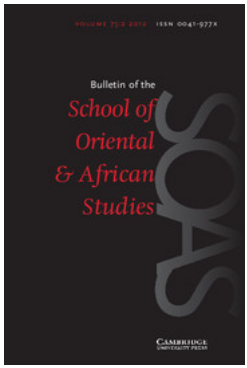

The Tonal System Of Tibetan (Lhasa Dialect) And The Nominal Phrase

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THE TONAL SYSTEM OF TIBETAN (LHASA DIALECT) AND THE NOMINAL PHRASE [1]

By R. K. Sprigg

Tonal Categories and Units of Structure

THE purpose of this article is to re-examine some of the ways in which tone has been stated in certain of the spoken Tibetan dialects, and to apply to the Nominal Phrase [2] in one of them, Lhasa Tibetan (LT), the suggestion that such statements can be more profitably associated not with the *syllable*, as hitherto, but with the *word*.

It is over seventy years since H. A. Jäschke made use of two prosodic categories, termed ' high-toned ' and ' deep-toned ', to account for certain phonetic features of ' words ' as pronounced by speakers of the dialects of the Central Provinces.[3] Subsequently, and as a result of original research, other phoneticians, notably Dr. Jaw Yuanrenn and the Rev. Mr. P. M. Miller,[4] have found themselves in agreement with Jäschke's two categories to the extent of stating their material in terms of two tonemes. The two tonemes are stated for the *syllable*.[5]

It would be idle to claim that it is anything but difficult to give an account of tone and intonation in any of the Tibetan dialects in question, but it may well be that some of the difficulties in Dr. Jaw's, and in Mr. Miller's, published work result from their technique of statement, which is based on the phoneme theory. In this article material elicited from a Lhasa-born Tibetan, Mr. Rinzin

[1] This article is based on a paper, ' The Tonal System of Nouns and Adjectives in the Lhasa Dialect of Spoken Tibetan ', read at the 23rd International Congress of Orientalists, at Cambridge in August, 1954.

[2] A corresponding tonal analysis, relating the two-term Tonal system to the word unit, has been applied to the *Verbal Phrase* in my ' Verbal Phrases in Lhasa Tibetan—I ', *BSOAS*, xvi, 1954, 150–3.

[3] ' Phonetic Table for comparing the Different Dialects ' (H. A. Jäschke, *Tibetan–English Dictionary*, pp. xvi–xvii). An examination of Jäschke's usage with regard to the word ' word ' makes it certain that he is not relating his tonal statement to the word in the sense in which it is used in this article (see below, Delimitation of the Word).

[4] *Love Songs of the Sixth Dalai Lama Tshangs-dbyangs rgyamtsho*, translated into Chinese and English with notes and introduction by Yu Dawchyuan and transcribed by Dr. Jaw Yuanrenn (Y. R. Chao) (Academia Sinica, Series A, no. 5, Peiping, 1930); ' The Phonemes of Tibetan (U-Tsang Dialect) with a practical Romanized Orthography for Tibetan-speaking Readers ', by Rev. P. M. Miller, B.S. (*Journal of the Asiatic Society. Letters.* Vol. xvii, No. 3, 1951, 191–216).

[5] ' Tone is a suprasegmental phoneme of the syllable ' (Miller, op. cit., 202); though not specifically stated, a corresponding analysis is implied by Dr. Jaw's syllabic system of tone-marking.

Wangpo,[1] has been stated in accordance not with an exclusively phonemic analysis but with the polysystemic ' prosodic approach ', promulgated by Professor Firth.[2] The prosodic approach has been adopted in the belief that it disposes of some of the difficulties mentioned above as arising out of the application of the phoneme theory.[3]

The difference in theoretical basis between the prosodic approach and the phoneme theory is reflected firstly in the setting up of a tonal *system*[4] to account for the phonetic material presented here, and secondly in the stating of that system not in relation to the *syllable* but to the *word*.

Delimitation of the Word

If the tonal system is to be stated with reference to the word, then the word must be delimited.[5] It is, however, possible to go a long way towards delimiting the word by utilizing for the purpose certain of the phonetic features that characterize the initial and the final consonants of syllables (C-, -C) in intersyllabic junction.[6]

[1] Rinzin Wangpo (rig-ḥdzin dbaṅ-po) (R) was employed by the School of Oriental and African Studies as a Research Assistant in London from December, 1948, until September, 1949. The material obtained from R. was checked against the utterances of other Lhasa-dialect speakers in Kalimpong and in Gyantse during the Session 1949–50.

[2] J. R. Firth, ' Sounds and Prosodies ' (*TPS*, 1948, 127–152). The titles of previous publications in which the ' prosodic approach ' has been used are given in W. S. Allen, ' Some Prosodic Aspects of Retroflexion and Aspiration in Sanskrit ', *BSOAS*, XIII, 1951, 945.

Subsequent publications include T. F. Mitchell, ' The Active Participle in an Arabic Dialect of Cyrenaica ' (*BSOAS*, XIV, 1952); R. H. Robins, ' The Phonology of the Nasalized Verbal Forms in Sundanese ' (*BSOAS*, XV, 1953); A. E. Sharp, ' A Tonal Analysis of the Disyllabic Noun in the Machame Dialect of Chaga ' (*BSOAS*, XVI, 1954); J. Carnochan, ' Glottalization in Hausa ' (*TPS*, 1952); R. H. Robins, ' Formal Divisions in Sundanese ' (*TPS*, 1953); T. F. Mitchell, ' Noun-Particle Complexes in a Berber Dialect ' (*BSOAS*, XV, 1953); W. S. Allen, ' A Study in the Analysis of Hindi Sentence Structure ' (*Acta Linguistica*, VI, Fasc. 2–3, 1950); E. J. A. Henderson, ' The Phonology of Loan-words in some South-East Asian Languages ' (*TPS*, 1951).

[3] Jaw makes use of five pitch-levels (op. cit., p. 27) and Miller of four (op. cit., p. 204). Other difficulties attributed to the phonemic technique of analysis may be illustrated from such statements as the following: ' The actual tones in connected speech follow the general principle of one tone being spread over two or more connected syllables. Thus, the high falling tone often becomes a high level tone, the following syllable or syllables, whatever its original tone, taking up a low or falling tone ' (Jaw, pp. 27–8). Miller makes use of the concept of ' Perturbation of Natural Tone ' (p. 206) implied by the quotation from Jaw above: ' a naturally high tone syllable may be perceptually lower than a naturally low tone syllable occurring outside the first named syllable's " intonation phrase " ' (p. 203); ' syllables other than the first in a word, and specially postpositionals and terminatives . . . are more susceptible to intonation pressure, and hence do not conform so readily to their inherent tone ' (p. 204).

[4] For the technical specialization of the terms ' structure ' and ' system ', see R. H. Robins, ' Formal Divisions ', 109.

[5] The Tibetan script recognizes the syllable, terminated by the ts'eg; and a unit, terminated by the śad, comprising an indefinite number of syllables but approximating to the sentence. No intermediate unit is recognized.

[6] Two structures are recognized for the syllable irrespective of grammatical category: CV, CVC. In my ' Verbal Phrases—II ', 320, only one structure was recognized for members of the verb category, viz. CVC: this statement has proved unsatisfactory.

The intersyllabic junction features referred to are best accounted for by setting up a two-term prosodic system of Junction, each of the terms having some phonetic exponents that are homophonous and others that are non-homophonous. The non-homophonous exponents may be used as criteria for the purpose of delimiting the word, and are consequently termed ' marker ' exponents. One type of marker exponent is held to mark the boundaries of words and hence interverbal syllable relations, including the beginning and end of sentences; and the other to mark the absence of word boundaries and hence medial, or intraverbal, syllable relations. The two terms of the Junction system may therefore conveniently be termed interverbal and intraverbal, with reference to the function of the marker exponents in the delimitation of words. Since they do not contribute to the purpose of this article, homophonous exponents of inter- and intraverbal junction are not dealt with here; but the marker exponents are treated in detail.

