, *co-* (2); that, that below.

Both *'o-re* and *co-re* have also been observed with the majority pitch patterns.

(ii) *'á-*, *sa-* (2); this, which.

(j) *-tsu*, "male"

(i) *món-* (1); boar (lit. pig-male).

(ii) None.

(k) *-tí*, "egg"

(i) *fo-* (1); bird's egg (cf. *ngo-tí* fish's roe).

(ii) None.

(l) *-mân*, "meat"

(i) *hik-* (1); fowl meat.

(ii) *bik-* (1); beef.

In each of the sets of examples (a)-(l) the second lexical item of the compound is constant, and the first is variable; a number of other sets of examples ((m)-(z)) have been collected in which it is the first lexical item that is constant; but an implicit contrast is still held to be responsible for the initially high pitch that those in section (i) of (m)-(z) share with those in section (i) of (a)-(l). Indeed some of the words will be found to be common to both series of examples; they comprise:

(m) *róng-*, "Lepcha"

(i) *-kup*, *-ring*, *-cho*, *-lí*, *-lyáng*, *-'(y)it*, *-nyú* (7); Lepcha (race), Lepcha (language), Lepcha book, Lepcha house (also place-name, Rongli), Lepcha country, Lepcha custom, Lepcha pen.

(ii) *-kyong* (1); Lepcha village.

All of these seven except *róng-kup* and *róng-'(y)it* have also been observed with the majority patterns; four of them, *róng-kup*, *róng-cho*, *róng-lí*, and *róng-'(y)it*, have also been observed with the two-word pattern.

(ii) *-kyong* (1); Lepcha village.

(n) *rip-*, "flower" (cf. (o), *kúng-*)

(i) *-kúng*, *-bang*, *-syng*, *-bor/-búr*, *-nyák*, *-nyóm*, *-fyá*, *-dong*, *-rik* (9); [?flowering tree], stem, flower garden, blossom, shoot, [?flower leaf], flower root, shoot, [?flowering creeper].

All of these nine words except *rip-bang* have also been observed with the majority pitch patterns; *rip-bang*, *rip-nyóm*, *rip-fyá*, and *rip-dong* have also been observed with the two-word pitch pattern.

(ii) *-lí* (1); flower seed.

(o) *kúng-*, "tree" (cf. (n), *rip-*)

(i) *-bang*, *-nyóm*, *-fyá*, *-rik*, (*lang*) *-syáng*, *-pi* (6); tree-trunk, tree leaf, tree root, [?tree creeper], rock, bark.

All of these six words except *kúng-bang* and *kúng-fyá* have also been observed with the majority pitch pattern; *kúng-bang* and *kúng-fyá* have also been observed with the two-word pitch pattern.

(ii) *-kup*, *-kóng*, *-nyák*, *-pót*, *-bor/-búr* (5); young tree, a tree branching out, shoot, fruit, [?tree blossom].

(p) *zo-*, "rice", "grain"

(i) *-kup*, *-kúng*, *-bí*, *-bang*, *-lí*, *-tsók*, *-'(y)ek*, *-gi* (8); small grain, [lit. rice-tree], curry (lit. rice-vegetable), bottom of rice plant, rice seed, rice-planting, rice harvest, rice shoot.

All of these eight except *zo-bí* have also been observed with the majority pitch patterns; *zo-kup*, *zo-bang*, *zo-tsók*, and *zo-'(y)ek* have also been observed with the two-word pattern.

(ii) *-nyót*, *-bor/-búr*, *-ben*, *-món*, *-mál*, *-nyák*, *-thyáng*, *-dyáng*, *-króp*, *-bim*, *-lit*, *-tsúp*, *-vyân*, *-h(y)ep*, *-ká*, *-thân* (16); rice field, rice flower, husk, paddy, rice-sowing, rice head, deep planting, pounding grain, rice-winnowing, [?rice run to seed], sifted rice, hard burnt rice, [?rice-planting], [?rice fan], rice, crop.

(q) *bán-*, "knife"

(i) *-kup*, *-lí*, *-ká*, *-húr* (4); small knife, [blunt side of blade], knife cord, crooked knife.

All four have also been observed with the majority pitch patterns.

(ii) *-hyám*, *-sór*, *-fut*, *-pók*, *-ngút* (5); sheath, blade, hilt-ring, dulled knife, [sharp side of blade].

