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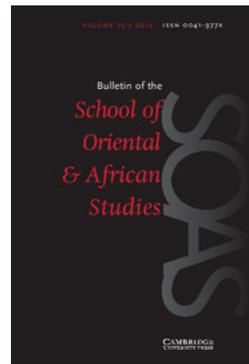
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CONTROVERSY IN THE TONAL ANALYSIS OF TIBETAN¹

By R. K. SPRIGG

I. *Jäschke, 1881: 'high and low tones'*

Tone made its appearance in descriptions of Tibetan pronunciation as early as 1881, when Jäschke introduced the term into an account of the prosodic features of the spoken Tibetan dialects: 'A system of tones has been introduced. . . . I am told by European students of reputation, who have made the Tonic languages of eastern Asia their special department, that only the first principles of what are known as the *high and low Tones*, have made their way into Tibetan. . . . Here, as in the languages of Farther India, generally, which possess an alphabetic system of writing, the Tone is determined by the initial consonant of the word. . . . An inhabitant of Lhasa, for example, finds the distinction between འ and ར, or between ཨ and ཨ, not in the consonant, but in the Tone, pronouncing འ and ཨ with a high note (as my Tibetan authorities were wont to describe it "with a woman's voice", shrill and rapidly), ར and ཨ, on the contrary with a low note, and, as it appeared to me, more breathed and floating' (1881/1934, xiii). Further, in his 'Phonetic table for comparing the different dialects' (pp. xvi–xxi), he has included a tone classification, as either 'high-toned' or 'deep-toned', for the pronunciation of very nearly all of the 242 words listed there, though limiting this classification to three out of the six dialects shown in the table, the Spiti dialect and the Tsang and Ü dialects, which he has grouped together as dialects of the 'Central Provinces'.

Kyelang, where Jäschke lived and worked, is in Lahoul, one of the dialect areas that, together with the neighbouring area of Ladakh, he classified as non-tonal; and he admitted that, for distinguishing tones, he did not consider himself 'sufficiently master of [the speech of the best educated classes in the capital city Lhasa] to risk its application to each individual word' (p. x) of his dictionary; so it says much for his skill as a phonetician that I should find his classification for Ü in his phonetic table to be correct, in the main, for Lhasa Tibetan; there are, however, three mis-classifications on p. xviii, *rjes*, and the first lexical items of the compounds *mya-ngán* and *hrul-po*; and there are 35 mis-classifications in the 'high-toned' sections (vi) and (vii), on pp. (xix)–(xxi).² The monosyllable *mig*, on p. (xvi), which is indeed 'deep-toned', as shown, in the reading-style and spelling-style pronunciations of Written Tibetan, should be classified as high-toned, as though written *dmig*, for the spoken Tibetan of Lhasa; and the disyllable *zla-ba*, on p. xviii, which is shown as unclassified ('?'), ought to be deep-toned as far as its initial lexical item *zla* is concerned.

In instances where the word given in Jäschke's table is monosyllabic, deciding whether his tonal classification is correct or not for Lhasa Tibetan is straightforward; but, where his example is disyllabic, my treatment of *mya-ngán*, *hrul-po*, and *zla-ba* in the previous paragraph will have shown that I

¹ Based on a paper presented at the 24th Conference of Sino-Tibetan Languages and Linguistics, Bangkok and Chiangmai, October, 1991, under the title 'Contour pitch in the tonal analysis of Tibetan citation forms contrasted with its role in spoken Tibetan sentences'.

² My romanization follows Wylie (1959), not only for my own examples but also for those in the rather impractical system devised by Jäschke.

have assumed that the Jäschke classification applies only to the initial syllables *mya*, *hrul*, and *zla*. It is in accordance with this assumption that I have rejected Jäschke's classification of *mya-ngán* and *hrul-po* as high-toned and deep-toned respectively; and I also reject his classification of *ma-dpe*, *bzhi-bcu*, and *dge-'dún* (xx) as 'high-toned' on the grounds that the monosyllabic lexical items *ma*, *bzhi*, and *dge* that are initial in those words are all deep-toned. This decision of mine to take Jäschke's classification as applying only to the first syllable of his disyllabic examples affects a total of 115 disyllables contained in his columns for dialects of the Central Provinces, nearly half the total number of examples given there for those dialects; furthermore, it has important theoretical implications going beyond Tibetan to tonological studies in general; so it is incumbent on me to try and justify it.

Firstly, I have to concede that against my assumption stands Jäschke's statement, quoted in my opening paragraph, that 'the Tone is determined by the initial consonant of the word' (xiii). At first sight his having used 'word' here would seem to mean that the unit on which he intended to base his tonal analysis was the word rather than the syllable, thereby pioneering an approach that has led to a sizable body of recent, and controversial, work on the tonal analysis of Tibeto-Burman languages in general, surveyed in the section 'Bodish word tone' of Mazaudon (1977: 76-90). The context of Jäschke's statement, though, suggests to me that he was not distinguishing the word, as a unit, at all strictly from the syllable in this passage. He continues, a sentence later, with the passage quoted above referring to Tibetan orthography: 'An inhabitant of Lhasa, for example, finds the distinction between འ and ར, or between ཨ and ཨ, not in the consonant but in the tone' (xiii). These four symbols, *sh*, *zh*, *s*, and *z*, are syllable-initial symbols of Tibetan orthography (though *s* can also be syllable-final), and would therefore seem to link Jäschke's use of *tone* in Lhasa Tibetan with the syllable through its initial symbol; with the consequence that every occurrence of *sh*, *zh*, *s*, and *z*, and all other such syllable-initial letters, should symbolize a syllable-based tone; so the initial *sh* of *shis* in Jäschke's example *bkra-shis* 'happiness' would confer syllable-tone status on that second syllable (on the other hand it is, of course, possible for syllable-initial letters such as these to be initial in the initial syllable of a word, and apply simultaneously to both syllable and word). Furthermore, in an earlier work of his (Jäschke, 1865) there is a contradiction in the use of the terms *word* and *syllable*: in an early passage Jäschke writes: '4. Syllables: the Tibetan language is monosyllabic, that is to say all of its words consist of one syllable only' (4); but this explicit statement has not prevented him from writing, a few pages later, 'the peculiarity of the Tibetan mode of writing in distinctly marking the word-syllables but not the words (cf. §4) composed of two or more of these, sometimes renders is [sic] doubtful what is to be regarded as one word' (12).

There are two further reasons that lead me to believe that Jäschke's classification was not meant to extend to the second syllable of the disyllabic examples. One of these is that the monosyllables *pa*, *po*, *mo*, and *ba* occur as the second lexical item of both 'high-toned' examples such as *khang-pa*, *chen-po*, *sring-mo*, and *shi-ba*, and 'deep-toned' examples such as *ngan-pa*, *rgad-po*, *bu-mo*, and *za-ba*; so, if these second lexical items are meant to share in the classification of the first lexical item, then *pa*, *po*, *mo*, and *ba* must needs have a double, or a fluctuating, classification, high/deep-toned, being high-toned in some words and deep-toned in others; but it seems to me to be more likely that the classifications 'high-toned' and 'deep-toned' apply only to the first syllable of these disyllabic words, and do not extend to *pa*, *po*, *mo*,

and *ba*. My second reason is that in some of Jäschke's disyllabic examples the second lexical item differs in classification from the first. Thus *bka'*-*'bum* 'The hundred thousand precepts' is classified as 'high-toned', and so is *bcu-bzhi* 'fourteen'; but, while this is a correct classification for the first lexical item of each word, *bka'* and *bcu*, the two second lexical items, *'bum* 'one hundred thousand' and *bzhi* 'four', should be classified as deep-toned, a classification that is at odds with the classification of the initial lexical items. The same criticism, that the class of the second lexical item does not agree with that of the first, also applies to *bzhi-bcu* 'forty' and *ma-dpe* 'original copy (of a book)', which comprise a deep-toned followed by a high-toned syllable; but it has been obscured, because Jäschke has mis-classified these two examples as 'high-toned'.

Considerations such as those given above lead me to believe that Jäschke had no clear principle to follow in delimiting words for the purpose of basing a tonal statement on the word rather than the syllable unit. Unquestionably, though, he must be given the credit for being the first to recognize a register pitch distinction, between a high range of pitches and a low range, for the dialects of Spiti, Tsang, and Ü, including the Lhasa dialect, an especially admirable feat when it is recalled that these tonal dialects were less familiar to him than the non-tonal dialect of Lahoul.

II. Y. R. Chao (1930): 'the high (falling) tone' and 'the low (rising circumflex) tone'

The pioneering phonemic analysis by Chao Yuen-Ren some 50 years later, accompanying the text of the love songs of the sixth Dalai Lama in phonetic transcription (Yu and Jaw, 1930), parallels Jäschke's tonal analysis in that it distinguishes two tonemes, 'the high (falling) tone (53) and the low (rising circumflex) tone (131)'. He has subordinated the contour-pitch aspects of these two tones, 'falling' and 'rising circumflex', to the register-pitch aspect, 'high' versus 'low', by putting the contour pitch features in brackets.

Chao devised a means of symbolizing register-pitch features and contour-pitch features at one and the same time through his scheme of 'tone letters', a series of signs rather resembling semaphore signals: 'each tone letter consists of a vertical reference point line, of the height of an *n* to which is attached a skeleton time-pitch curve of the tone represented. For practical purposes, the height is divided into four equal parts, thus making five points of ordinate counting from below named 1, 2, 3, 4, 5. Thus, a high falling to middle is ∨ called "53:", a low rising to middle and falling low is ∟, called "131:". For tonemes, the curve is drawn to the left of the vertical line, for actual tone values, it is drawn to the right' (1930: 27). The two symbols illustrated so far are, therefore, toneme symbols, and could, in fact, easily have been replaced by figures, such as 1 and 2, or by letters, such as a and b. The contour pitch that they symbolize has, in either case, a falling feature (suggesting sentence-final intonation); but for the low-pitch toneme, '131', the fall is preceded by a rise. If every syllable in *Love Songs* (Yu and Jaw, 1930) had been read, or recited, with a fixed pitch, '53' or '131' according to toneme, the two symbols ∨ and ∟ could have served for the toneme, of the tonemic analysis, and the pitch, of the phonetic analysis, equally; but Chao's remark above that 'actual tone values' have their time-pitch curve drawn to the right of the vertical line shows that he had had to supplement the toneme marks with pitch marks. There are numerous instances in which a high-toneme syllable

has a pitch other than ʘ; e.g. ‘*jin* ʘΓ’ (50) *snying*; or, alternatively, a low-toneme syllable has a pitch other than ʘ; e.g. ‘*ta* ʘL’ (44) *zla*.