Marker exponents may be stated in relation to (I) the syllable-initial consonant (C-), and (II) the syllable-final consonant (-C).

I. Characterizing C-

A. *Interverbal*

The exponents of inter- and intra-verbal junction that characterize C- cannot be considered independently of the rate of utterance of the sentence; C- is characterized by one set of phonetic features when the rate of utterance is slow and careful, as when speaking to foreigners, and by other features when the rate of utterance is fast, and no concessions are made to the listener. The marker exponents of the two terms of the junction system in fast and in slow utterances are here considered in terms of a two-term Tempo system, ' fast ' and ' slow ', statable with reference to the sentence unit, hence ' fast tempo ' (ft) and ' slow tempo ' (st).[1]

Some of the exponents of inter- and intra-verbal junction may be stated as criteria for the delimiting of words for both ft and st, while others may be so stated for one of these two prosodic contexts but not the other. First to be stated are those which are valid for both ft and st. They comprise :—

(1) voicelessness (+ lateral occlusion) l̥
(2) ,, (+ apical friction) ɹ̥
(3) glottal friction h

Voice co-articulated with either lateral occlusion (l) or apical friction (ɹ) is an exponent of both inter- and intra-verbal junction, but *voicelessness* + either of these two types of articulation is a word-initial feature, as also is glottal friction, e.g. :—

[1] Cf. the prosodic statement of Tempo in relation to the Verbal Phrase in ' Verbal Phrases—I ', 149 : ' Rate of Utterance '.

(1)	l̥	l̥ø:lø: ˈtɕhɛ:nɛ:	(*lhod-lhod* [2] byas-nas
		ˈde:gəjĩ: [1]	bsdad-kyi-yin) [3]
		l̥u:lu: ˈɹe:	(*lhug-lhug* red)
(2)	ɹ̥	ɹ̥ɛ:ɹɛ: ˈtɕhɛ:nɛ:	(*hral-hral* byas-nas
		tsu:gydu:	btsug-gi-ḫdug)
(3)	h	haŋgo: ˈkhabɑ: ˈjø:	(lham-k'og ga-bar yod)
		ho:bə ˈtɕhi: le:ɕa	(hor-pa cig bslebs-šag) [4]

The usefulness of the various co-articulations of plosion (voice, voicelessness, etc.) for the delimiting of words is closely related to tempo, but there is, however, one co-articulation of plosion that both marks word-beginning and is also valid for either term of the Tempo system :—

(4) glottality (+ plosion)	ʔ, e.g.
ʔu: thiŋgidu:	(*dbugs* ḫt'en-gyi-ḫdug)
but cf. ˈdʑʌu: ˈtɕhi: thɛmbə	(ljags-*dbugs* cig ḫt'en-pa
nʌŋgidu:	gnaṅ-gi-ḫdug)

The remaining co-articulations of plosion are the following ; when plosion characterizes C-, it must have one of them as a co-articulation :—

voice	**b/d/g/ɟ/dʑ/dz/dɹ**
voicelessness + aspiration	**ph/th/kh/ch/tɕh/tsh/tɹ̥**
,, + non-aspiration	**p/t/k/c/tɕ/ts/tɹ**

With one exception (**dz**) voice is an exponent of both inter- and intra-verbal junction in ft and st alike, and cannot therefore be utilized for word-delimination. The degree to which the remaining two co-articulations,

[1] The phonetic examples are given in the International Phonetic Alphabet but subject to the same conventions as those stated in ' Verbal Phrases—I ', 142. Two additional symbols have been used in both the phonetic transcriptions and the transliterated text: (I) —/— Pause. (II) – – – Sentence incomplete or interrupted.

[2] Where possible, inter- and intraverbal junction have been illustrated from words having a common constituent in both of these two prosodic contexts ('lhod' in this instance), so that the exponents of either term may be given the maximum prominence.

[3] The task of writing down one of the modern spoken dialects of Tibetan raises problems of some difficulty, for none of the contemporary spoken dialects appears to have an orthography : they all make use of classical Tibetan as their written medium. Thus I have been informed by H. E. Richardson, C.I.E., O.B.E., formerly in charge of the Indian Mission, Lhasa, that ' it is perhaps not strictly correct to say that utterances in Lhasa Tibetan are written down at all. Tibetans do not write what they say except for special purposes such as your research and our sentences ' [i.e. *Tibetan Sentences*, by Sir Basil Gould, C.M.G., C.I.E., and Hugh Edward Richardson, O.B.E. (O.U.P., 1943)].

The Tibetan spellings given in this article are either those of R. himself or of dPal-ḫbyor P'un-ts'ogs. In the main they do not differ from Classical-Tibetan orthography, but the writers have sometimes indulged in phonetic spellings, especially where the phonetic implications of the traditional spelling are markedly different from the phonetic form heard from the recording. Some spellings will therefore look unusual, but then making recordings of spoken Tibetan is not one of the more usual Tibetan activities.

[4] Since marker exponents of inter- and intra-verbal junction have already been stated for certain verb forms, ' Verbal Phrases—I ', 146–9, the examples given in this article have been restricted to words analysable into (I) Noun + Particle, (II) Adjective + Particle.

voicelessness + aspiration and voicelessness + non-aspiration, can be utilized, is bound up with Tempo (ft, st).

For ft the relevant co-articulations of plosion may be exponents of inter- and intraverbal junction as follows :—

fast tempo (ft)			Inter.	Intra.
(C-) + plosion	voice		X	X [1]
	voicelessness +	aspiration	X	
		non-aspiration	X	

(Examples recorded : X ; no examples recorded : blank.)

Thus in this prosodic context (ft) *voice* is an exponent of either term ; but *voicelessness*, whether co-articulated with aspiration or non-aspiration, is peculiar to interverbal junction, and is thus a marker exponent of interverbal junction, e.g. :—

(5a) Voicelessness (+ plosion) **p/ph/k/kh/t/th/c/ch/tɕ/tɕh/ts/ tsh/tɹ/tʂ**, e.g.

	fast tempo (ft)		
p	**pɛʣə**	(*dpe*-c'a)	**'khabɑ: 'jø:**
	cf. **tɕhabi** [2]	(p'yag-*dpe*)	(ga-bar yod)
ph	**'phɑ:le:**	(*bag*-leb)	**'khabɑ: 'ɕɑ:bɑ**
	cf. **'ɕe:ba**	(bżes-*bag*)	(ga-bar bżag-pa)
t	**ta**	(*rta*)	**tʂi:ɕɔ:**
	cf. **'ɕøndə**	(bżon-*rta*)	(h̲k'rid-sòg)
th	**'thɛp**	(*dep*)	**che:ɕɔ:**
	cf. **tɕhadip**	(p'yag-*dep*)	(k'yer-sòg)
c	**cɛ:dʐə**	(*skad*-c'a)	**'tʂi:gidu:** (dris-kyi-h̲dug)
	cf. **suŋge:**	(gsuṅ-*skad*)	**'jagu 'du:** (yag-po h̲dug)
ch	**chi**	(*k'yi*)	**'di sy: 'ɹɛ:**
	cf. **'simgi**	(gzim-*k'yi*)	(h̲di suh̲i red)
tɕ	**tɕu**	(*bcu*)	**thambə 'jɔ:əɹe**
	cf. **sumdʐu**	(gsum-*bcu*)	(t'am-pa yod-pa-red)
tɕh	**tɕhɑ̃:**	(*c'aṅ*)	**che:ɕɔ:**
	cf. **tɕhø:dʐɑ̃:**	(mc'od-*c'aṅ*)	(k'yer-sòg)

[1] When co-articulated with voice friction has been recorded as in free variation with plosion in Intraverbal Junction : **g/ɣ, b/β**.