(r) *cú-*, "edge"

(i) *-bí*, *-bang*, *-rum* (3); Himalayas, Kinchinjunga, God of Snows.

*cú-bí* has also been observed with the majority patterns.

(ii) None.

(s) *'úng*, "water"

(i) *-bang*, *-krúl*, *-ngo* (3); source, river-bed, stale water.

All three have been observed with the majority patterns; and 'úng-bang has also been observed with the two-word pattern.

- (ii) -kup, -kyong, -hor, -king, -jop, -da, -láp (7); Little (Rungeet), river, spate, river bank, marsh, lake, well.
- (t) hik-, "fowl"  
 (i) -mân (1); fowl meat.  
 (ii) -kup, -bom, -bu (3); chicken, matured hen, cockerel.
- (u) mân-, "meat"  
 (i) -bí (1); meat and vegetables.  
 mân-bí has also been observed with the majority patterns.  
 (ii) -jú (1); raw meat.
- (v) dâm-, "fasten"  
 (i) -phú (1); [?fastening].  
 dâm-phú has also been observed with the majority patterns.  
 (ii) -chók (1); wall.
- (w) cá-, "recently"  
 (i) -bá (1); a short time ago.  
 (ii) -náp (1); yesterday evening.
- (x) hing-, "ginger"  
 (i) -gryóng (1); root of ginger.  
 (ii) None.
- (y) thyák-, "head"  
 (i) -tuk (1); hat  
 thyák-tuk has also been observed with the majority patterns.  
 (ii) None.
- (z) pa-/pun-,<sup>15</sup> [?"royal"]  
 (i) (pa)-no, (pun)-dí (2); king, queen.  
 Both have also been observed with the majority patterns.  
 (ii) None.

The total number of contrastive nouns to have been observed with the minority pitch patterns, with word-initial high pitch and the potentiality of a fall in pitch on the first syllable ([<sup>-</sup> / \ ])] is, thus, seventy-nine. More than half of these (forty-six) have also, on occasions, been observed to have the majority pitch patterns, with word-initial low pitch, and with the potentiality of a fall in pitch on the second syllable ([<sub>-</sub> / \ ])]. This latter pattern seems to be appropriate to these forty-six nouns when they occur in clauses in which there is a contrast involving the second lexical item; e.g.

- (i) 'á-re pun-dí-ká [<sub>-</sub> \ ] ma-gon; pa-no-ká [<sub>-</sub> \ ] b(y)í  
 (ii) 'á-re pa-no-ká [<sub>-</sub> \ ] ma-gon; pun-dí-ká [<sub>-</sub> \ ] b(y)í  
 (i) This is not for the Maharani; give it to the Maharajah.  
 (ii) This is not for the Maharajah; give it to the Maharani.

<sup>15</sup> pa/pun is, perhaps, a loan from Tibetan; cf. dpon "chief", "master", "lord".

In these two examples the vowels of the syllables *dí* and *no* have long duration ([di: nū:]); in non-contrasting clauses they have short duration ([di nū]), e.g. 'á-re pa-no [ \ ], 'á-re pun-dí [ \ ]. A corresponding alternation in pitch has been noted for *gyek-múk* and *gyek-bí*, together with a matching alternation in vowel duration for the vowel of the syllable *bí*; e.g.

- (i) 'á-re gyek-múk [ \ ] ma-gon; gyek-bí [ \ ] go  
 (ii) 'á-re gyek-bí [ \ ] ma-gon; gyek-múk [ \ ] go  
 (i) This is not *gyek-múk*; it is *gyek-bí*.  
 (ii) This is not *gyek-bí*; it is *gyek-múk*.  
 (*gyek-múk* and *gyek-bí* are plants for pickling).

In these pairs of examples the direct contrast of one second-syllable lexical item with another, of *-dí* with *-no*, and of *-múk* with *-bí*, is held to be responsible for the choice of the majority pattern, with fall in pitch on the second syllable, rather than the minority pattern; a similar contrast, but an implicit one, between first-syllable lexical items is thought to be responsible for the alternative use of the minority patterns, with first-syllable high pitch, for these forty-six nouns; e.g. 'á-re gyek-múk [ \ ], 'á-re gyek-bí [ \ ]. Indeed, if these two hypotheses are correct, one might expect a similar alternation of pitch patterns, between minority and majority, on the part of the remaining thirty-three contrastive nouns in sections (i) that have so far been observed to have only the minority patterns, and, further, for the fifty-five contrastive nouns that have so far been observed to have only the majority patterns (sections (ii)).