In fact, so rare is it for the pitch of a high-toneme syllable to be the same as the pitch symbolized by the toneme symbol ʘ ‘53’ that almost every such syllable would have had to have both toneme mark and pitch mark; and indeed, every single instance of the low-toneme symbol ʘ would have had to be supplemented by a pitch mark; for, surprising though it may seem, there is not a single instance of the ʘ-toneme syllables’ having a ʘ ‘actual tone value’, or pitch. One would have expected Chao to have chosen the pitch that occurred most frequently as the phonetic realization of the low toneme, most probably L, to serve as the symbol of the toneme; so the choice of ʘ ‘131’ I can only account for by hazarding a guess that it occurred more commonly than any other in syllable-isolate utterances, as citation forms. Such a choice certainly cannot be justified from the continuous text of *Love Songs* (but see (V) below, ‘Spelling style pronunciation of Written Tibetan’).

In practice, however, only a minority of syllables in *Love Songs* has needed to be marked by a ‘tone letter’. This is because Chao has been able to make a major economy in ‘tone letters’ for tonemes by exploiting the relationship of the syllable-initial features voicelessness and voice to the two tonemes: ‘high tones with voiceless initials and low tones with voiced initials are not marked, these represent about seventy percent of cases in frequency of occurrence’ (27); but every syllable has had to be accompanied by a pitch mark; e.g. (high toneme) ‘*ca*Γ’ *shar*, ‘*tc*’okΓ’ *phyogs*; (low toneme) ‘*i*l’ *ri*, ‘*w*ɔ’ *bo*’i (44); cf. (high toneme) ‘*jam*ʘΓ’ (48) *mnyam*, ‘*jin*ʘΓ’ (50) *snying*; (low toneme) ‘*ta*ʘL’ (44) *zla*, ‘*tc*’uʘʘL’ (44) *byung*.

From its tone letter ʘ ‘53’ one might have expected high-toneme syllables in the phonetic and phonemic transcription of the *Love Songs* to be restricted to the upper pitch levels, 5 and 4, together with the mid pitch, 3, while the low-toneme syllables might have been expected, from the tone letter ʘ, to occur only with the pitch levels of the lower range, 1 and 2, overlapping the high-toneme syllables, on occasions, at pitch-level 3; but Chao’s pitch transcription reveals the form of Tibetan recited in *Love Songs* to be typologically unusual: it has a complete overlap in the pitch of its two tonemes. In one context or another every one of Chao’s nine pitch marks is attributed to both high toneme and low toneme alike; e.g. (1. high toneme; 2. low toneme)

	Γ	ʘ	ʘ	ʘ	ʘ	ʘ	ʘ	ʘ	L
	<i>gsal</i>	<i>mnyam</i>	<i>rtse</i>	<i>pho</i>	<i>pa</i> ’i	<i>tu</i>	<i>pa</i> ’i	<i>mtsho</i> ’i	<i>song</i>
1.	sel	jamʘ	tse	p’o	p(b)ɛ	tu	p(b)ɛ	ts’ø	soŋ
2.	mɛ	ɕuʘ	wa	ɛ	noɪ	t(d)ukʘ	ɛ	tc’ɛʘ	wɛ
	<i>ma</i> ’i	<i>gzhu</i>	<i>ba</i>	<i>ras</i>	<i>nor</i>	<i>’dug</i>	<i>las</i>	<i>byas</i>	<i>ba</i> ’i

(44, 46, 48, 54, 56, 60, 80)

By one or other of these two methods, the newly devised ‘tone-letter’ method (/ ʘ/, / ʘ/) or the syllable-initial-letter method, Chao has identified every syllable in *Love Songs* with one or other of his two tonemes; hence his tonal analysis can justly be classed as syllable-based; but he has foreshadowed the possibility of extending the tonal analysis of Tibetan beyond monosyllabic units: ‘the actual tones in connected speech follow the general principle of one tone being spread over two or more connecting 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; the low circumflex tone often becomes a rising tone, the following syllable or syllables

taking up a low or falling tone' (pp. 27–8).³ The passage just quoted has been understood by Mazaudon (1977: 81–2; 1984: 95) to mean that Chao was pioneering the notion of 'word tone' in tonal analysis, relating tone to words, whether monosyllabic or polysyllabic, rather than to syllables. I am willing to concede that Chao was toying with the notion of extending tone from monosyllabic to polysyllabic units, 'connecting syllables'; but I cannot go all the way with her in her conclusion because nowhere in this passage has Chao tried to delimit the word as a tonal unit; indeed the term *word* is not even mentioned in it. On the contrary, throughout the phonemic and allophonic transcription of *Love Songs* it is with the syllable that he has identified his two tonemes, either by tone symbol or by letter (cf also Sprigg, 1981: 58–9).

Forward-looking though Chao's approach is in trying to spread the phonetic realizations of his two tonemes, falling-pitch and rising-falling-pitch, over two or three syllables, he seems not to have tried to apply it to his pitch transcription of *Love Songs*. In the first of the love songs (44), for example, which I take as representative, he has not used level pitch followed by a low or a falling pitch, [ˉ _] or [ˉ \], to delimit a 'high (falling) tone' polysyllabic unit; nor has he made similar use of rising pitch followed by a low or a falling pitch, [ˊ _] or [ˊ \], for delimiting a contrasting 'low (circumflex) tone' polysyllabic unit. When I examined the transcription of that first love song, I found that Chao had divided it, by spacing, into 18 units, of which 12 were monosyllables and six were disyllables (*ri-bo'i* and *a-ma'i* being treated as disyllables in Tibetan orthography, by the use of *tsheg*), as shown in the romanized text below, accompanied, to the right of the text, by the 'actual tone', or pitch, marks abstracted from the phonemic and phonetic transcription:

<i>shar phyogs ri-bo'i rtse nas</i>	Γ ƒ ƒ ƒ ƒ ƒ ƒ
<i>dkar gsal zla-ba shar byung</i>	Γ ƒ ƒ ƒ ƒ ƒ ƒ
<i>ma-skyes a-ma'i zhal-ras</i>	ΛΓ ƒ ƒ ƒ ƒ
<i>yid la 'khor-'khor byas byung</i>	Γ ƒ ƒ ƒ ƒ ƒ

'From the mountain peaks in the east,
The silvery moon has peeped out.
And the face of that young maiden*,
Has gradually appeared in my mind.' (45)

Chao's prescription would require *rtse* and *nas*, *shar* and *byung*, and, possibly, *phyogs* and *ri*, *gsal* and *zla*, and *ma'i* and *zhal*, to be grouped together as spread-toneme-1 units, and *byas* and *byung* as a spread-toneme-2 unit; but he has separated these syllables. Without warrant from his own prescription he has united *ri* and *bo'i*, *zla* and *ba*, *ma* and *skyes*, *a* and *ma'i*, and *'khor* and *'khor*. I am in agreement with all six of his disyllables except *ma-skyes*, though I do not see how he could have justified them from his pitch criteria as stated (p. 27); and I should have been in agreement with treating *rtse-nas*, *shar-byung*, and *byas-byung* as spread disyllabic units, if he had chosen to apply his criteria to them.

Further, I should wish to treat *shar-phyogs*, *dkar-gsal*, and *yid-la* as disyllabic units, or words. Uniting these three pairs of syllables cannot be justified from Chao's pitch criteria as stated by him; but it can be justified by a re-

³ This passage would have been easier to follow if, instead of using the term 'tone' in both a phonemic and a phonetic sense, Chao had restricted 'tone' to toneme units, and introduced the term *pitch* to distinguish corresponding phonetic features.

interpretation of the pitch features shown in his transcription. In other words, I would say that he has supplied the criteria for such an analysis as this without realizing it. The pitch features of his providing that I should use to give the status of word unit to *shar-phyogs* and *dkar-gsal* are the level, or nearly level, sequence of high pitches ('55' and '54'; '55' and '55'); and for *yid-la* my criterion would be higher pitch followed by a low pitch (cf. Sprigg, 1955: 146–8; because of a misprint, perhaps, *yid-la* has been shown here as high-tone). I could also have supported my phonological analysis by my grammatical analysis of this word, as noun-and-particle (cf. Sprigg, 1955: 143–6).

Summarizing my view of Chao's analysis I would say that he had realized that both contour-pitch features such as 'level' and 'falling' and a register-pitch feature, 'low', could be used to group syllables into some larger unit; but he had been led astray through trying to associate these pitch features with the supposed pitch patterns of his two tonemes in monosyllables, ʌ and ʌ, but 'spread over two or more connecting syllables'. If he had made a rigorous attempt to analyse the text of *Love Songs* uninfluenced by any such preconception, he would probably have become aware of pitch patterns such as [] and [] that really do serve the purpose of uniting syllables into larger units, the sort of unit that I have termed *word* (Sprigg, 1955: 134–42, 146–53). His analysis would then have been a milestone in tonology, challenging, 18 years in advance, Pike's highly restrictive limitation of *tone* to monosyllables, in the oft-quoted definition of a tone language as 'a language having lexically significant, contrastive, but relative pitch on each syllable' (Pike, 1948: 14–15).

Without a rigorous delimitation of polysyllabic and monosyllabic units such as those which I have termed *word*, I do not see how Chao's syllable-by-syllable tonemic analysis can be credited with being word-based any more than Jäschke's analysis, which I have already discussed from this point of view in (I) above. Consequently, I am not in agreement with Mazaudon's having included Chao's name in the following passage from her authoritative survey of tone as one of the most important categories in the phonological analysis of Sino-Tibetan languages: 'turning to more recent descriptions of the tonal systems of Lhasa Tibetan, we find that Sprigg (1954, 1955) and Shefts (1968a, b, c, d), despite the fact that these two scholars work with totally different theoretical assumptions, are in agreement with each other and with Chao on the relation of tones to words' (1977: 81–2).