[2] An advantage of stating a prosodic system of junction is that it enables one to relate the various phonetic forms of a given constituent to a single invariable phonological formula ; differences that there may be between the phonetic forms are stated as exponents of (I) Interverbal, or (II) Intraverbal, junction. There is thus no need to give one phonetic form precedence over the others, or dignify it with the title of ' norm '. Cf. A. E. Sharp, ' A Tonal Analysis . . .', 169. Similar advantages are to be gained from a prosodic statement of tempo. From the examples in which a given constituent has been recorded in both Junction contexts it will be seen that Tibetan orthographic usage is not unduly phonetic : the syllable in question in **pɛʣə** and **tɕhabi** (dpe-c'a, p'yag-dpe) is given the same symbolization in both (dpe) despite considerable phonetic differences.

ts	**tsɛmu**	(*rtsed*-mo)	**tse:bəɹe** (rtsed-pa-red)
	cf. **kɔdzi**	(sku-*rtsed*)	**tsɛbə naŋaɹe** (rtse-ba gnaṅ-ba-red)
tsh	**tshõ:**	(*ts'oṅ*)	**ˈkhandɹɛ: ˈjina** (ga-ḫdras yin-na)
	cf. **kudzũ:**	(sku-*ts'oṅ*)	**ˈkhandɹɛ: ˈjimbə naŋa** (ga-ḫdras yin-pa gnaṅ-ṅa)
tɹ	**tɹa**	(*skra*)	**ˈɕaɹaɹe** (bžar-ba-red)
	cf. **ʔudɹə**	(dbu-*skra*)	**ˈɕɑ: naŋaɹe** (bžar gnaṅ-ba-red)
tɻ	**ˈtɻabə**	(*grwa*-pa)	**ˈtɕhi: le:ɕa** (cig bslebs-šag)
	cf. **labdɹɑ:**	(slab-*dgra*-la) [1]	**ˈdɹugyjĩ:** (ḫgro-gi-yin)

In the st prosodic context, on the other hand, voicelessness may not be stated as a marker exponent of interverbal junction, for the relations of the relevant co-articulations of plosion to inter- and intra-verbal junction are rather different :—

			Inter.	Intra.
(C-) : Plosion +	voice		X	X
	voicelessness +	aspiration	X	
		non-aspiration	X	X [2]

In the st context it is only if accompanied by aspiration that voicelessness marks an interverbaljunction context. Here, therefore, it is aspiration that can be distinguished from the other two phonetic features, as being a marker exponent of interverbal junction, while plosion unaccompanied by aspiration is common to both junction contexts. The feature voicelessness (+ plosion) stated at § 5a above as a marker exponent in ft is not valid in st, and should have substituted for it :—

(5b) Aspiration (+ plosion) **ph/th/kh/ch/tɕh/tsh/tɻ**, e.g.
slow tempo (st)

ph	**phɛ̃:**	(*p'an*)	**tho:gyɹe:** (t'ogs-kyi-red)
	cf. **thupɛ̃:**	(t'ugs-*p'an*)	**sugyɹe:** (gso-gi-red)
th	**thaŋgə**	(*t'aṅ*-ka)	**ˈkadzɛ: ˈjø:na** (ga-ts'od yod-na)
	cf. **ˈɕɛ:tɑ̃:**	(žal-*t'aṅ*)	**ˈkadzɛ: ˈjø:bə naŋa** (ga-ts'od yod-pa gnaṅ-ṅa)
ch	**chi**	(*k'yi*)	**ˈdi sy: ˈɹɛ:**
	cf. **ˈsimci**	(gzim-*k'yi*)	(ḫdi suḫi red)
tɕh	**tɕhɑ̃:**	(*c'aṅ*)	**che:ɕɔ:**
	cf. **tɕhø:tɕɑ̃:**	(mc'od-*c'aṅ*)	(k'yer-šog)

[1] See p. 136, note 3.

[2] When co-articulated with voicelessness + non-aspiration plosion in the Intraverbal-Junction context is sometimes distinguishable from plosion in the Interverbal-Junction context : it is accompanied by a lax articulation, and might be symbolized in greater detail as **g̊, d̥, ḇ**.

tsh	**tshõ:**	(*ts'oṅ*)	**ˈkhandɪɛ: ˈjina** (ga-ḫdras yin-na)
	cf. **kutsũ:**	(sku-*tso'ṅ*)	**ˈkhandɪɛ: ˈjimbə naŋa** (ga-ḫdras yin-pa gnaṅ-ṅa)
tɻ̊	**tɻ̊ɑ:**	(*k'rag*)	**thyŋgydu:** (ḫt'on-gyi-ḫdug)
	cf. **kutɪa**	(sku-*k'rag*)	**thømbə nʌŋgidu:** (ḫt'on-pa gnaṅ-gi-ḫdug)

The five phonetic features given above (1–5) complete the list of exponents of interverbal junction that can also be utilized as criteria for delimiting words with regard to C- ; they all act as markers of word-beginning.

B. *Intraverbal*

The marker exponents of intraverbal junction that may be stated for C- comprise :—

(1) voice (+ apical affrication) **dz**, e.g.

dz	**ˈphʌdzi**	(ba-*rdzi*)	**ˈɹɛ:** (red)
	cf. **ˈziu**	(*rdzi*-bo)	
dz	**ˈdʐʌdzi:**	(ljags-*rtsis*)	**nʌŋgidu:** (gnaṅ-gi-ḫdug)
	cf. **tsi:byŋgi**	(*rtsis*-dpon-gyi)	**tɕhalɛ: nʌŋgidu:** (p'yag-las gnaṅ-gi-ḫdug).

When co-articulated with apical affrication (**dz**) voice is thus an exception, the sole exception, to the statement made above that voice cannot be utilized for delimiting words. Except in an artificially slow style no word in LT begins with a voiced apical affricate (**dz**), though this type of sound has been recorded medially, in certain types of junction, as exemplified above.

The remaining marker exponents of intraverbal junction are confined to those syllables in which the -V(-) term is characterized by both frontness and spreading. In such syllables velarity, and to some extent dental nasality, is excluded from interverbal, but has been regularly recorded in intraverbal, junction, whence it is possible to add to the list of marker exponents of intraverbal junction the following :—

(2) velarity **gi(:)/ge:/gɛ(:)/ŋi(:)/ŋɛ(:)**

(3) dentality (+ nasality) **ni**

Examples as follows :—

(2)	**ŋe:**		**ˈduŋe: ˈtɕhɛ:bəjĩ:**	(sdug-*bsṅal* byas-pa-yin)
	ɲɛ:		**ˈdʐɔ:dʐuŋɛ:**	(ḫbyor-byuṅ-*ṅas*)
	gi		**sʏbgi ˈdɛndrĩ: ˈɕo: nũ:sũ**	(sab-*kyis* gdan-ḫdren żu-ba gnaṅ-soṅ)
	ge:		**suŋge: ˈjagu ˈdu:**	(gsuṅ-*skad* yag-po ḫdug)
		cf.	**cɛ:dʐə ˈtɻ̊i:gidu:**	(*skad*-c'a dris-kyi-ḫdug)
(3)	**ni**		**ʔʌni ˈgɔ:mbələ tɕhimbəjĩ**	(a-*ni* dgon-pa-la p'yin-pa-yin)
			ʔʌni ˈthu:mədʐũ	(a-*ni* thug-ma-byuṅ)

II. Characterizing -C

In addition to the marker exponents of inter- and intra-verbal junction characterizing C- there are also a number characterizing -C that may be used for delimiting words :—

A. *Interverbal*

Absence of oral closure (+ nasality) **ĩ:/ɛ̃:/ɑ̃:/õ:/ũ:/ø̃:/ỹ:**

Nasality without oral closure is an exponent of certain -C terms in interverbal junction, but not, except when the junction-initial C- is characterized by a lateral, an apical-fricative (ɹ) or a semivowel articulation (e.g. **ˈmĩ:lə**, miṅ-la ; **tɕhã:ɹĩ:**, c'aṅ-rin ; **ˈtʂũ:ji: ˈla:**, druṅ-yig lags) in intraverbal junction. Apart from these and similar examples therefore nasality without oral closure may be considered a marker exponent of interverbal junction, e.g.