## 2. Other Nouns

There remain, in the available material, a further eighteen disyllabic nouns for which the minority patterns have been observed but for which either an actual or an implicit contrast does not provide an explanation. A majority (thirteen) of these appear to be loan words, from Tibetan or Nepali, some of which follow pitch patterns of the donor language.

### (a) Loan Words

The loan words comprise: *cho-ko*<sup>16</sup> paper (Tib. *shog-bu*), *bá-zá* o'clock (Nep.), *wo-mo* fox (Tib. *wa-mo*), *to-mo* trousers (Tib. *dor-ma*), *phi-ling* snuff (Tib. *phyi-gling*), *kye-mo* peace-maker (Tib. *bkye*), *khe-bo* tax-payer (Tib. *khral*), *gye-bo* conqueror (Tib. *rgyal*), *kre-bo* [muleteer] (Tib. *drel*), *che-mo* prostitute (Tib. *chal-mo*), *nók-tsó* ink (Tib. *snag-tsha*), *kri-bo* ([th-]) bell (Tib. *dril-bu*), *phyeng-bo* rosary (Tib. *phreng-ba*).

### (b) Non-loan Words

The non-loan words comprise: '(y)eng-nga/ing-nga child, *pem-bár*<sup>17</sup> bamboo torch, *lí-mo* great house, *bá-mo* female demon, *bo-mo* parents.

<sup>16</sup> Mainwaring, *Dictionary*, *cho-gú*.

<sup>17</sup> Mainwaring, *id.*, *pem-bur*.

Six of the eighteen disyllabic nouns in this section (2) have also been observed with the majority pattern, and may be in transit from the minority to the majority class: (a) *cho-ko*, *wo-mo*, *nók-tsó*, *to-mo*; (b) *lí-mo*, *bá-mo*.

### 3. Summary

The number of disyllabic nouns in Lepcha is considerable. An overwhelming majority of these have been observed to have low pitch initially, the second syllable being high and either level or falling. A small minority (forty-five) on the other hand, have always been observed to have high pitch initially, level or falling, the second syllable being high or low correspondingly; while fifty-two have been observed to have both types of pattern. Borrowing from other languages, especially Tibetan, may well account for some examples of the minority patterns;<sup>18</sup> contrast is thought to account for the rest.

The case against classifying Lepcha and Balti as tone languages does not, however, rest on the number of contrasting examples alone: an alternative statement, in which the pitch component of the contrast is treated as accessory to some other feature, is also available.

## II. Pitch and Breath Force; Tone and Stress

The alternation in pitch pattern on the part of the fifty-two Lepcha disyllabic words that have been observed with both the minority and the majority patterns raises considerable difficulties for tonal analysis, especially for the tonal analysis of the contrastive nouns. In a tonal analysis based on the word the forty-six nouns for which either type of pattern is possible, *e.g. róng-ring* Lepcha (language), *zo-li* rice seed, *bán-kup* small knife, would have to be given a double tone classification, an unusual distinction among tone languages, as both tone-1 and tone-2 words; and this double classification would have to be extended to as many of the contrastive nouns as were subsequently observed to alternate between the minority and the majority patterns. Equally, in a tonal analysis based on the syllable, it would be necessary to recognize an alternation in the tone class of the first syllable of any of those forty-six nouns, *e.g. róng(-ring)*, *zo(-li)*, *bán(-kup)*, each of the alternative tones being appropriate to the same environment:

tone	environment
high [ˈː]	following syllable high-tone and level
low [ˌː]	" " " " "

this would mean that each of these syllables, and other comparable syllables, contrasts tonally with itself in the same environment.