III. Sprigg (1954, 1955): 'tone-one' and 'tone-two' 'words'

Sprigg (1954) and Sprigg (1955), referred to above by Mazaudon as among 'more recent descriptions of the tonal system of Lhasa Tibetan', continue the approach of Jäschke and of Chao (I–II) by distinguishing two tones for Lhasa Tibetan on the basis of a distinction in register pitch. What distinguishes Sprigg (1954), from the two earlier analyses is that it precedes the tonal analysis with a junction analysis: 'a two-term junction system' 'to delimit units within the sentence ("words"). It is therefore convenient to use the name "interverbal junction" for the term whose phonetic exponents are associated with "word" limits, and "intraverbal junction" for the term whose phonetic exponents are associated with absence of "word" limits' (146–7); e.g. (interverbal junction) syllable initial affrication, lateralization, labio-velarity; syllable-final nasality of vowel; (intraverbal junction) syllable-initial velar plosion in conjunction with front spread vowel, labio-palatal semi-vowel; syllable-final velar nasality' (147–9). These word-delimiting features are restricted, in Sprigg (1954), to certain trisyllabic words analysable

grammatically into verb + particle + particle, e.g. *phye-gi-'dug* ' (he) opens ', *rtse-ba-red* ' (he) played ' (147). Once word boundaries have been strictly delimited, characteristic trisyllabic pitch patterns can be attributed to the type of trisyllabic word chosen for analysis in that article, in accordance with differences in tone and intonation; e.g.

		emphasized	pre-emphasized (VI.A.3)
	<i>snyung-gi-'dug</i>	<i>snyung-gi-'dug</i>	<i>gnang-gi-red</i>
Tone 1:	[ˉ˙˘]	[ˉ˙˘]	[ˉ˙˘]
Tone 2:	[ˉ˙˘]	[ˉ˙˘]	[ˉ˙˘]
	<i>na-gi-'dug</i>	<i>na-gi-'dug</i>	<i>zer-gyi-'dug</i>
	<i>bcar-ba-yin</i>	<i>bcar-ba-yin</i>	<i>thad-pa-red</i>
Tone 1:	[˘˙˘]	[˘˙˘]	[˘˙˘]
Tone 2:	[˘˙˘]	[˘˙˘]	[˘˙˘]
	<i>yod-pa-red</i>	<i>yod-pa-red</i>	<i>bsdad-pa-yin</i>

- (Tone 1: (he) is ill (hon.), (he) *is* ill! (hon), he will *certainly* give it!
 2: (he) is ill, (he) *is* ill! *that* is what he says!
 1: (I) visited him, (I) *visited* him! he went to the *market*!
 2: there are, there *are*! I stayed there *about four months*!)

In the columns entitled *emphasized* it is the verb-and-particle word itself that is emphasized; but in the *pre-emphasized* columns the pitch pattern of this word shows that there is emphasis affecting some word earlier in the sentence or clause, a common occurrence in Lhasa Tibetan (examples in full have been given in Sprigg, 1954: 142–6). In the third column it will be seen that the pitch pattern is identical for words of either tone: [ˉ˙˘]; the role of intonation in Lhasa Tibetan, therefore, is far from negligible.

Junction features for delimiting verb words in general, over and above those referred to, briefly, for trisyllabic verb-and-particle words such as those exemplified above have been added in a footnote (Sprigg, 1954: 147); Sprigg (1955) returns to the topic of delimiting the word, but in relation to the types of word that occur in the noun phrase. A detailed recapitulation of the various features used for the purpose in that article would be out of place here; it will be enough to indicate that those features are organized in four categories according as they are appropriate to syllable-initial consonants (C-) and syllable-final consonants (-C): (I) characterizing C-: (A) interverbal (135–9), (B) intraverbal (139–40); (II) characterizing -C: (A) interverbal (140), (B) intraverbal (140–2). Once a body of noun-phrase words has been delimited in accordance with those phonetic criteria, it becomes clear that the characteristic grammatical types of word in the noun phrase are the noun, adjective, or postpositon, and also colligations of these three major categories with the particle category. At that point the procedure can be reversed; and the grammatical categories noun (+ particle), adjective (+ particle), and postposition (+ particle) can themselves be used as criteria to delimit word units. This reverse procedure, based on grammatical criteria, is particularly helpful in those instances in which there happen not to be phonetic criteria for delimiting the word, though this latter circumstance is not common. On the contrary, alternations in the phonetic form of a given lexical item are common, and are especially useful in determining the status of the lexical item in question as regards the word unit, e.g. alternation in the phonetic form of the lexical item *chang* according as it occurs in the monosyllabic word *chang* 'beer'

and the disyllabic word *chang-ma* 'bar-maid', with the voicelessness and aspiration, [tɕh], appropriate to interverbal junction, as opposed to the disyllabic words *mchod-chang* 'beer' (hon.) and *rgun-chang* 'wine', with the full voice and, therefore, non-aspiration, [dz], appropriate to intraverbal junction.

For disyllabic nouns Sprigg (1955) shows a level pitch pattern for tone-1 words and a rising pattern for tone-2 words (147–51), a few examples of which I have given below; and I have supplemented them with examples of falling patterns, some of which are taken from Sprigg (1955: 147–52). The falling-pitch alternative patterns have such functions as citation, emphasis, and, apart from those which end in a short vowel (-a, -i, -u), occurrence with a particle such as *-la* 'at', 'to', and *-nas* 'from'.

	<i>rta-pa</i>	<i>g.yag-rdzi</i>	<i>sku-dpar</i>	<i>lcags-sgam</i>
Tone 1: level:	[ˉ ˉ]	[ˉ ˉ]	[ˉ ˉ]	[ˉ ˉ]
falling:	[ˉ ˘]	[ˉ ˘]	[ˉ ˘]	[ˉ ˘]
Tone 2: rising:	[ˉ ˉ]	[ˉ ˉ]	[ˉ ˉ]	[ˉ ˉ]
falling:	[ˉ ˘]	[ˉ ˘]	[ˉ ˘]	[ˉ ˘]
	<i>ga'u</i>	<i>lug-rdzi</i>	<i>ja-ldong</i>	<i>sgam-chung</i>

(Tone 1: horseman, yak-herd, photograph (hon.), steel trunk;

Tone 2: charm-box, shepherd, tea-churn, small box).

The level (tone-1) and the rising (tone-2) pitch patterns for these examples of disyllabic nouns are the reason for my observation, in (II) above, that Chao could well have made use of these pitch patterns for identifying polysyllabic units in *Love Songs* rather than the falling and rising-falling pitch patterns that he was seeking to apply there. These patterns would have been effective in converting the following sequences of monosyllables, in Song number 1, into disyllabic words (I have added the 'tone letters' for each syllable from Chao's phonetic transcription):

tone 1: *shar phyogs* ㄉㄨ, *dkar gsal* ㄉㄨ;

and they would have given a pitch-pattern justification to the following disyllabic groups of his:

tone 1: *a-ma'i* ㄉㄨ, *'khor-'khor* ㄉㄨ;

tone 2: *ri-bo'i* ㄌㄨ, *zla-ba* ㄌㄨ, *zhal-ras* ㄌㄨ.

In concluding this section, in which I have stressed the importance of using junction phonetic features to establish word boundaries, with support from grammatical categories, noun, adjective, and postposition (+ particle), and, indeed, from characteristic pitch patterns of disyllabic words themselves, I feel I should not overlook vowel harmony: '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, 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' (Sprigg, 1955: 142).

Sprigg (1954) and Sprigg (1955) bring to an end what one might call the two-tone era of tonal analysis for Tibetan, which began with Jäschke (1881), and continued with Chao (1930); during this period tonal analysis was based on a distinction in register alone. Chang and Shefts (1964) introduces a period in which all the tonal analyses of Lhasa Tibetan are based, at least to some extent, on differences in contour pitch as well as register pitch. To

accommodate these contour-pitch distinctions the number of tones has been increased from two to four, though the newly introduced four tones do not necessarily apply to all types of syllable.

IV. *Chang and Shefts (1964), Hari (1979), and Hu (1982): 4-tone or 2/4-tone; syllable-based or morpheme-based*

To represent this later period in the tonal analysis of Tibetan I have chosen the three authorities Chang and Shefts, Hari, and Hu; this I have done mainly because they differ among themselves as regards number of tones and distribution of the tones in relation to differences in syllable (or, for Hari, morpheme) made in the syllable final, and also because the analysis in one of them, Chang and Shefts (1964), has been accepted by Goldstein (1970), and followed by Kitamura (1974), thus making it unnecessary to refer to those two later analyses separately.

A. *Categories of syllable final and distribution of the tones*

The most straightforward way of illustrating the differences, and the similarities, between my three chosen sources for these four-tone and two/four-tone analyses, (1) Chang and Shefts (1964), (2) Hu (1982), and (3) Hari (1979), is to present the number of tones that they distinguish in the form of a table in relation to syllables having different types of syllable final (V represents short vowel, VV long vowel, and \tilde{V} , or, for Hu, \check{V} , nasalized vowel):

Table 1: *Chang and Shefts, Hu, and Hari: tones and types of syllable*

	V	Vq	Vr	Vp	VV	$\tilde{V}\tilde{V}$	V η	Vm	V?	Vk	Vn	Total
1:	2	2	2	2	4	4	4	4				8
2:	2		2	2	2	4	(ciŋ̄)	4	2	(tcik̄)		7 (or 9)
3:	4		4	4	4		4	4	4	4	4	9

Instead of a figure for the number of tonal distinctions I have put examples, in brackets, for Hu's two categories V η and Vk because these are the only two examples that he has given to support these two categories (35), with no tonal contrast, therefore; moreover, they are both alternative forms of the \tilde{V} and V? items $\text{ci}:\bar{\text{t}}$ *shing* 'wood' and $\text{tc}i:\bar{\text{t}}$ *gcig* 'one' respectively; so their phonological status is uncertain. Perhaps they should be considered as merely phonetic variants, differing only in style or tempo, from the \tilde{V} and V? phonetic forms.

Chang and Shefts (1964) analyses the Lhasa Tibetan syllable finals into eight categories, Hu (1982) into nine, but only seven if the V η and Vk categories are combined with the \tilde{V} and the V? respectively, and Hari (1979) into nine categories; so agreement between these three authorities is not complete. The Chang and Shefts Vq category corresponds to the two categories V? and Vk of Hari, and to the V? category of Hu, together with the Vk category (if not absorbed into the V?); and its VV category corresponds to the V η and Vn categories of Hari, and to Hu's \tilde{V} category, together with his V η category (if not absorbed into the \tilde{V}).⁴

⁴ A detailed comparison of the syllable-final categories distinguished by these three authorities is contained in Sprigg (1991: 97–128), which tries to account for the differences between them as resulting from the spelling style of pronunciation that literate Tibetans regularly use in order to introduce citation forms; the characteristically Tibetan tradition of spelling one-word isolates before pronouncing them serves the useful purpose of distinguishing homophones, which are confusingly numerous in Lhasa Tibetan.