ɑ̃	**chɛɹɑ̃: ˈkhanɛ: ˈjimbɑ:**	(k'yed-*raṅ* ga-nas yin-pa)
	cf. **chɛɹaŋgi tɕhadip ˈkhabɑ:**	(k'yed-*raṅ*-gi p'yag-deb ga-bar bžag
	ˈɕɑ: naŋajina	gnaṅ-ṅa-yin-na)
ĩ:	**ˈla ˈjĩ:**	(lags *yin*)
	cf. **ˈla ˈjimbədɹa**	(lags *yin*-pa-ḫdra)
ỹ:	**thyndỹ: ˈɹe:**	(*t'uṅ-t'uṅ* red)

B. *Intraverbal*

(1) Oral closure (+ nasality) (except + labiality) **ŋ/n/ɲ**, e.g.

ŋ	**mɛŋgi ɕe:dʌm ˈtɕhi: ˈgɔ:jø:**	(*sman*-gyi ṡel-dam cig dgos-yod)
	cf. **mɛ̃: ˈtɕhi: ˈgɔ:jø:**	(*sman* cig dgos-yod)
n	**ˈjøndɛ̃:** (*yon*-tan)	**tɕhimbu ˈɹe:**
	cf. **kɔjø:** (sku-*yon*)	(c'en-po red)
ɲ	**tɕhyɲdʑỹ: ˈɹe:**	(*c'uṅ-c'uṅ* red)

(2) Velarity **k** (st) ; **g/ɣ** (ft), e.g.

g	**ˈɹigbə ˈjagu ˈdu:**	(*rig*-pa yag-po ḫdug)
	cf. **thuɹi: nɔbu ˈdu:**	(t'ugs-*rig* rno-po ḫdug)
ɣ/k	(ft) **ˈluɣɛə** / (st) **ˈlukɛə**	**ˈkhõ: ˈkhadzɛ: ˈɹɛ:** (*lug*-ṡa goṅ ga-ts'od red)
	cf. **ˈlu: ˈmaŋgu ʔajũ:**	(*lug* maṅ-po a-yoṅ)

(3) Voice + labial plosion **b**
Labial friction **β** [1], e.g.

b	**labdʑũ: ˈɹimbə ˈkhaɹi**	(. . . *slab*-sbyoṅs rim-pa ga-re
	ˈkhaɹi ˈtɕhigijø:	ga-re byed-kyi-yod)
	cf. **ʔʌni kʌlɤp ˈɹɤbu ˈɕy:**	(a-ni dkaḫ-*slob* ra-po žus)
β	**ˈjɤβjum ˈɕu:jø:βənɔ:**	(*yab*-yum bžugs-yod-pa-no)
	cf. **ˈjɤp ˈɕu:mindu:**	(*yab* bžugs-mi-ḫdug)

[1] Labial friction has been recorded in interverbal junction, but only when final in the sentence, e.g. **khɔɹũ:lə ˈduksə ˈlɤβ** (k'o-raṅ-la ḫdug-se lab), and is probably best considered as a sentence-final feature.

(4) Apical friction ɹ [1], e.g.

ɹ { ˈɟagaɹə ˈtɕhi: le:ɕa (rgya-*gar*-ba cig bslebs-sàg)
cf. ˈɟagɑ: ˈsɛnə ˈlɔɣsø: (rgya-*gar* zer-na lugs-srol ga-h̤dras
ˈkhandɹɛ: ˈɹɛ: red).

The exponents used as criteria for setting up the prosodic categories inter- and intra-verbal junction have not thus far required any knowledge of the constituents of words (the term constituent must remain undefined); they comprise a list of general-phonetic categories, the identification of an instance of any one of which in the speech-stream provides grounds for delimiting words. These exponents could be used for the delimiting of words by anyone with a knowledge of the relevant types of sound irrespective of the constituents of the words concerned. Thus if voiceless plosion should be perceived in listening to an utterance, that feature can be claimed, in ft, as marking the beginning of a word, and similarly with the other marker exponents. The examples given above for these various exponents have, however, gone a step further; they have been so chosen that it might be possible to illustrate from them some of the phonetic forms ascribable to a constituent in different junction contexts, e.g. *dpe*-c'a (**pɛdʑə**), cf. p'yag-*dpe* (**tɸhabi**) (see p. 137, note 2). Where, however, the constituent and its various contextually distributed phonetic forms are known, it is possible to add to the list of marker exponents characterizing C- a number of others. These further exponents comprise nasal and occlusive articulations that in fact characterize the initial consonant (C-), but would not easily be distinguished from features characterizing the final consonant (-C) by those unfamiliar with the constituents concerned :—

(5) Inter : Non-nasality **ph/b/th/d/kh/g/ʃ/tɸ/dʑ/tsh/tʂ/dɹ/ɲ**
Intra : Nasality **mb/nd/ŋg/ɲʃ/ɲdʑ/nz/ndɹ/md/mdʑ/mz/mɲ/ŋɲ**

(6) Inter : Non-occlusion **c/tɕ/tɸh/tɹ/l/s/ɸ**
Intra : Occlusion **bʃ/bdʑ(ptɸ)/bdɹ(ptɹ)/bl/bs(ps)/bɸ(pɸ)** [2], e.g.

(5)

Inter. **d** { ˈmɛ ˈbɑ:gidu: (*me* h̤bar-gyi-h̤dug)
ˈdabȳ: kuɛo:gi ˈɹe: (*mdaḥ*-dpon sku-gżogs-kyi red)
Intra. **nd** ˈmɛndə che:ɕo: (*me-mdaḥ* k'yer-s̀og)
Inter. **dɹ** { ˈdɹøɲe: tɸhimɔ: ˈɕy:sũ (*mgron*-gñer c'en-mo-la żus-soṅ)
ku siɹajimbədɹa (*sku* bsil-ra-yin-pa-h̤dra)
Intra. **ndɹ** kundɹȳ: ˈtɕhi: phe:ɕa (*sku-mgron* cig p'ebs-s̀ag)
Inter. **g** { ˈgɔ ˈnʌgidu: (*mgo* na-gi-h̤dug)
ˈɹɑ: (*ra*)
Intra. **ŋg** ˈɹaŋgu tagba (*ra-mgo* btags-pa)

[1] Velar and dental nasality, voiceless velar occlusion, and apical friction (**ɹ**), may be held to mark the absence of word boundaries in some styles of utterance but not in others: in the 'reading' and 'spelling' styles these four types of articulation may be final in the word, and cannot therefore be used as criteria for the delimitation of words in these two styles, whereas they can be used as criteria for the style considered here ('speaking style').

[2] The exponents appropriate to st are symbolized in brackets.

Inter. **b**	**ˈbum ˈjoːəɹe**	(*h̲bum* yod-pa-red)
	ku ɲeːbu ˈmədʑuŋa	(*sku* mñel-po ma-byuṅ-ña)
Intra. **mb**	**kumbumlə ˈdɹugyɹeː**	(*sku-h̲bum-la* h̲gro-gi-red)

(6)

Inter. **tɕ**	**tɕu thambə ˈjoːəɹe**	(*bcu* t'am-pa yod-pa-red)
	ŋa ˈjoːəɹe	(*lṅa* yod-pa-red)
Intra. **bdʑ**	**ŋʌbdʑu thambə ˈjoːəɹe**	(*lṅa-bcu* t'am-pa yod-pa-red)
Inter. **tɕh**	**ˈtɕha ˈdi ˈkhaɹi ˈɹeː**	(*bya* h̲di ga-re red)
	tɕhu toːdzə ˈgoːjø	(*c'u* tog-tsam dgos-yod)
Intra. **bdʑ**	**tɕhubdʑə ˈɹeː**	(*c'u-bya* red)

In addition to the marker exponents of intraverbal and interverbal junction, which characterize syllable-initial and syllable-final consonants (C-, -C), a further phonetic feature, pause, is a potential marker of word limits :—

ˈjɑ̃ː ˈdyndɹa ˈɹɛɹeː ˈnɑ̃ːləjɑ̃ː thɛ̃ː tɕigi — ˈmaɹeː — thɛ̃ː ɲiː — ˈgiɹiːsi phiɹĩːsi phidɹa ˈseɲɛ̃ː ˈtɕhiː ˈduga — khɔŋgi phiːge ˈphyːjiː ˈdɹømbyː ˈɹʁbu ˈɕyː

(yaṅ bdun-p'rag re-re h̲i naṅ-la-yaṅ t'eṅ gcig-gi — ma-red — t'eṅ gñis — ghi-ri-si p'i-rin-si p'i-ḍar [Greece, Prince Peter] zer-ñan gcig h̲dug-kaṅ — k'oṅ-gi p'a-gas bod-yig sgron-h̲bul ra-po žus.)