The same difficulty, but in a less extreme form, and on a far less extensive scale, arises in Balti too; for the lexical items [di] and [ʔɛ] (A.c), and

[ʔa] and [ma] (A.1(d), A.2(d)), are exemplified as first syllable in words of either type of pitch pattern, and are characterized accordingly by contrasting pitch levels:

1: high [dika] here [ʔɛka] there [ʔaŋɔ] mother [ˈː / \ˌː]

2: low [dikha] hither [ʔɛkha] thither [ʔajo] mother (hon.) [ˌː / \ˈː]

It is not a case, here, of a given word's having the potentiality of both types of pitch pattern, as in the forty-six Lepcha words, but of a given monosyllabic lexical item's having either of the contrastive pitch levels in what is taken to be an equivalent environment. The environment of [di], [ʔɛ], and [ʔa] in these disyllabic words is, admittedly, different as regards initial features of the following syllable ([ka] versus [kha], [ŋɔ] versus [jo]); but the differences are not such as to produce any constant phonetic feature of the second syllable that could be treated as conditioning, or determining, the alternative distinctive pitch levels of the first. Pitch features, it is true, could be treated as a conditioning factor up to a point; for, in the second of the two type-1 and type-2 pitch patterns, in which there is a fall in pitch affecting the first syllable in the type-1 pattern but the second in the type-2, one could attribute the high pitch of [di], [ʔɛ], and [ʔa] in [dika], [ʔɛka], and [ʔaŋɔ] to the low pitch of the second syllable, and the alternative low pitch of those three syllables in [dikha], [ʔɛkha], and [ʔajo] to the high (and falling) pitch of the second syllable; but this would not work for the first pattern of each type: here the pitch feature of the second syllable is identical (high and level) in both the type-1 and the type-2 pattern. It seems preferable at this point, therefore, to consider a form of statement in terms other than those of pitch unsupported by other features.

In Lepcha and Balti alike the first syllable of disyllabic nouns of the two minority patterns ([ˈː / \ˌː]; I.A.1, I.B.i) is more prominent than the second. It is not surprising that this should be so in the second of these two patterns, in which the word is characterized by fall in pitch; for it is the first syllable that bears the fall ([ˈː]); but it is equally true where the word is characterized by the first of the two patterns, in which there is no fall in pitch ([ˈː]). That is to say, the first syllable seems more prominent than the second not merely when it is higher in pitch but also when both syllables have the same pitch features. In the latter case, then, the greater prominence of the first syllable cannot be due to difference in pitch, and must be due to a difference in breath force, supported, but only where the first syllable is an open syllable, by long vowel duration.

The importance of breath force in this, the type-1, or minority, pair of pitch patterns suggests that it too should be taken into account in dealing with the problem arising out of the alternation in pitch level. In the second of the type-2 pitch patterns (I.A.2, I.B.ii) the second syllable seems much more prominent than the first ([ˌː / \ˈː]), largely, no doubt, because it is characterized by fall in pitch, but also because of greater breath force and, in open

<sup>18</sup> Cf. also Sprigg, "The Glottal Stop", 8-10, 13.

syllables, long vowel duration. Thus far, then, the two types of pattern contrast in breath force, in pitch, and, in open syllables, in vowel duration; but, since breath force is the most prominent of the three features, there should be no obstacle to associating all three in the term "stress", the stress system to comprise two terms, applicable to the disyllabic word. The exponents of one term would be the breath-force, pitch, and vowel-duration features described above for the type-1 pattern, in which (i) the first syllable has a higher degree of breath force than the second, (ii) the first syllable has the high pitch, either level or falling, and the second a level pitch, either high or low accordingly, and (iii) the vowel of the first syllable, if open, has long duration; the exponents of the other term would be those same three features as described above for the second of the type-2 patterns, in which (i) the second syllable has a higher degree of breath force than the first, (ii) the second syllable has a fall in pitch, from high, the first being low and level in pitch, and (iii) the vowel of the second syllable, if open, has long duration. Unfortunately, the position is not so straightforward in words characterized by the remaining pitch pattern, the first of the type-2 patterns ([ - - ]).

In such words prominence seems to depend to some extent on whether syllables are closed or open; and the position is not quite the same in the two languages. In Lepcha, on the one hand, the second syllable generally seems more prominent than the first when it is closed ([CV(C)CVC; - -]); but when the second syllable is open, usually it is difficult to determine which of the two syllables is more prominent, or, rather, whether either syllable is more prominent than the other. In Balti, on the other hand, it is the first syllable that generally seems the more prominent of the two ([ - - ]), except that examples in which the second syllable is closed are difficult to decide.