Hu (1982) overlaps the two-term tonal analyses of Jäschke, Chao, and Sprigg, based on a register-pitch distinction alone (I–III), almost completely: it applies a register-based analysis to all its categories of syllable final except the ‘VN’ (Vm, V̄, and, possibly, Vη): ‘seules les finales nasales ont quatre tons, les autres finales n’admettant que deux tons’ (22). Hu’s examples include one example of a tonal difference in VN syllables that is not between different lexical items but between two different grammatical forms of the same lexical item: ‘kam᳚ “faire (prés)” kam᳚ “faire (passé)”’; since these two forms are in complementary distribution, by grammatical category, it would be possible, and, in my view, preferable, to treat them as non-comparable for tonal analysis, and therefore to treat the contour-pitch difference between them as merely pitch variation, like that between allotones in a tonemic analysis.

Chang and Shefts (1964) overlaps the three earlier two-term analyses (I–III) in respect of half its syllable-final categories, all of them short-vowel (though not all short-vowel categories of final are two-tone, Vη and Vm, for example). For some of their lexical items, though, it is difficult to decide whether this sizable overlap applies or not; this is because these lexical items show a difference in syllable final, with one variant belonging to one of the overlapping syllable-final categories but the other belonging to a non-overlapping category; e.g.

overlapping:	tuq-	‘brug-	e.g. tuqp̄	Bhutanese	(1964: 67)
non-overlapping:	tuù	‘brug,		Bhutan	(1964: 67)
overlapping:	sār-	gsar-	e.g. sārλ	newer	(1978: xlvi)
non-overlapping:	sāā-	”	sāāpā	new	(1978: xlvi)

Here, again, it is possible to appeal to complementary distribution in an attempt to treat the Vq and the VV form of ‘brug as non-comparable: the Vq form occurs in intraverbal junction with *pa*; the VV form occurs in interverbal junction (word-final position). The Vr and the VV forms of *gsar* can also be treated as complementarily distributed junction variants in the same way, never occurring under the same conditions, and never in direct contrast (cf. also, for a more ample treatment, Sprigg, 1981).

The only one of my three authorities not to overlap the three earlier register-based analyses (I–III) is Hari (1979): her four-term analysis applies to all nine of her categories of final. Some of her ‘morphemes’ (mostly corresponding to lexical items) do, however, show a variation in pitch for the same tone.⁵ This is because of a variation in syllable final. Her morpheme 2/tuhk/ ‘dug be, for example, has the two phonetic forms [ˈduk] and [ˈduːʔ] (81), the former of which has a level contour ([_]), and the latter a level-falling contour ([_ʔ]; but both pitches are low-register); while her morpheme /ˈthak/ rock (13) *brag* has three contour-pitch variants, (i) rising, (ii) rising-level, and

⁵ Some of the disyllabic forms that Hari treats as disyllabic morphemes I should treat as bimorphemic, or, rather, divisible into two lexical items; e.g. /ˈkohŋa/, /mohmoʔ/, /tchura/, /ˈtihmiʔ/, /ˈjihki/, egg, momo (a dish), cheese, key, letter’ (84); these disyllables can be shown to be composed of two separable items through comparing them with *bzhes-sgong*, *bzhes-mog*, *bzhes-phyur*, *phyag-lde*, and *bod-yig*, egg (hon.), momo (hon.) [Tibetan savoury dumpling], cheese (hon.), key (hon.), Tibetan alphabet. (For technical reasons it has not been possible to reproduce the tone-marking system of Hari (1979) exactly as in the original. Thus rise and fall tone marks here appear as straight rather than curved and do not project beyond bracket height, while level and level-fall tone marks show angled rather than curved endings. Ed.)

(iii) rising-falling, depending on whether the phonetic features of the final are (i) short vowel and velar stop, (ii) medium vowel and glottal stop, or (iii) medium vowel (cf. also Sprigg (1991: 120).

B. Disagreement over pitch features

In section (A) above I have shown that differences in phonological and phonemic analysis between Chang and Shefts (1964), Hu (1982), and Hari (1979) must result in a fair measure of disagreement over the tonal classification that each of them gives to lexical items differing from each other in the type of syllable final that they have. The lexical item *rdo* 'stone', for example, will be classified in relation to a twofold tonal difference for Chang and Shefts and for Hu, but a fourfold difference for Hari; and *dn̄gul* 'silver' will be classified in relation to a twofold difference for Hu, but a fourfold difference for Chang and Shefts and for Hari. Only for the nasal-final type of lexical item, such as *gong* 'price' and *gsum* 'three', do all three authorities agree, and apply a fourfold distinction in tone.

When there is such a marked measure of disagreement at the phonological level, one may well wonder how much agreement there is at the phonetic level: how far have my three sources noted identical pitch features for the various classes of lexical item? To try and answer this question I have assembled examples in twelve sections based on orthographic categories (with -V representing final *a*, *i*, *u*, *e*, *o*, and *ʔ*): -V, -*d*, -*g(s)*, -*l*, -*r*, -*s*, -*b(s)*, -*n*, -*ng*, -*ngs*, -*m*, -*ms*.

I have treated the nasal finals -*ng* and -*ngs*, and -*m* and -*ms*, differently from -*g(s)*, and -*b(s)* in this presentation in order to explore the possibility that the difference between the *yang*-*jug* combinations -*ngs*, and -*ms* and the *rjes*-*jug* finals -*ng* and -*m* might account for Hu's having distinguished four tones for his 'finales VN' as opposed to the two tones that he has found adequate for all the other categories of final.

Types of syllable for which Chang and Shefts (1964) has only the twofold possibility, those in -V, -*q*, -*r*, and -*p*, e.g. *tə* 'stone' *rdo*, *tā* 'horse' *rta*, indicate register pitch only; but I have been able to learn the contour pitch of examples of these types of final from the tape recording that accompanies the book.

The order in which examples are presented from my three sources in table 2 is different from that in table 1 above; in this table it is chronological: (1) Chang and Shefts (1964), (2) Hari (1979), and (3) Hu (1982).

In table 2 I have, as far as possible, used examples common to all three sources. The most useful way to consider the table is to analyse it into classes in which (i) all three sources, (1), (2), and (3), are in agreement, (ii) only two are in agreement, and (iii) none are in agreement, within the framework of the 12 types of syllable final. Thus, (i) for the V-final type with example *rdo* 'stone' all three sources agree; (ii) for the V-final type with example *nga* 'I' two agree, Chang and Shefts and Hu; and for the *l*-final type with example *drel* 'mule' too, two agree; but for this example it is Chang and Shefts and Hari that are in agreement; while for the *l*-final type with *skol* as its example it is Hu and Hari that agree; and (iii) for -*l* with example *bal* 'wool' all three disagree: rise versus level versus level-rise. One set of examples, the *g*-final set with example *gcig* 'one', does not easily fit into these three categories: Chang and Shefts (1964) has given alternative contour pitches here, one of which, the falling contour, agrees with Hu (1982), while the other alternative, level contour, agrees with Hari (1979).

Table 2: *Contour-pitch features of the Tibetan tones in citation forms:*

(1) Chang and Shefts (1964), (2) Hari (1979), (3) Hu (1982)

-V	1	rise	[˧]	tō	<i>rdo</i>	rise	[˧]	ŋa	<i>nga</i>
	2	"	[˧]	l'toh	"	level	[˨]	2ŋah	"
	3	"	˩	to	"	rise	˩	ŋa	"
	1	fall	[˨]	ŋā	<i>lŋa</i>	fall	[˨]	tā	<i>rta</i>
	2	"	[˨]	3'ŋa	"	level	[˨]	4ta	"
	3	"	˩	ŋa	"	fall	˩	ta	"
-d	1	rise-fall	[˧]	kɛ̀ɛ̀	<i>brgyad</i>	rise-fall	[˧]	phṑò̀	<i>bod</i>
	2	"	[˧]	l'kjeh?	"	level-fall	[˨]	2phṑh?	"
	3	"	˩	tɛ?	"	rise-fall	˩	p'ø?	"
	1	fall	[˨]	qɛ̀ɛ̀	<i>skad</i>	fall	[˨]	thūi	<i>khrid</i>
	2	"	[˨]	3'ke?	"	level-fall	[˨]	4thi?	"
	3	"	˩	ke?	"	fall	˩	tš'i?	"
-g(s)	1	rise-fall	[˧]	quù	<i>sgug</i>	rise-fall	[˧]	sūi	<i>gzig</i>
	2	"	[˧]	l'kahk?	'gag	level-fall	[˨]	2sih?	"
	3	"	˩	ka?	"	rise-fall	˩	si?	"
	1	fall	[˨]	yāa	<i>g.yag</i>	fall/level	[˨] [˨]	ciq	<i>gcig</i>
	2	"	[˨]	3'jak	"	level	[˨]	4tcik	"
	3	"	˩	ja?	"	fall	˩	tcī?	"
-l	1	rise	[˧]	thɛɛ	<i>drel</i>	rise	[˧]	phɛɛ	<i>bal</i>
	2	"	[˧]	l'theh	"	level	[˨]	2pheh	"
	3	level-rise	˩	tš'e:	"	level-rise	˩	pe:	"
	1	level-fall	[˨]	ŋūū	<i>dngul</i>	level-fall	[˨]	qṑṑ	<i>skol</i>
	2	fall	[˨]	3'ŋy	"	level	[˨]	4kø	"
	3	level	˩	ŋy:	"	"	˩	kø:	"
-r	1	rise	[˧]	māa	<i>mar</i>	rise	[˧]	nəə	<i>nor</i>
	2	"	[˧]	l'maah	"	level	[˨]	2nohr	"
	3	level rise	˩	ma:	"	level-rise	˩	tar	'dar
	1	level-fall	[˨]	yāa	<i>g.yar</i>	level-fall	[˨]	šāa	<i>shar</i>
	2	fall	[˨]	3'jar	"	level	[˨]	4car	"
	3	level	˩	ja:	"	"	˩	ca:	"
-s	1	rise-fall	[˧]	thūi	<i>bris</i>	rise-fall	[˧]	šɛ̀ɛ̀	<i>gzhas</i>
	2	"	[˧]	l'thih?	"	level-fall	[˨]	2cɛh	"
	3	"	˩	tš'i?	"	rise-fall	˩	cɛ?	"
	1	level-fall	[˨]	ñīi	<i>gnyis</i>				
	2	fall	[˨]	3'ŋii	"				
	3	level	˩	nii	"				
	1	fall	[˨]	nɛ̀ɛ̀	<i>gnas</i>	fall	[˨]	tɛ̀ɛ̀	<i>bltas</i>
	2	"	[˨]	3'ne?	"	level-fall	[˨]	4tɛ?	"
	3				"	fall	˩	tɛ?	"
-b(s)	1	rise-fall	[˧]	nuù	<i>nub</i>	rise	[˧]	lɔp	<i>lab(s)</i>
	2	rise	[˧]	l'nuhp	"	"	[˧]	l'lahp	"
	3	rise-fall	˩	nu?	"	rise-fall	˩	ləp	"
	1	rise	[˧]	phup	<i>bubs</i>				
	2	level	[˨]	2phuhp	"				
	3				"				