The theory that sets up the word and applies the tonal system to it receives further support from the feature sometimes described as vowel harmony,[1] and from the tonal system itself: the exponents of the terms of these two prosodic systems characterize syllables within the limits of the word but not beyond those limits, and may most profitably be stated with reference to the word.[2]

Grammatical Categories : Definition

The main categories needed for an adequate description of the word unit at the grammatical level of analysis comprise the following five : Verb, Noun, Adjective, Postposition, Particle. Of these categories the Verb and the Verb Particle have already been defined, on formal grounds (op. cit., pp. 134–140) ; it remains to define the main categories required for an account of tone in the Nominal Phrase : Noun, Adjective, Postposition, Particle (of the following sub-categories : Noun, Adjective, Nominal-Phrase).

This article does not, however, attempt to deal fully with every grammatical type of word in the Nominal Phrase, but takes the words analysable in terms of the categories Noun, Noun Particle, and Nominal-Phrase Particle as examples to which the other grammatical types of word conform with appropriate differences of phonetic exponent. The only grammatical categories to be defined

[1] op. cit., pp. 323–8 ; 340–2. ' Prosodic System of Closure.'

[2] A ' word ' unit may be delimited in spoken Burmese by the same technique of analysis as has been applied here to Lhasa Tibetan. Indeed, the similarity even extends to particular marker exponents of inter- and intra-verbal junction.

here are therefore those of (I) Noun, (II) Noun Particle, and (III) Nominal-Phrase Particle.

I. Noun

The criteria for defining the noun category are three in number :—

A. *Number of Syllables*

Like the members of all other grammatical categories, nouns may be monosyllabic, but unlike them, may also be (1) disyllabic, and (2) trisyllabic. The only recorded example of a disyllable that is not a noun, apart from reduplicative adjectives, is the Postposition p'a-gi. Examples as follows :—

(1) *sku-žog p'yags-p'ebs* gnaṅ-byuṅ
sku-žog ga-dus c'ibs-bsgyur gnaṅ-ṅa-yin-na

(2) *rgya-gar-ba* cig-gi red
lhas-sa-ba min-na, ḫgrig-gi-ma-red

B. *Colligation*

The Noun may be colligated (1) within word limits, with (*a*) the Noun-Particle, and (*b*) the Nominal-Phrase-Particle, categories; and (2) not within word limits, with the Postposition category, e.g. :—

(1) (*a*) ma-kaḫi yar zla-ba *bcu-rtse* cig ma-kaḫi lon-don-la [London] bsdad-pa-yin :
Noun + Noun Particle (rtse).
nor-bu gliṅ-kaḫi p'yag-las *yun riṅ-ḫt'uṅ* ga-gaḫa-tsam gnaṅ-ṅa-yin-na :
Noun + Noun Particle (zero).

(*b*) *deḫi sṅas-la-yaṅ lhas-sa-raṅ-la* bžugs bžugs-pa-yin-na :
Noun + Nominal-Phrase Particle (ḫi, la, yaṅ, raṅ).
de min-paḫi-yaṅ — lhas-sa *k'ul-la* — *p'yag-las* . . . :
Noun + Nominal-Phrase Particle (ḫi, yaṅ, la, zero).

(2) ṅas ḫdiḫi sṅas-ma mt'ar-p'yin sba-bu lags-kyi *tshag-par de* lhas-sa k'ul-la mt'oṅ-byuṅ :
Noun + Particle (ts'ag-par) + Postposition (de).
ḫdas yar me-loṅ par-k'aṅ *zer-ñan gcig* ḫdug :
Noun + Particle (zer-ñan) + Postposition (gcig).

C. *Order of Categories*

(1) *Within the Word*

Within the word the Noun category precedes (*a*) the Noun Particle, or (*b*) the Nominal-Phrase Particle, e.g. :

(*a*) da ñi-ma re-la de rim-pa *ga-gaḫa-tsam* grub-kyi-yod-na, . . . :
Noun (ga-gaḫa) + Noun Particle (tsam).

(*b*) *ṅas deḫi sṅas-la ts'ag-par dbyin-jiḫi skor-gyi ḫdi-ḫdras* ma-ses *bod-paḫi ḫdi* mt'oṅ-ma-myoṅ :

Noun + Nom.-Phrase Part. ;		Noun + Nom.-Phrase Part.	
ṅa	-s	de	ḫi
ts'ag-par	zero	dbyin-ji	ḫi
skor	gyi	ḫdi-ḫdra	-s [1]
bod-pa	ḫi	ḫdi	zero

(2) *Within the Sentence*

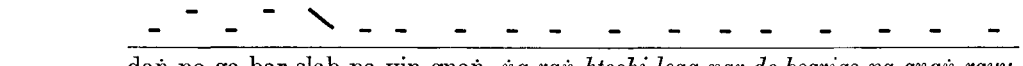
In non-final clauses, and in final clauses in which there is a Verbal Phrase,[2] the Nominal Phrase regularly precedes the Verbal, e.g. :

lcags-par de-ḫts'o gaṅ min-mdzad gam gtsaṅ-ma yin-tsaṅ, *sṅas-maḫi rḍo-par-las że-drag gcig-gi gam gtsaṅ-ṅa* ḫdug-ga.

da-lta k'o-ḫts'os gnas-don ḫdi rtogs ma gnaṅ-tsaṅ, *ḫdiḫi rkyen-gyi k'rigs-te* zer-gyi-ḫdug.

In those instances in which a Nominal Phrase is final in a verbal sentence, as it may be in parenthesis, it is characterized by a low level intonation-pattern, e.g. :

da ñi-ma re-la de rim-pa ga-ga-tsam grub-kyi-yod-na, *de ṅa-raṅ-ḫts'os.*



daṅ-po ga-bar slab-pa-yin-gnaṅ, *ṅa-raṅ-ḫtsoḫi lcag-par de bsgrigs-pa gnaṅ-rgyu.*

(3) *In the Nominal Phrase.*

The categories Noun and Noun Particle precede Adjective, Adjective-Particle, Postposition, and Nominal-Phrase-Particle categories in the Nominal Phrase, e.g. :

da *mt'un-rkyen ra-po cig* gżuṅ-raṅ-nas tog-tsi cig gnaṅ-gi-yod-pas, bzo-lta ra-po :

Noun (mt'un-rkyen) + Particle (zero) ; Adjective (ra) + Particle (po) ; Postposition (cig) + Nominal-Phrase Particle (zero).

ṅa-ḫts'oḫi bsam-las rim-pas p'i-nas gcig-gi *mt'un-rkyen ra-po* gnaṅ :

Noun (mt'un-rkyen) + Particle (zero) ; Adjective (ra) + Particle (po) + Noun-Phrase Particle (zero).

[1] Some of these particles have differing phonetic forms, according as the structure of the syllable with which they are in junction is CV or CVC. This phonetic difference is often, and over-phonetically, reflected in the spelling :—

	CVC Junction	CV Junction	
I.	kyi/gyi/gi	ḫi,	e.g. de*ḫi*, dbyin-ji*ḫi*, skor-*gyi*, bod-pa*ḫi*.
II.	kyis/gyis/gis	-s,	e.g. ṅa*s*, ḫdi-ḫdra*s*, cf. sba-bu-lags-*kyis*.
III.	la	la/-r/ḫi,	e.g. sṅas-*la* ; cf. luṅ-par, sṅas-ma*ḫi*.
IV.	yaṅ	yaṅ/ḫi/-s,	e.g. da-*yaṅ*, su*ḫi*, bsam-la*s*.