The association of the four types of feature, pitch (high *v.* low, level *v.* falling), vowel duration (short *v.* long, but only in open syllables), syllable final features (open *v.* closed), and breath force (strong *v.* weak) in both the minority and the majority patterns is summarized in the following table (absence of "long" and "str.", for strong, implies "short" and "weak" respectively; "L" represents "Lepcha" and "B" "Balti"):

1st syllable	2nd syllable	word
	<i>minority</i>	
1. long, str., high, level.	high, level	[ - · ]
2. long, str., high, fall.	low, level	[ \ · ]
	<i>majority</i>	
3. low, level.	long, str., high, fall	[ · \ ]
4. low, level.	str., high, level (L)	[-C] [ · - ]
5. str., low, level.	high, level (L)	[-V] [ - · ]
6. str., low, level.	high, level (B)	[ - · ]

The last two of these sets of associated prominence features (5-6) mark what would otherwise be a direct contrast in the relative prominence of the first and the second syllable, on which the (phonological) two-term stress system outlined above could be based, pitch and vowel-duration features being associated with the dominant feature, breath-force. As it is, all that can be said is that the first syllable of the minority type of word is always more prominent than the second (1-2), while the second syllable of the majority type of word is sometimes more prominent than the first (3-4), or potentially the more prominent of the two, especially in Lepcha.

#### In Conclusion

Balti Tibetan and Lepcha have in common both (i) the grammatical and syllabic limitations on the occurrence of the lexically based pitch distinction whereby the difference between the high pitch level and the low is confined to nouns, and, further, to polysyllabic nouns, and (ii) similarity in the degree to which the distinctive pitch levels are used (eighty-four members of the minority class in Balti, and ninety-seven in Lepcha). These two common features give the appearance of a high degree of similarity as far as the function of pitch in the two languages is concerned; but Balti and Lepcha differ when one comes to consider the degree to which (i) individual lexical items alternate between the high pitch level and the low, and (ii) polysyllabic words alternate between the minority and the majority pitch patterns.

Only about a handful of Balti monosyllabic lexical items, [di], [ʔɛ], [ʔa], and [ma] (I.A.1(c-d); I.A.2(c-d)), are characterized, when first syllable of the word, now by the high pitch, now by the low (p. 196); the number of Lepcha lexical items that show this same pitch alternation as first syllables of the word is nineteen (*sóng, gyek, krip, 'a, to, co, róng, ríp, kúng, zo, bán, cú, 'úng, hik, mân, dâm, cá, thyák, and pa|pun*; I.B.(d-e), (g), (m-w), (y-z)), and this already considerable disparity is likely to be increased through further examples of lexical contrast in the first-syllable place of Lepcha polysyllabic nouns.

The alternation of the minority patterns with the majority for one and the same word is peculiar to Lepcha, and has the support of forty-six examples.

Alternation between the high and the low pitch for a given lexical item in first-syllable position in the word independently of conditioning factors in the second syllable is a strong argument against a tonal classification; and the alternation of the majority pitch patterns with the minority for the word as a whole is all but conclusive; for this latter alternation can only be accounted for through contrastive stressing: the minority pitch patterns are appropriate to the word in one type of stress environment (stress 1), and the majority patterns to that same word in the other (stress 2). In other words,



a tonal statement for these forty-six Lepcha disyllabic nouns would merely duplicate a stress statement, tone 1 being appropriate to that word in the conditions of stress 1, and tone 2 in the conditions of stress 2.<sup>19</sup> For Lepcha, therefore, a stress classification is preferred to a tonal classification; and the pivotal forty-six nouns would require a double stress classification (stress 1/2).

English provides something of a parallel to the forty-six Lepcha words with the double stress classification: such words as *Chinese* and *Burmese*, or the verbs *import* and *export*, also require a double stress classification to cover the alternation of first-syllable prominence for contrast with second-syllable prominence for all other circumstances.

In Lepcha as a stress language *zo*, for example, would have (i) the high pitch in *zo-bi*, for which only stress 1 (first-syllable prominence) has been observed, (ii) the high pitch, too, in *zo-li* when that word is given its stress-1 alternative (first-syllable prominence), but (iii) the low pitch in *zo-li* when given its stress-2 alternative (potential second-syllable prominence). Similarly, *ring* would have the high pitch in *'á-ring* (stress 2), the high pitch, too, in the word *róng-ring* when given its stress-2 alternative (second-syllable prominence), and either the high or the low pitch in *róng-ring* when given its stress-1 alternative (according as the first syllable does not, or does, fall in pitch).