	1	fall	[˘]	tāp	<i>btāb</i>	fall	[˘]	khāp	<i>khāb</i>
	2	"	[˘]	3'tāp	"	level	[˘]	4khāp	"
	3	"	˘	tāp	"	fall	˘	k'āp	"
<i>-n</i>	1	rise	[˘]	tūū	<i>bdun</i>	rise	[˘]	khōō	<i>gon</i>
	2	"	[˘]	1'tyhn	"	level	[˘]	2khōhn	"
	3	level-rise	˘	tū:	"	level-rise	˘	k'ō:	"
	1	level-fall	[˘]	mēē	<i>sman</i>	level-fall	[˘]	cēē	<i>spyan</i>
	2	fall	[˘]	3'men	"	level	[˘]	4tēn	"
	3	level	˘	mē:	"				
	1	fall	[˘]	chīī	<i>phyin</i>				
	2	level	[˘]	4tchin	"				
	3	fall	˘	tē'ī	"				
<i>-ng</i>	1	rise	[˘]	tsiŋ	<i>rdzing</i>	rise-fall	[˘]	qhōō	<i>gong</i>
	2	"	[˘]	1'tsiŋ	"	level	[˘]	2khohŋ	"
	3	level-rise	˘	k'ō	<i>gong-ba</i>	rise-fall	˘	k'ō	"
	1	fall	[˘]	thūū	<i>'thung</i>	level-fall	[˘]	tōŋ	<i>stong</i>
	2	"	[˘]	3'thoŋ	"	level	[˘]	4toŋ	"
	3	level	˘	t'ū:	"	"	˘	tō:	"
<i>-ngs</i>	1					rise-fall	[˘]	sāā	<i>zangs</i>
	2	rise	[˘]	1'tahŋ	<i>gdangs</i>	level	[˘]	2sahŋ	"
	3	rise-fall	˘	tā	"	rise-fall	˘	sā	"
	1	fall	[˘]	khāā	<i>khengs</i>				
	2	"	[˘]	3'khaŋ	"				
	3	"	˘	k'ā	"				
<i>-m</i>	1	rise	[˘]	thom	<i>dom</i>	rise-fall	[˘]	sīm	<i>gzim</i>
	2	"	[˘]	1'thohm	"	level	[˘]	2sihm	"
	3	level-rise	˘	t'om	"	rise-fall	˘	kam	<i>'gam</i>
	1	fall	[˘]	tsōm	<i>rtsom</i>	level-fall	[˘]	sūm	<i>gsum</i>
	2	"	[˘]	3'tsom	"	level	[˘]	4sum	"
	3	"	˘	p'am	<i>pham</i>	"	˘	sum	"
<i>-ms</i>	1	rise	[˘]	cham	<i>byams</i>	rise-fall	[˘]	nām	<i>nyams</i>
	2	"	[˘]	1'tchahm	"	level	[˘]	2ŋjahm	"
	3					rise-fall	˘	ŋam	"
	1	fall	[˘]	tshēm	<i>tshems</i>	level-fall	[˘]	sēm	<i>sems</i>
	2	"	[˘]	3'tshem	"	level	[˘]	4sem	"
	3								

Glosses: (-*V*) stone, I, five, horse; (-*d*) eight, Tibet, voice, lead (vb); (-*g(s)*) wait, stop (vb), leopard, yak, one; (-*l*) mule, wool, silver, boil (vb); (-*r*) butter, err, tremble, lend, east; (-*s*) write, song, two, place, looked; (-*b(s)*) west, speak, piece of cloth, cast (vb), needle; (-*n*) seven, put on, medicine, eye (hon.), went; (-*ng*) pond, martingale, price, drink (vb), empty; (-*ngs*) music, copper, fill; (-*m*) bear, sleep (hon.), make, beaten, three; (-*ms*) love, dignity, tooth (hon.), mind.

The degree to which my three sources agree in this admittedly very small sample appears from the following totals, from which I have excluded *spyan*, *gdangs*, *byams*, *tshems*, and *sems* because they did not belong to a full set of three, and *geig* because Chang and Shefts's alternative pitches make it impossible to give it a single classification:

1/2/3	1/2 v. 3	1/3 v. 2	2/3 v. 1	1 v. 2 v. 3	
10	8	14	4	7.	Total 43.

An alternative way of presenting my findings, including *byams* and *tshems* this time, would be the following three levels of agreement:

1 and 2	1 and 3	2 and 3	
20	24	14.	Total 58.

These figures can, after all, only be some indication of agreement in phonetic observation; but I take it to be significant that even at the phonetic level the overall agreement of my three sources as regards contour pitches is only ten out of 43, less than a quarter, and that the best figure for agreement between any two sources is less than half, that for 1 and 3, Chang and Shefts in agreement with Hu. In other words, the level of agreement over the raw data is low.

If one were analysing spoken-English monosyllables from the point of view of contour pitch, one would expect all of them to have the same pitch, probably the characteristic rising pitch of list intonation, except for the last, which could be expected to have a sentence-final falling pitch; or, alternatively, each of the monosyllables might be treated as a one-word sentence, and given a sentence-final falling pitch; but this is not so with the contour pitches of monosyllabic citation forms in Lhasa Tibetan. On the contrary, my three sources make at least two contour-pitch distinctions for each register, and Hari makes as many as four distinctions for the lower register. The types of pitch they distinguish are the following (I have placed *level* in brackets for Chang and Shefts because it occurs only as an alternative, for *gcig*):

Table 3: *A comparison in the number and types of pitch distinguished*

1:	low.:	rise		rise-fall		(2)
	upp.:	fall	(level)	level-fall		(2)
2:	low.:	rise	level	rise-fall	level-fall	(4)
	upp.:	fall	level	level-fall	level-fall	(3)
3:	low.:	rise		rise-fall	level-rise	(3)
	upp.:	fall	level			(2)

My next care is to arrange the contour pitches in pairs, each pair having a lower-register member and an upper-register member, and display the relations of these pairs of pitch features, as they appear in my three sources, in the following order, (1) Chang and Shefts, 1964, (2) Hu, 1982, and (3) Hari, 1979, with the categories of Tibetan orthography (with V again representing a final vowel symbol, *a, i, u, e, o, '.*).

1. *Chang and Shefts (1964)*

For Chang and Shefts these relations are as shown in table 4. Table 4 shows that in the Chang and Shefts analysis the first pair of contours, rise and fall, transcribed from the tape-recording that accompanies Chang and Shefts, 1964, are related only to the V type of final, the *b(s)* type, and the mere handful of *g*-final lexical items that are treated as -Vq (and therefore enclosed in brackets); and the reverse is also true: the Chang and Shefts V and p categories, and the few members of the q-final category, are related

only to the V and *b(s)* categories of the orthography (except for one *b*-final lexical item, *nub* ‘west’, which is treated as *nuù*, with final VV), and those members of the *g(s)* category, e.g. *gcig* ‘one’, *shugs* ‘strength’, which Chang and Shefts treats as velar-final (-q). The VV, the η , and the $\tilde{V}\tilde{V}$ finals, on the other hand, are complementarily distributed: syllables containing them have the second pair of pitch features, rise-fall and fall, when spelt with the final *d*, *g(s)*, and *s*, and with *ngs*, but the third pair, rise and level-fall, when spelt with final *l* and *r*, and with *ng* and *n*. Further, *m*-final syllables are to some extent in complementary distribution: almost without exception they have the second pair of pitches when spelt with *-ms* but the third pair when spelt with *-m*; but only about half of the *m*-final examples, six, in fact, have that third pair of pitch contours. The remaining *m*-final examples, seven in number, share the second pair of pitch features with the *ms*-finals, and therefore contrast, in contour pitch, with those *m*-finals which have the third pair of pitches. I can find no explanation in Tibetan orthography for this contrast, limited to the *m*-finals.

Table 4: Relations of phonological finals to orthographic finals

	V	<i>b(s)</i>	<i>d</i>	<i>g(s)</i>	<i>s</i>	<i>ms</i>	<i>ngs</i>	<i>ng</i>	<i>ng</i>	<i>l</i>	<i>r</i>	<i>n</i>	<i>m</i>
lower: rise:	V	p		(q)									
upper: fall:	V	p		(q)									
lower: rise-fall:	(VV)	VV	VV	VV	VV	m	η^6	$\tilde{V}\tilde{V}^7$					m
upper: fall:		VV	VV	VV	VV	m	η	$\tilde{V}\tilde{V}$					m
lower: rise:								η	$\tilde{V}\tilde{V}$	VV	VV, r	$\tilde{V}\tilde{V}$	m
upper: level-fall:								η	$\tilde{V}\tilde{V}$	VV	VV, r	$\tilde{V}\tilde{V}$	m

Apart from these *m*-final examples which have the second pair of pitches, e.g. *bsdum* ‘arbitration’, *tshem* ‘tooth’ (hon.) (but *ms*-final, *tshems*, in Jäschke, 1881/1934, 451), with their rise-fall and fall pitches according as they are lower-register or upper-register, Chang and Shefts (1964) syllable finals have either (i) an exclusive relationship with certain orthographic categories, such as the relationship of -V and -p with -V (*ai/lu/e/o/’*) and -*b(s)* respectively, or (ii) a relationship of complementary distribution, such as the relationship -VV, -m, - η , - $\tilde{V}\tilde{V}$ with either -*d*, -*g(s)*, -*s*, -*ms*, and -*ngs* as opposed to -*l*, -*r*, -*ng*, and -*n*.

2. Hu (1982)

I am not taking the three analyses in chronological order, because I find that the relationship of pairs of contour pitches in Hu (1982) with the orthographic categories of Tibetan is quite similar to that of Chang and Shefts (1964); see table 5.