[2] See ' Verbal Phrases in Spoken Lhasa Tibetan ', p. 134.

[3] Two distinctive pitch levels are recognized. The symbols used are as follows :—

I. High level ¯ ; II. Low level _ ; III. Fall ╲ ; IV. Rise-fall ∧ ; V. Rise ╱.

de *slad-p'yin cig* bod-la yar yaṅ p'a-ges tog rtse cig yag-po yoṅ-gi-red-pa :

Noun (slad-p'yin) + Particle (zero) ; Postposition (cig) + Nominal-Phrase Particle (zero).

par-k' aṅ yod-pas, zer-ñan ra-po :

Noun (par-k'aṅ) + Nominal-Phrase Particle (zero).

II. Noun Particle

(1) All Noun Particles are monosyllabic.

(2) The Noun Particle category is invariably colligated with the Noun, and only with the Noun, category within the limits of the word.

(3) The order of categories within the word is : (*a*) Noun, (*b*) Noun Particle.

Only two Noun Particles have been recorded :—

tsam/tse/tsi, zero, e.g.

de-nas ka-lon sbug-la ts'ur p'ebs-ni lo ga-ts'od-*rtse* t'ad-kyi-yod-na :

Noun (ga-ts'od) + Noun Particle (rtse).

k'oṅ de-ni deḫi sṅas-la *sa-skya* k'ul-laḫi cig *c'ibs-bsgyur* gnaṅ :

Noun + Particle (zero).

III. Nominal-Phrase Particle

(1) All Nominal-Phrase Particles are monosyllabic.

(2) The Nominal-Phrase-Particle category is colligated with the final category of the Nominal Phrase, whether (*a*) Noun, or Noun Particle (tsam), (*b*) Adjective Particle, (*c*) Postposition.

(3) This category is final in both word and Nominal Phrase.

The following eleven Nominal-Phrase Particles have been recorded :—

gi/gyi/kyi/ḫi,[1] gis/gyis/kyis/-s,[1] nas/ni, la/-r/ḫi,[1] du/ru/su,[1] ḫts'o, daṅ, las, yaṅ/ḫi/-s,[1] raṅ, zero,[2] e.g. *ḫdi da-riṅ ḫdiḫi* p'yag-dpe *ḫdi ṅa-naṅ-ḫts'oḫi debs-kyi lugs-srol* yin-naḫi *ṅa-raṅ-ḫts'oḫi bod-paḫi p'yag-dpe-raṅ* yin-na.

Noun + Nom.-Phrase Part. ;		Noun + Nom.-Phrase Part.	
ḫdi	zero	da-riṅ	zero
ḫdi	ḫi	ḫdi	zero
ṅa-raṅ	ḫts'o + ḫi	debs	kyi
lugs-srol	zero	ṅa-raṅ	ḫts'o + ḫi
bod-pa	ḫi	p'yag-dpe	raṅ + zero

yin-naḫi k'a-seṅ ṅa-raṅ-*ḫts'o* ya-*gaḫi* p'o-braṅ-*la* yar de-ni lo-sar-*la* mdzad-c'en skabs-*su* ya-gaḫi bcar byas, deḫi skabs-*su-yaṅ* ṅa-raṅ-*ḫts'os* gsuṅ-rnam gcig gnaṅ-ṅa-yin-tsaṅ, de zè-drag-*gi* ḫbad . . . gsal-po . . .

[1] See p. 144, note 1.

[2] The Particle ni cannot be included in this list : although in some instances the criteria for defining the Nominal-Phrase Particle are applicable to ni, e.g. deḫi rkyen-gyi *de-ni* na-raṅ-ḫts'o bod-yig de-ḫdras-se bris byas . . . : Noun (de) + Particle (ni), other examples have been recorded in which they are not, e.g. med *zer-na-ni* t'on-yod-red-pa : Verb (zer) + Verb Particle (na).

(particles other than zero are in italics; zero, which could not be indicated in this way, would be stated for the following words: k'a-seṅ, mdzad-c'en, gcig, de).

When the Nominal Phrase is analysed in terms of the grammatical categories enumerated above, any given word, as delimited above (pp. 134–42) can be regarded as comprising any one of the three non-Particle categories (Noun, Adjective, Postposition), represented by a single example, colligated with the Particle category, represented by one or more examples, in the order (I) non-Particle category, (II) Particle category :—

$$\left.\begin{matrix}\text{Noun}\\ \text{Adjective}\\ \text{Postposition}\end{matrix}\right\} + \text{Particle}$$

Thus in every word, at the grammatical level of analysis, the Particle category is represented by at least one example, from one of the three sub-categories (Noun Particle, Adjective Particle, Nominal-Phrase Particle), but each one of these sub-categories includes zero as a member. The tonal analysis stated below is, however, valid for all three grammatical types of word (Noun + Particle, Adjective + Particle, Postposition + Particle), with appropriate differences of exponent, with the result that it is possible to take any one grammatical type as an example. Words analysable into Noun + Particle have been chosen to illustrate the kind of tonal statement advanced in this article.

Tonal System and Word

A two-term Tonal system (Tone One, Tone Two) may be stated for LT, and may be associated with the word. A given word may therefore be assigned to one or other prosodic category and termed a Tone-One Word (1W) or a Tone-Two Word (2W), according as the exponents of Tone One or of Tone Two are statable for it.

The exponents that have been used as criteria for setting up the Tonal system are of four orders :—

A. features of pitch.
B. features of duration of vowel.
C. word-initial features.
D. features of voice-quality.

Although the two-term Tonal System may be applied to the word irrespective of the way in which a given word may be analysed grammatically, it is not possible to make a single comprehensive statement of the exponents of the two terms. Not only do differences in grammatical category have to be taken into account, but separate statements of exponents are required by differences in the number and structure of syllables. This article is restricted to a study of words grammatically analysable in terms of the categories disyllabic Noun and Particle, but the type of word studied here will be broadly representative of other types.

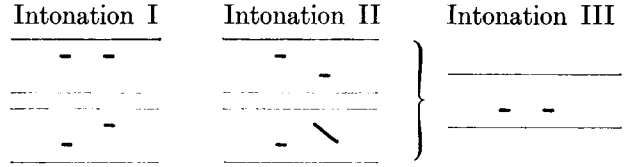
In words of the grammatical type disyllabic Noun + Nominal-Phrase Particle the Particle category is represented (I) by the Particle zero, (II) by the Particle la/-r/h̲i.[1]

I. Disyllabic Noun + Nominal-Phrase Particle (Zero)

The exponents of Tone One and Tone Two with reference to this type of word comprise :—

A. *Pitch Exponents*

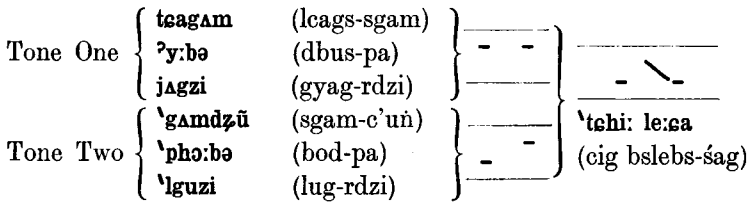
The three [2] intonation-patterns of relevant Tone One and Tone Two words are illustrated in the following diagram :—



It will be seen that a relevant Tone One Word does not have one single intonation pattern, but may have any one of three different intonation patterns, as appropriate to a particular intonation context, intonation I, II, or III. A relevant Tone Two Word similarly has three possible patterns, and it is of interest that in one intonation context (intonation III), the exponents of Tone One and Tone Two are identical, and cannot therefore be used as criteria for setting up the Tonal system.[3]

In intonation I, Tone One words are distinguished from Tone Two words by the fact that the pitch of a Tone Two word is higher at the end of the word than at the beginning, while the pitch of the Tone One word is perceived as level, e.g. :—

(1) Int. I



In intonation II both prosodic types of word are characterized by a fall in pitch, but in the case of the Tone Two Word the fall is preceded by a rise, and in the case of the Tone One Word it is not. The intonation-patterns given under intonation II are appropriate to a one-word sentence, e.g. :—

[1] See p. 144, note 1.