Only the first of these two arguments against a tonal classification, the unconditioned alternation between the two pitch levels for the same lexical item as first syllable, applies to Balti, and that, too, on such a small scale as to favour a divergence in the treatment of the two languages. For Balti, provided, of course, that a minority class with a membership of eighty-four is taken to be utilization of pitch distinctions on a sufficient scale, classification as a tone language seems more appropriate than the stress-language classification applied above to Lepcha. Accordingly, the variable lexical items [di], [ʔɛ], [ʔa], and [ma], and any others that may come to light subsequently, will be said to have the high pitch in the (minority) tone-1 word patterns (I.A.1(c-d)), and the low pitch in the (majority) tone-2 word patterns (I.A.2(c-d)). Thus, the pitch feature of these lexical items is a function of the tonal classification of the word as a whole, in which they are exemplified as first syllable.

Although, by virtue of its classification as a tone language, the Balti dialect of Tibetan has thus been grouped with Vietnamese, for example, Burmese, and the Lhasa dialect of Tibetan, it is clearly very different from any of these, and from any of the four types suggested by

Gleason.<sup>20</sup> The grammatical limitation, to noun forms, and the further limitation to polysyllabic noun forms, would require it to be assigned to a different sub-class of tone language from any of those.

Classifying Lepcha as a stress language will, unavoidably, result in dividing Lepcha from Balti Tibetan and other tone languages, of whatever type or sub-class, and ranging it with English, for example, Russian, and Spanish; but, just as Gleason has shown the desirability of distinguishing 'at least four types' of tone language, so, too, is it desirable to distinguish sub-classes within the stress-language classification. The two distinctive pitch levels of Lepcha, restricted though their function is, will earn Lepcha a special status among stress languages.

#### Appendix

I.A.2(e) continued: [zizi] mother (royal), [ʔajo] mother (honorific), [bawa] father (honorific), [ʔaba] father (archaic), [kaka] elder brother, [ʔapo] grandfather, [ʔapi] grandmother, [ʔastʃo] daughter (royal), [butʃo] son (royal), [ʔatse] uncle (father's younger brother), [maŋpa] son-in-law, [naŋa] (K. [-ma]) daughter-in-law, [striŋmɔ] sister, [zənzɔs] wife, [tʃhuŋma] wife, [daxpɔ] husband.

I.A.2(f) continued: [tʃā:mɔ] woman of Chang Thang, [xɔrmɔ] Turkestani woman, [ɽgunmɔ] mare, [tsɔnmɔ] (female) slave or captive, [baxmɔ] bride, [tʃɔmɔ] Buddhist nun, rani (vulgar), [dɔlmɔ] female ibex, [daymɔ] house-keeper, [xuʔmɔ] female idiot, [xtʃənmɔ] female leopard, [drenmɔ] bear, [senmɔ] finger, [skinmɔ] [loan of corn during scarcity], [smɔnmɔ] abuse, [bɔjɔ] (K. [-mɔ]) equivalent price.

In addition to these nouns all adjectives in [-mɔ] have the majority pattern, e.g. [ljaxmɔ] good, [dɔxɔmɔ] (K. [gɽ-]) cold, [tʃɔnmɔ] high.

<sup>20</sup> I mention Vietnamese as an extreme type of tone language, having, I understand from my colleague Prof. E. J. A. Henderson, few, if any, intonational features; for Burmese and Tibetan as both tonal and intonational languages see R. K. Sprigg, "Junction in Spoken Burmese", *Studies in Linguistic Analysis*, Oxford, 1957, 126, "Burmese Orthography and the Tonal Classification of Burmese Lexical Items", *Journal of the Burma Research Society*, XLVII, 2 (December 1964), 415-40, "Verbal Phrases in Lhasa Tibetan - 1", 141-6 and 150-2, and "The Tonal System of Tibetan (Lhasa Dialect)", 146-53.

Gleason, *op. cit.*, 298-300.

<sup>19</sup> Cf. also E. J. A. Henderson, "The Topography of certain Phonetic and Morphological Characteristics of South East Asian Languages", *Lingua*, 15 (1965), 409.