Table 5: Relations of phonological finals to orthographic finals

	V	<i>b(s)</i>	<i>d</i>	<i>g(s)</i>	<i>s</i>	<i>ms</i>	<i>ngs</i>	<i>ng</i>	<i>l</i>	<i>r</i>	<i>n</i>	<i>m</i>
lower: rise:	V											
upper: narrow fall (54):	V											
lower: rise-fall:		p, ?	?	?	?	m	\tilde{V}	\tilde{V}				m
upper: wide fall (52):		p	?	?	(k)	?	m	\tilde{V}	\tilde{V}			(\tilde{V}) ⁸ m
lower: level-rise:						m		\tilde{V}	V:	V:, r	\tilde{V} :	m
upper: level:								\tilde{V} (η)	V:	V:, r	\tilde{V} :	m

⁶ There are also two *ng*-final examples, *’brenq* and *rong* (pp. 8, 9), with this contour.

⁷ There is also a *ng*-final example, *gong* (8), with this contour.

⁸ Hu’s only example for this category, *phyin* went, he attributed to a spelling in ‘-nd’ in ‘Ancien Tibétain (forme écrite)’ (37).

In Hu's analysis it is only the vowel-final lexical items that have the first pair of contour pitches, the rise and the slight fall; so this analysis agrees with Chang and Shefts (1964), to this extent, though the former also has this pair of contour pitches for lexical items with final *b(s)* as well, and for the handful of lexical items with final *q*.

The complementary distribution that applies to all categories of lexical item except those with final *m* in Chang and Shefts, at (1) above, applies to most categories in Hu (1982) too: *V*, *p*, *ʔ*, *(k)*, *V*; and *(r)* (*-V*, *-b(s)*, *-d*, *-g(s)*, *-s*, *-l*, *-r*, and, with one exception, *-n*). The types of lexical item that, on the contrary, show a contrast between the second pair of pitches and the third are only the *m*-final and the *V̇*-final (*-ms*, *-ng*, *-m*). The *m*-final category corresponds to the *m*-final category of Chang and Shefts (1964) in this respect, but not the distinction within the *V̇*-final type here. Strictly speaking, the latter distinction applies only to those lexical items which are spelt with *-ng*, not *-ngs*; for the latter are confined to the second pair of contour pitches. Furthermore, the only example of final *ŋ* is confined to the third set, and so, too, are the long-vowel finals *V̇*;, all of which are spelt with *-n* (32–3, 35); so there is less uniformity in the contrastive behaviour of the *V̇*(:)-final lexical items than might appear at first sight.

3. *Hari* (1979)

With four contour-pitch pairs (table 6) instead of the three to be found in the Chang and Shefts and the Hu analyses, Hari (1979) is much more complex than they. This analysis differs from them, appreciably, in not having the near-complementary distribution that is clearly to be seen in them.

Table 6: *Relations of phonological finals to orthographic finals*

	V	<i>b(s)</i>	<i>d</i>	<i>g(s)</i>	<i>s</i>	<i>ms</i>	<i>ngs</i>	<i>ng</i>	<i>l</i>	<i>r</i>	<i>n</i>	<i>m</i>
lower: rise:	V	p	V	k	VV	m		ŋ	V	r	n	m
upper: fall:	V	p		k, ʔ	VV	m	ŋ	ŋ	V, ʔ	r	n	m
lower: rise-fall:			ʔ	(k), ʔ	ʔ							
upper: fall:			ʔ	k	ʔ							
lower: level-fall:			ʔ	(k), ʔ	ʔ				ʔ			
upper: level-fall:			ʔ	(k), ʔ	ʔ				ʔ			
lower: level:	V	p	V	k	V	m	ŋ	ŋ	V r, VV		n	m
upper: level:	V	p		k		m		ŋ V, VV		r	n	m

In addition to the relative complexity of Hari (1979) as shown in table 6, which illustrates the relations of syllable-final phonemes with the syllable-final symbols of Tibetan orthography, and is comparable, therefore, with tables 4 and 5, showing corresponding relations for Chang and Shefts (1964) and for Hu (1982), there is alternation in the pitch contours of certain types of lexical item in accordance with variation in the phonetic form of that lexical item. This variation, at the phonetic level, affects lexical items spelt with *-V*, *-d*, *-g(s)*, *-s*, *-l*, and *-r* such as *ske* 'neck', *phud* 'a little food offering', *thugs* 'mind', *rmos* 'plough', *'jal* 'measure' (13–14), and *skor* 'turn' (v. tr.) (85); e.g.

<i>-g(s)</i>	<i>gdugs</i> umbrella	1	[-VK ⁷ /]; [-V ⁷ ? ^];	<i>'dug</i> be	2	[-VK ⁷ -]; [-V ⁷ ? ^]
	<i>dbyug</i> throw	3	[-VK ⁷ \]; [-V ⁷ ? \];	<i>dbyug</i> swing	4	[-VK ⁷ -]; [-V ⁷ ? ^]
<i>-r</i>	<i>sgyur</i> change	1	[-Vr /]; [-V: /];	<i>zur</i> edge	2	[-Vr /]; [-V: /]
	<i>gtor</i> sprinkle	3	[-Vr \]; [-V: \];	<i>skor</i> turn	4	[-Vr -]; [-V: ^]

V. Spelling style pronunciation of Written Tibetan

For all three of my sources in section (IV) above (tables 4, 5, and 6), I have emphasized the connexion between the distinctions in contour pitch to be found in them and corresponding categories of the Tibetan orthography, distinguishing, for this purpose, final *ms* from final *m*, and also final *ngs* from final *ng*. My aim in making this association has been to try and account for the differences in contour pitch within each of my sources by ascribing them to the influence of the traditional Tibetan spelling style of pronunciation for Written Tibetan syllables. It is only to be expected, it seems to me, that literate Tibetan informants should extend their knowledge of this pronunciation style to citation forms and syllable isolates that are generally required of them in the course of research into the phonetics and phonology of Spoken Tibetan. This citation-form procedure has no precedent in Tibetan orthographic teaching, and is therefore difficult to accommodate to an old, and enduring, orthographic tradition regarded by literate Tibetans as the foundation, and proof, of their claim to literacy. Accordingly, I hold the traditional Tibetan spelling style of pronunciation responsible for the differences in contour pitch to be seen in tables 4 and 5, with the three sets of pairs of contour-pitch features, each pair comprising a high-register member and a low-register member, for Chang and Shefts (1964) and Hu (1982), and four such sets of pairs in table 6, for Hari (1979). It is important to note that the three pairs of contour pitches distinguished in each of the former two sources come very close to being in complementary distribution by type of orthographic final, and also that they are close enough to each other phonetically to suggest a common tradition; Hari's informant, Mrs. Tashi Kyi, on the other hand, was from Amdo, in the extreme north east of the Tibetan-speaking area, where the tradition may well have been different (cf. Sprigg, 1979, p. 53, n. 3 on reading-style pronunciation in the Golok dialect).

Probably the earliest reference to what I have termed the spelling-style pronunciation is in Bell (1905/1939): 'the Tibetan method of spelling words should be acquired, as the teacher, in common with all Tibetans, will use it'. Bell's examples include:

'*sgang*; *sa-ga-ta*, *ga*, *gang-nga*, *gang*' (xxxiv/17) and '*gnyen*; *k'a-wo-nya-deng-bu*, *nye*, *nyen-na*, *nyen*' (xxxv/18). A slightly different, and shorter, form is to be found in Gould and Richardson (1949); e.g.

'*sgang sa-gapta*, *ga-nga*, *gang*' (B 23),

'*gnyen k'ao nya-dengbu*, *nyen-na*, *nyen*' (B 4).

My informant Rinzin Wangpo preferred the latter of the two forms; and that is the form of spelling-style pronunciation that I have described, briefly, but in depth, in Sprigg (1968: 15–26). In table 7 I have given a pair of examples of his pronunciation for each final, one for high-register monosyllables, and one for low-register, including contour-pitch features (level, rising, falling, rising-falling) and register-pitch features (high, low) arranged by type of syllable final.

Table 7: Spelling-style pronunciation of Written Tibetan monosyllables

-V	<i>lce</i>	[ladzapta t̥a d̪iŋbu t̥e:]	[˨˨˨˨ ˨˨˨˨ ˨˨˨˨]
	<i>mda'</i>	[m̪aʊ nda: a: nda:]	[˨˨˨˨ ˨˨˨˨ ˨˨˨˨]
-d	<i>brnyed</i>	[phaʊ ɲapata ɲa d̪iŋbu ɲe: tha ɲet/?]	[˨˨˨˨ ˨˨˨˨ ˨˨˨˨ ˨˨˨˨ ˨˨˨˨]
	<i>bod</i>	[pha naʊ phø: tha: phøt/?]	[˨˨˨˨ ˨˨˨˨ ˨˨˨˨]
-g	<i>dmag</i>	[th̪aʊ ma: kha: mak]	[˨˨˨˨ ˨˨˨˨ ˨˨˨˨]
	<i>yig</i>	[ja k̪jiku j̪ik kha: j̪ik]	[˨˨˨˨ ˨˨˨˨ ˨˨˨˨]

-l	<i>shel</i>	[ʧa dɿŋbu ʧel la ʧel]	[˘ ˘ ˘ ˘ ˘]
	<i>mjal</i>	[maʊ ndza: la ndzɛl]	[˘ ˘ ˘ ˘]
-r	<i>bcar</i>	[phau tɕa: ɿa tɕar]	[˘ ˘ ˘ ˘]
	<i>'byor</i>	[ʌu mba jata ndza naʊ ndzɔɿ ɿa ndzɔɿ]	[˘ ˘ ˘ ˘ ˘ ˘ ˘ ˘ ˘ ˘ ˘ ˘]
-s	<i>chos</i>	[tɕha naʊ tɕhø: sa: tɕhøʔ/tɕhø:]	[˘ ˘ ˘ ˘ ˘]
	<i>'bras</i>	[ʌu mba ɿata ndɿa: sa: ndɿɛʔ/ndɿɛ:	[˘ ˘ ˘ ˘ ˘ ˘]
-b	<i>khab</i>	[kha: pha khɿp]	[˘ ˘]
	<i>leb</i>	[la (n)dɿŋbu lɛp pha lɛp]	[˘ ˘ ˘ ˘]
-n	<i>chen</i>	[tɕha dɿŋbu tɕhen na tɕhen]	[˘ ˘ ˘ ˘]
	<i>bdun</i>	[phau da ɕɿbgju dyn na dyn]	[˘ ˘ ˘ ˘ ˘]
-ng	<i>chung</i>	[tɕha ɕɿbgju tɕhuŋ ɱa tɕhuŋ]	[˘ ˘ ˘ ˘]
	<i>bong</i>	[pha naʊ phoŋ ɱa phoŋ]	[˘ ˘ ˘ ˘]
-m	<i>gtam</i>	[khaʊ ta: ma tam]	[˘ ˘ ˘]
	<i>gzim</i>	[khaʊ sa kɿiku sim ma sim]	[˘ ˘ ˘ ˘ ˘]