[2] The intonation-patterns given are in every case exhaustive for the material studied.

[3] In the Intonation-III context therefore a given word cannot be identified as a Tone One or a Tone Two word from exponents of the first order, pitch, but it may well be possible to identify it prosodically from other criteria, i.e. from the third order of exponent, word-initial features (word-initial voice + plosion, voicelessness + non-aspiration + plosion, etc.).

(2) Int. II

Tone One	**tɕagʌm**	(lcags-sgam)	¯ ¯[1]
	ʔy:bə	(dbus-pa)	¯ ¯
	jʌgzi	(gYag-rdzi)	¯ ¯
Tone Two	**ˈgʌmdʑũ**	(sgam-c'uṅ)	¯ ¯
	ˈpho:bʊ:	(bod-pa)	¯ \
	ˈlugzi:	(lug-rdzi)	¯ ¯

Finally, as an example of Tone One and Tone Two words in intonation III a sentence was recorded in which k'a-saṅ (1W) and de-riṅ (2W) are heard first with the intonation-pattern appropriate to intonation I, at the beginning of the sentence; and at the end of the sentence, following the verb, with the patterns appropriate to intonation III :—

(3) Int. III

khasũ: (k'a-saṅ) (1W) ; **ˈthiɹĩ:** (de-riṅ) (2W)

¯ ¯ ¯ ¯ ¯ ¯ ¯ ¯ ¯ ¯ ¯ ¯ ¯ ¯ \ ¯
¯ ¯ ¯ ¯ ¯ ¯

ˈtha	**ˈthiɹĩ:**	**khasũ:**	**ˈbʌbu**	**ˈlɑ:**	**tɕhalɛ:**	**ŋagũ:**	**ˈkhaɹi**	**nʌŋgijə:nə**
(da	*de-riṅ*	*k'a-saṅ*	sba-bu	lags	p'yag-las	sṅa-dgoṅ	ga-re	gnaṅ-gi-yod-na,

¯ ¯ ¯ ¯

ˈthiɹĩ: khasũ:
de-riṅ k'a-saṅ)

It should perhaps be stressed that a given Tone One intonation-pattern is not comparable with any of the Tone Two intonation-patterns other than the one appropriate to the same intonation context ; but all three Tone One intonation-patterns are not only comparable but must be compared in order to establish which of the three Tone One intonation-patterns, the intonation I, the intonation II, or the intonation III, is appropriate to a given Tone One word in a given instance ; similar considerations apply to the Tone Two word. It is not the purpose of this article to deal here with the mutual expectancy of the various possible intonation-patterns, and the implications that they have for each other, except for such brief indications as that, for example, the intonation-I patterns imply at least one succeeding word in the sentence ; the intonation-III patterns imply at least one preceding word.[2]

B. *Duration of Vowel*

The second order of exponents of Tone may be stated only with reference to intonation-context II. In this context, where the latter syllable of the noun

[1] By using the intonation-pattern given, I have avoided associating the fall in pitch with either the former or the latter of the two syllables. In practice the fall in pitch has been perceived as associated with the latter syllable when that syllable is of a structure CVC, and with the former syllable when the latter syllable is of a structure CV, e.g. **tɕagʌm** (-CVC) : ¯ \, but **ʔy:bə** (-CV) : \ ¯.

[2] For the sort of statement that would be required for an account of the relevant prosodies of the word (Tone) and the Sentence (Intonation), cf. A. E. Sharp, ' A Tonal Analysis . . .'.

is of a CV structure, the vowel of that syllable is characterized by a greater degree of duration in a Tone Two word than in a Tone One word, and by correlated differences in quality. The difference in exponent may be illustrated from a comparison of such pairs of words as the following :—

yak-herd	(gYag-*rdzi*) (1W)	**jʌgzɪ**
sheep-herd	(lug-*rdzi*) (2W)	**ˈlɷgzi:**
Man of U Province	(dbus-p*a*) (1W)	**ʔy:bə**
Man of Bhutan, Bhutanese	(h̲brug-pa) (2W)	**ˈdɪɷgbɑ:**

In the Tone Two word, lug-rdzi, the vowel of the latter syllable is characterized by a greater degree of duration and by a greater degree of closeness (**i:**) than is phonologically the same vowel in the Tone One word (**ɪ**). The other pair of examples displays comparable phonetic differences (**ə** and **ɑ:**) for a common vowel term.

C. *Word-initial Features*

In much the same way as it was found possible above to treat the exponents of inter- and intra-verbal junction, characterizing the initial and final consonants of the syllable (C-, -C), into homophonous and non-homophonous according as they might or might not be used as criteria for delimiting the word, so it is also possible to consider those phonetic features which characterize the initial consonant of the word (word-initial C-) as (1) providing, or (2) not providing, criteria for setting up the Tonal system.

(1) *Providing Criteria for setting up the Tonal System*

The exponents to be considered here, and especially two of the three co-articulations of plosion, i.e. voice, and voicelessness + non-aspiration, may be stated as criteria for establishing (*a*) Tone One, (*b*) Tone Two.

(*a*) Tone One

The relevant criteria comprise :—

(i) Voicelessness + non-aspiration (+ plosion) **p/t/k/c/tɕ/ts/tɪ**

(ii) Glottality (+ plosion/friction) **ʔ/h**

(i)	**p**	**paɪdʑɛ:**	(par-chas)	**ˈkhabɑ: ˈjø:** (ga-bar yod)
	t	**tɛ:gə**	(rta-sga)	
	k	**kubɑ:**	(sku-par)	
	c	**cidu:**	(skyid-sdug)	
	tɕ	**tɕagʌm**	(lcags-sgam)	
	ts	**tsambə**	(rtsam-pa)	
	tr	**traɛɛ:**	(skra-s̀ad)	
(ii)	**ʔ**	**ʔaɪa**	(a-rag)	
	h	**haŋgɔ:**	(lham-k'og)	

Two further criteria may be stated for Tone One. Aspiration when co-articulated with apical affrication (**tsh**), is an exponent of Tone One.

(iii) Aspiration (+ voiceless affrication) **tsh**, e.g. :—

tshaɣɕə (ts'ag-ša) **ˈkhabɑ: ˈjø:** (ga-bar yod).

Finally voicelessness co-articulated with lateral occlusion is also a mark of a Tone One word :—

(iv) Voicelessness + (lateral occlusion) **l̥**, e.g. :—

l̥ɛ:sə khy:lə tɕhalɛ: ˈkhaɹi naŋajina
(lhas-sa k'ul-la p'yag-las ga-re gnaṅ-ṅa-yin-na)

If the word be characterized by any of the above four initial features, it can only be a Tone One word.

(*b*) Tone Two

The word-initial features that contribute to the identifying of a word as Tone Two are the following :—

(i) Voice (+ plosion) **b/d/g/ɟ/dʐ/dɹ**
(ii) Apical friction **r**

Examples as follows :—

(i)
- **b** ˈ**bamɛ̃:** (h̥bam-sman)
- **d** ˈ**di:mi** (lde-mig)
- **g** ˈ**gʌmdʐũ:** (sgam-c'uṅ)
- **ɟ** ˈ**ɟã:ɛi:** (rgyaṅ-śel)
- **dʐ** ˈ**dʐadzə** (ljags-ts'wa)
- **dɹ** ˈ**dɹamɲɛ̃:** (sgra-bsñan)

(ii)
- **r** ˈ**ɹɛ:dʐə** (ras-c'a)

→ ˈ**khabɑ: ˈjø:** (ga-bar yod)

To the above two exponents may be added a third :—

(iii) Voice (+ friction) **z**, e.g. :

koŋø: ˈzasa ˈɞu:dɛ̃: ˈdʐɑ:jø:βənɔ: (sku-ṅos *dza-sag* bžugs-gdan h̥jags-yod-pa-no).

Finally, the word may be characterized by the absence of the features so far stated, plosion, nasality, friction, etc., all of which are at the phonetic level of analysis classified as consonantal, and may thus be perceived phonetically as beginning with a vowel. This feature, the absence of the consonantal articulations referred to, is also a mark of the Tone Two word.

(iv) Absence of plosion, friction, and other consonantal articulations, e.g. :—

ˈɔmə (h̥o-ma) **che:ɕɔ:** (k'yer-šog).

D. *Voice Quality*

The fourth criterion cannot be illustrated from examples taken from the disyllabic-Noun category.

(2) *Not providing Criteria for setting up the Tonal System*

Such features as the following may, however, be initial features in Tone

One and Tone Two words alike; and give no indication of the tonal category of the word :—

(*a*) Nasality **m/n/ŋ/ɲ** (*b*) Voice (+ lateral occlusion) **l**

(*c*) Semivowel articulation **j** (*d*) Voicelessness (+ friction) **s/ɕ**

		Tone One.		*Tone Two.*		
			cf.			
		˗ ˗		˗		
(*a*)	**m**	**meɣɐe:**	(mig-s̀el)	**ˈmɛto:**	(me-tog)	**ˈkhabɑ: ˈjø:** (ga-bar yod)
	n	**nagzə**	(snag-ts'a)	**ˈnamsə**	(na-bzaḥ)	
	ŋ	**ŋy:sɑ̃:**	(dn̂ul-sraṅ)	—	—	
	ɲ	**ɲu:gu**	(smyu-gu)	**ˈɲɔbdʑə**	(ño-c'a)	
(*b*)	**l**	**luɣɕu**	(glog-bz̀u)	**ˈlʌmji:**	(lam-yig)	
(*c*)	**j**	**jʌgdɹu:**	(gYag-p'rug)	**ˈji:gi**	(yi-ge)	
(*d*)	**s**	**sø:dʑə**	(gsol-ja)	**ˈsimɕa**	(gzim-s̀ag)	
	ɕ	**ɕʌŋdʑi**	(s̀aṅs-p'yid)	**ˈɕɛ:sɛ:**	(z̀al-bzas)	

Any of the Tone One or Tone Two words may be collocated with **ˈkhabɑ: ˈjø:** (ga-bar yod).

A prominent exponent of Tone One and Tone Two words in addition to the phonetic features already given is the remaining one of the three co-articulations of plosion :—

(*e*) aspiration (+ plosion) **ph/th/kh/ch/tɕh/tʂ.**

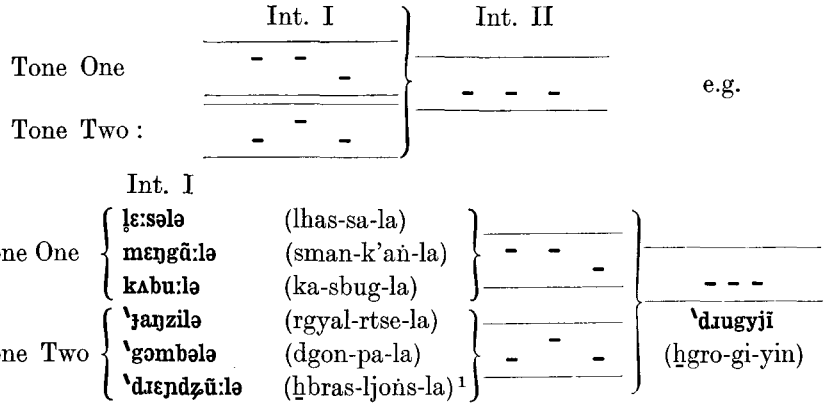
While the other two co-articulations of plosion (*voice*, and *voicelessness* + *non-aspiration*, which can be considered jointly as *non-aspiration*) may be treated as criteria for setting up the Tone system, *aspiration*, with one exception (**tsh**), may not : it is not possible to identify a word as Tone One or Tone Two from the aspiration feature, e.g. :—

		Tone One.		*Tone Two.*		
			cf.			
		˗ ˗		˗		
(*e*)	**ph**	**phɐɣɕə**	(p'ag-s̀a)	**ˈphɑ:le:**	(bag-leb)	**ˈkhabɑ: jø:** (ga-bar yod)
	th	**thaŋgə**	(t'aṅ-ka)	**ˈthu:lo:**	(dug-log)	
	kh	**khapsɛ:**	(k'a-bzas)	**ˈkhʌu**	(gaḥu)	
	ch	**chibdɹu:**	(k'yi-p'rug)			
	tɕh	**tɕhø:dzɑ̃:**	(mc'od-c'aṅ)	**ˈtɕhandɑ̃:**	(ja-ldoṅ)	
	tʂ	**tʂombə**	(k'ron-pa)	**ˈtʂe:gɑ̃:**	(drel-k'aṅ)	

II. Disyllabic Noun + Nominal-Phrase Particle (la/-r/-ḫi)

The statement made for the type of word Disyllabic Noun + Particle (zero) will in the main serve for those other words of that type in which the Particle category is represented by some Nominal-Phrase Particle other than zero, for example the Particle la/-r/-ḫi. There will, of course, be certain differences

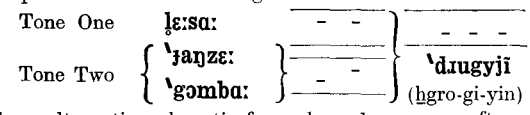
of detail, for example, a difference in the first order of exponent, pitch features, to accommodate an extra syllable. Further, it is not possible to produce criteria in respect of the second order of exponent (vowel duration), as for gYag-rdzi (1W) and lug-rdzi (2W); but the exponents of the third order, word-initial features, may stand for words of this and all types. As an example of minor differences in exponents of the first order the intonation-patterns of relevant words in which the Nominal-Phrase-Particle category is represented by la/-r/h̲i are given :—



It is submitted that it would be legitimate to give the nouns so far cited a prosodic classification suitable for a dictionary entry : the disyllabic noun lcags-sgam, and all the other disyllabic nouns to be cited in Tone One words, always partake of the features of a Tone One word ; they do not alternate between Tone One and Tone Two ; they could therefore be lexically classified as Tone One *nouns* in the sense that they are to be associated with the *Tone One word*, not the *Tone Two*.

The classification need not, of course, stop short at the disyllabic Noun ; it is equally applicable to all Nouns, to Adjectives, to Postpositions, and to Verbs ; but it is not applicable to the Particle category : Nominal-Phrase Particles are not limited to either Tone One or Tone Two words ; examples of the particle la/-r/h̲i are given in the tonal examples in both Tone One and Tone Two words, e.g. lhas-sa-*la* (1W), and rgal-rtse-*la* (2W). The Nouns lhas-sa (Tone One) and rgyal-rtse (Tone Two) do not behave in this way.

[1] As stated above (p. 144, note 1), the exponents of this particle are dependent on the prosodic context, i.e. whether the syllable with which it is in junction is CVC in structure (e.g. sman-k'aṅ, ka-sbug, h̲bras-ljoṅs) or CV (e.g. lhas-sa, rgyal-rtse, dgon-pa). For these latter examples alternative phonetic forms to those given above have been recorded :—



In ft, in fact, these alternative phonetic forms have been more often recorded than those (ɭɛːsələ, etc.) given at (II). The alternative forms are sometimes symbolized in the Tibetan text as lhas-sa-*la*, rgyal-rtse-*la*, etc., and sometimes specifically indicated by the use of such phonetic spellings as lhas-sa*r*/lhas-sa*h̲i*, rgyal-rtse*r*, etc.

There is one respect in which words which are grammatically analysable into monosyllabic Noun + Particle differ from words of the type considered hitherto; for them the fourth order of exponents of Tone (voice quality) is statable. Clear voice may be stated as an exponent of Tone One and breathy voice of Tone Two.

The differences between words grammatically analysable as disyllabic Noun + Particle and those analysable as monosyllabic or trisyllabic Noun + Particle, or for that matter words analysable in terms of the other grammatical categories of the Nominal phrase, are those of detail only; with appropriate differences in exponent, words of all grammatical types may be stated in terms of a two-term Tonal System applicable to the word as a whole no less profitably than the type of word considered in detail above.