If compared with the pitch patterns given for Chang and Shefts and for Hu, at (IV.B), the following differences will be seen in RW's usage:

Table 8: *Comparison with RW's usage*

i. -V	low	rise-fall	v. rise	
ii. -d, -g(s)	high	level	v. fall (fall/level for <i>gcig</i>)	
	-b(s)			
	low	rise	v. rise-fall	
iii. -l	high	level	v. level-fall (C. and S.)	
iv. -r	high	fall	v. level-fall (C. and S.)	
			level (Hu)	
	low	rise-fall	v. rise (C. and S.)	
			level-rise (Hu)	
v. -s	low	fall	v. rise-fall	
vi. -n, -ng, -m	high	fall	v. level-fall (C. and S.)	
			level (Hu)	
	low	fall	v. rise (C. and S.)	<i>bdun</i>
			level-rise (Hu)	
			v. rise-fall (C. and S.)	<i>gong</i>
			rise-fall (Hu)	
			v. rise-fall (C. and S.)	<i>gzim</i>
			rise-fall (Hu);	<i>'gam</i>

e.g. (i) *mda* 'arrow' v. *rdo* 'stone', *nga* 'I'; (ii) high, *brnyed* 'find', *dmag* 'war', *khab* 'needle' v. *skad* 'voice', *g.yag* 'yak', *khab* 'needle'; low, *bod* 'Tibet', *yig* 'letter', *leb* 'flat' v. *bod* 'Tibet', *gzig* 'leopard'; (iii) *shel* 'glass' v. *ngul* 'silver'; (iv) high, *bcar* 'visit' v. *shar* 'rise'; low, *'byor* 'receive' v. *mar* 'butter'; (v) *'bras* 'rice' v. *bris* 'write'; (vi) high, *chen* 'large', *chung* 'small' *gtam* 'story' v. *sman* 'medicine', *stong* 'empty', *gsum* 'three'; low, *bdun* 'seven', *bong* 'ass', *gzim* 'sleep' (hon.) v. *bdun* 'seven', *gong* 'price', *gzim* 'sleep' (hon.), *'gam* 'manger (qqch de sec)'.

The conclusions that I come to from considering the above differences are threefold: (i) the degree of uniformity in contour-pitch behaviour is only partial for my three sources compared in (III)–(IV) above, and even that degree would be reduced further, if the pitches I have noted from my own informant in spelling-style utterances were also to be brought into the comparison; (ii) consequently, it would be hazardous to assign a fixed pitch to each lexical

item in the way in which this is done for Chinese lexical items when read from characters, e.g. (i) *ma* 'mother', high and level; (ii) *ma* 'hemp', low and rising; (iii) *ma* 'horse', low and fall-rise; (iv) *ma* 'scold', high and falling (Ladefoged, 1971: 85); (iii) if, then, the contour pitch distinctions are denied a phonological function, as monosyllabic tones, their function can only be mnemonic, a means of assisting the memory when chanting the monosyllables, after naming the various orthographic components in their proper order.⁹

VI. *Contour-pitch features abstracted from the phonetic form of lexical items in Lhasa Tibetan spoken sentences*

The most reliable way to evade undue influence from the Spelling-style pronunciation on contour-pitch features of lexical items when analysing the Tibetan of Lhasa and other tonal dialects of spoken Tibetan, and so avoid the possibility of introducing distortions into those tonal analyses, is, to my mind, to ignore citation forms altogether and to abstract the pitch features of the lexical items in question directly from the phonetic forms in which those lexical items occur in spoken sentences in ordinary Tibetan conversational utterances. The variations in contour pitch of a given lexical item can be more clearly displayed if the verbal phrase is treated separately, as at (A) below, from the nominal phrase, at (B), each with its sub-category of particle.

A. *Verb words and verb-and-particle words*

Similarly, it makes for a clearer presentation if verb and verb-and-particle words belonging to what I have termed the tone-1 class, based on upper-range pitch features, are treated separately, as at (1) below, from tone-2 words, based on the lower range, at (2). Verb lexical items that occur in the tone-1 word can be classified, through this relationship, as tone-1-word, or tone-1, lexical items; and those with the tone-2-word relationship as tone-2-word, or tone-2, lexical items. The former, as one would expect, generally draw on the upper range of pitch features, but on the lower range in the circumstances described at (3) below, pitch features of words following the emphasized word in emphatic sentences; while the latter are confined to the lower range.

⁹ Mazaudon and Michailovsky (1989), however, adduces acoustic evidence to support a partially phonological role for contour pitch in one of the modern spoken Tibetan dialects, Dzongkha, the national language of Bhutan, using both word isolates and, with far greater force in view of my following section (VI. Contour-pitch features abstracted from the phonetic form of lexical items in Lhasa Tibetan spoken sentences), short sentences; e.g. 'tsham' in *mtshams gnyis yod* 'there are 2 boundaries' and 'tsham' in *tsha-mo gnyis yod* 'there are 2 nieces' (120). I have used the word *partial* in describing this analysis because, as with Chang and Shefts (1964) and Hu (1982) (IV.B.1-2), but not Hari (1979), the contour-pitch phonological opposition is to be found 'on some syllable types only': 'short open syllables, and monosyllables in final -n, --- have no distinctive contour' (p. 118); furthermore, 'it is not clear that there is a tone contour opposition on the Paro dialect' (118); consequently, 'the contour opposition is clearest on long open syllables'; and 'before the finals -p and -m the contours were most difficult to record consistently' (118). As far as its citation forms are concerned, my comments on Chang and Shefts (1964) and Hu (1982) apply to Mazaudon and Michailovsky (1989) too, namely, that the phonological significance of contour pitch in citation is apparent only, and is rather to be ascribed to the influence of spelling-style pronunciation, which Dzongkha-speakers have in common with literate Tibetans (for Dzongkha, though, the contour that is associated with -s and -g is 'level' (Michailovsky, 1989: 299), entirely at variance with Chang and Shefts (1964) and Hu (1982), tables 4 and 5; the 'falling contour' of Dzongkha monosyllables spelt with 'liquid finals -r -l' (Mazaudon and Michailovsky, 1989: 127) also contrasts sharply with Chang and Shefts and with Hu, which have rise for low register, and level or level-fall for high register.

1. *Tone-1 words; high-register verb lexical item*

Verb lexical items having the high-register pitch appropriate to their membership of tone-1 words have both level and falling contour pitches; but these two types of pitch feature are complementarily distributed, in something like the way in which allotones are grouped into a toneme in a phonemic analysis. The factors controlling the choice of contour for the verb lexical item are partly intonational; but the main factor is lexical: the class of verb particle immediately following the verb within the word. Verbal particles can be divided into two classes: (i) those which are associated with the level-contour alternative pitch as the pitch of the preceding verb lexical item, and (ii) those which are associated with the falling-contour alternative for that preceding lexical item. The former class of particle has a high-register pitch, either high and level or high and falling, to match the level contour of the verb lexical item immediately preceding it within the word; and the latter class has a low-register pitch, either low and level or low and rising, to match the low register reached by the falling contour of the verb lexical item, falling from the upper range to the lower.

In table 9 the appropriate pitch patterns for the examples contained in them are shown at the head of each of the six columns. In the two left-hand columns, columns one and two, that pattern is monosyllabic, and applies only to the verb lexical item; but in columns three–six, the four right-hand columns, the pattern is polysyllabic, and applies to both the verb component and the particle component, there being only one particle in columns three and four but two in columns five and six.

To the left of the six columns of examples I have symbolized the ten finals of Tibetan orthography, from -V, summarizing -a, -i, -u, -e, -o, and -, to -m. In the -V, section I have included all forms of V-final-root lexical items, not only those which have a final vowel, e.g. *lta* 'look', *phyé* 'open' but also, where appropriate, their imperative forms in -s, e.g. *ltos* 'look!' (col. 2), and their past-tense forms in -s, e.g. *bltas*, *skyes*, *brkus*, *brkos*, 'looked', 'grew', 'stole', 'dug'; and in the -g, -b, and -m sections I have included -gs, -bs, and -ms respectively.

The column of orthographic finals in table 9 is fundamental to my purpose of proving that the set of six pitch patterns that I have given at the head of my examples columns applies to all tone-1 verb and verb-and-particle words irrespective of differences in the orthographic syllable final of the verb lexical item, -V, -d, -g(s), etc. Consequently, the relationship of the contour-pitch features of the verb lexical item comprised in these words, level contour and falling contour, in complementary distribution by intonation and by type of particle, is absolutely different from the relationship shown in tables 4, 5, 6, and 7 above, where the fall and the level-fall contour pitches (table 4), the narrow-fall, wide-fall, and level pitches (table 5), the fall, level-fall, and level pitches (table 6), and the fall and level pitches (table 7) are specifically related to differences in the orthographic final (Chang and Shefts, 1964, Hu, 1982, Hari, 1979; to which may be added Mazaudon and Michailovsky, 1989, and Michailovsky, 1989, for the Dzongkha dialect, cf. note 9); indeed, for the most part, those contour pitches are complementarily distributed by type of orthographic final. No such association of contour pitch with orthographic differences is to be found in the spoken sentences of the Lhasa dialect; hence it is to an extension of this relationship of contour pitch with type of orthographic final that I attribute contour-pitch differences in the citation forms of those authorities.

I have managed to supply examples to support this contention of mine for

every place in table 9 except the *-d* and the *-m* places in the left-hand column, column 1. This is because I had limited myself in choosing my examples to my phonetic transcriptions of spoken Tibetan sentences in Bell (1905/1939), Gould and Richardson (1943), and Gould and Richardson (1949), adapting the sentences, where necessary, to the usage of my informant RW. Unfortunately, I could find no suitable examples for these two places in the table in that corpus of material, large though it is.

Also, lacking a suitable verb example I have been obliged to draw on the nominal phrase for *lta-ya-gi* 'for looking at', the first example in the left-hand column; while *lta* is indeed a verb lexical item, it has been nominalized here by the nominalizing particle *ya* (better spelt *yag*), corresponding to '-ing', with which has been collocated the nominal-phrase particle *-gi* (possessive particle) 'of', 'for'.

Table 9: *Contour pitch of tone-1 verb and verb-and-particle words*

	[]	[ˊ]	[ˋ]	[ˊˋ]	[ˋˋˊ]	[ˋˋˋ]
-V	<i>lta-ya-gi</i>	<i>ltos</i>	<i>bltas-na</i>	<i>skyes-yong</i>	<i>lta-gi-'dug</i>	<i>brkus-pa-red</i>
		<i>phye</i>		<i>phye-yod</i>	<i>skye-gi-red</i>	<i>brkos-pa-red</i>
-d		<i>mchod-dgos</i>	<i>bshad-na</i>	<i>sprad-nas</i>	<i>sprad-kyi-yin</i>	<i>khrid-pa-red</i>
		<i>bshad dgos-</i>		<i>bshad-song</i>	<i>mchod-kyi-yin</i>	<i>bshad-pa-red</i>
-g	<i>klog shes-</i>	<i>klog shes-</i>	<i>klog-na</i>	<i>chag-bzhag</i>	<i>klog-gi-'dug</i>	<i>chag-pa-red</i>
		<i>blug</i>	<i>blug-na</i>	<i>ltogs-byung</i>	<i>ltogs-kyi-'dug</i>	<i>khog-pa-red</i>
-l	<i>bkal tshar-</i>	<i>skol</i>	<i>bshal-na</i>	<i>bshal-song</i>	<i>bshal-gyi-'dug</i>	<i>bshal-ba-red</i>
		<i>phul-dgos</i>	<i>phul-na</i>	<i>mnyel-bzhag</i>	<i>'khol-gyi-'dug</i>	<i>phul-ba-red</i>
-r	<i>khur thub</i>	<i>ster</i>	<i>ster-na</i>	<i>ster-ras</i>	<i>khyer-gyi-'dug</i>	<i>khyer-ba-red</i>
	<i>khyer thub</i>	<i>tshar dgos-</i>	<i>tshar-na</i>	<i>tshar-'dug</i>	<i>bcar-gyi-yin</i>	<i>shar-ba-red</i>
-s	<i>btsos-a</i>	<i>btsos</i>	<i>rtsis-na</i>	<i>thas-ka</i>	<i>thas-kyi-yin-pa</i>	<i>rtsis-pa-red</i>
		<i>thas dgos</i>	<i>spos-na</i>	<i>thas-pa</i>	<i>rtsis-kyi-red</i>	<i>spos-pa-red</i>
-b	<i>bslab chog</i>	<i>sleb 'gro-</i>	<i>bslabs-na</i>	<i>bslebs-yong</i>	<i>bslab-kyi-yin</i>	<i>bslabs-pa-red</i>
	<i>phebs tshar-</i>	<i>phebs</i>	<i>phebs-na</i>	<i>phebs-pa</i>	<i>phebs-kyi-'dug</i>	<i>phebs-pa-yod</i>
-n	<i>phyin tshar-</i>	<i>then</i>	<i>thon-na</i>	<i>phyin-pa</i>	<i>then-gyi-yin</i>	<i>thon-pa-red</i>
		<i>thon</i>	<i>phan-na</i>	<i>phan-yong</i>	<i>shes-kyi-'dug¹⁰</i>	<i>shes-pa-red</i>
-ng	<i>gnang mkhyen-</i>	<i>gnang dgos</i>	<i>gnang-na</i>	<i>gnang-ga</i>	<i>btang-gi-'dug</i>	<i>gnang-ba-red</i>
		<i>gtong</i>	<i>btang-na</i>	<i>btang-yong</i>	<i>'thung-gi-yin</i>	<i>btang-ba-yin</i>
-m		<i>shum</i>	<i>shums-na</i>	<i>bcum-bzhag</i>	<i>skom-gyi-'dug</i>	<i>shums-pa-red</i>
		<i>tshems</i>	<i>phams-na</i>	<i>pham-song</i>	<i>pham-gyi-'dug</i>	<i>phams-pa-red</i>

(a) *The two left-hand columns, one and two*

In the two left-hand columns I am concerned with the contour pitch of the verb lexical item alone; I have therefore chosen monosyllabic words where possible. That is why there are so many imperative forms in column two, 11 examples, in fact. Earlier in this section (1) I had mentioned intonation as a factor in the choice of contour pitch: the appropriate contour for imperative clauses is the falling contour; and in these 11 examples the verb is final in the sentence (and, therefore, without particle); e.g. *ltos* 'look', *phye* 'open it' *btsos* 'cook it'. If, however, the imperative particle *a* follows the verb, the verb lexical item has its level-contour alternative; and it is the particle lexical item that receives the fall in pitch appropriate to an imperative clause; e.g. *btsos-a* 'cook it, then' (familiar imperative). The contour pitch of verb lexical items in imperative clauses, then, alternates between the falling for sentence-final position and its level alternative for use in non-sentence-final position in colligation with such imperative particles as *a*; hence it is important to note that, even in an imperative clause, the contour pitch of the verb lexical item is not a fixed pitch: both the falling-pitch and the level-pitch

¹⁰ The verb-and-particle word *shes-kyi-'dug* has been included in the *-n* category rather than the *-s* because in Lhasa Tibetan the verb behaves phonetically and phonologically as though it were written *shen.

alternatives are appropriate to it, under alternative conditions (the pitch of the imperative particle *a*, on the other hand, is fixed: it can be classified as a falling-pitch particle).

Monosyllabic verb examples are not so easy to come by apart from imperative sentences; but another source of these is the type of verbal phrase in which there is a main verb colligated with an auxiliary verb, such as (column one) *shes*, *tshar*, *thub*, *chog*, and *mkhyen* (know how to, finish, be able to, be allowed to, know how to (hon.)). In this column the main-verb lexical item is shown to have a level contour when the auxiliary verb has the high register; e.g. *klog shes-kyi-yod* 'I know how to read', *bkal tshar-song-ngas* 'did you finish loading up?'

If, however, the auxiliary verb belongs to the low-register category, e.g. (column two) *dgos*, 'gro (have to, be going to), then the main verb has the falling contour, which serves to bring the pitch down from the upper to the lower register that is appropriate to the auxiliary verb lexical item; e.g. *bshad dgos-kyi-red* 'you will have to explain', *sleb 'gro-'dug* 'he has nearly reached', *mchod dgos* 'you must drink/have some' (hon.).

It will be observed that one example, *klog shes-*, appears in both columns, one and two; so *klog* in the phrase in full, *klog shes-kyi-yod*, can have either contour, level or falling. The difference between the two pitch patterns I take to be one of emphasis: the pitch pattern shown in column two requires prominence for the word *read*: 'I know how to *read* (but not how to write or speak)'. In lexically identical pairs of examples such as this the alternative contours are complementarily distributed by style: (i) emphatic intonation (column two) versus (ii) non-emphatic intonation (column one). The difference in pitch contour for the main-verb word *klog* can be matched by a difference in pitch pattern for the following word, the auxiliary-verb-and-particle word *shes-kyi-yod*, with low-register pitch versus high-register pitch: (i) [˘ . . .]; (ii) [˘ ˘ ˘ ˘]; so emphasis conveyed by pitch contour in the first word of the phrase, *klog*, can be reinforced by pitch register in the second word, *shes-kyi-yod*, (i) low register versus (ii) high register.

(b) *The two middle columns, three and four*

In the two middle columns, three and four, the words chosen as examples are disyllabic, and can be analysed grammatically into verb and particle.

In column three the particle category is represented by the conditional-clause particle *na*, which has high register and level contour pitch. Matching this particle the verb lexical item has its level-contour alternative; e.g. *bltas-na* 'if you look', *klog-na* 'if you read', *bshad-na* 'if you explain'. The appropriate form of the verb for the V-final category of verb when colligated with this particle is the *-s* form (for those V-root verbs which have a *-s* form); hence *bltas-na* not **lta-na* (cf. (c) below) or the imperative form, in *-os*, as in *ltos* at (a) above.

The *-s* form is also the form that is appropriate to the V-final category of verb when colligated with the class of particle exemplified in column four, e.g. *skyes-yong* 'would grow'. Not a few of these particles are past-tense, e.g. *nas*, *song*, *byung*, (*r*)*as*, and *pa*, but not *yong*, *yod*, *bzhag*, and *kalga*. All these particle lexical items have the low register pitch with level contour except that *nas*, which is commonly clause-final but not sentence-final, can have a rising contour, especially when preceding a pause; e.g. *bshad-song* 'explained', *sprad-nas* 'having given', *phye-yod* '(I) have opened', *bslebs-yong* '(they) would arrive'. Forms of the verb *lta/bltas/ltos* 'look', already exemplified by *lta-ya-gi*, *ltos*, and *bltas-na* in columns one, two, and three above, could have

been exemplified in column four by words such as *bltas-nas* 'having looked', *bltas-yod* '(I) have looked', and *bltas-yong* 'would look', if I had found them in my corpus of examples.

The purpose of my examples in columns three and four is to prove my claim that the contour pitches level and falling are alternative for each verb lexical item, in complementary distribution, here, by class of particle, and predictable from those two classes.

(c) *The two right-hand columns, five and six*

The words in the two right-hand columns are trisyllabic except for the tetrasyllabic interrogative word *thas-kyi-yin-pa* '(where) shall you go?' (hon.). Those in column five all contain the particle *gi/kyi/gyi*, which is high-register, like *ya* and *a* in (a) above, and *na* in (b); consequently, the verb lexical item has its level alternative as its matching contour; e.g. *lta-gi-'dug* 'he looks', *skye-gi-red* 'they will grow', *sprad-kyi-yin* 'I shall give', *klog-gi-'dug* 'he reads'. The V-final class of verb has the final vowel in its orthographic form here, e.g. the *-a* of *lta-gi-'dug* and the *-e* of *skye-gi-red* 'it will grow'.

In column six it is the past-tense particle *pa/ba* that immediately follows the verb. This is a low-register particle, like the *nas*, *song*, *yong*, and *yod* particles in (b) above, with level contour; so it is not surprising that for the verb lexical item the appropriate member of the pair of contour pitches is the falling; e.g. *bshad-pa-red* 'he explained', *brkus-pa-red* 'he stole'.

For the V-final class of verb it is the *-s* form that is appropriate here; so, if it had occurred in my corpus, *bltas-pa-red* 'he looked' could have been included here, to contrast with the example *lta-gi-'dug* 'he looks' in column five, and to match *skyes-yong* in (b) above, or forms such as *bltas-nas* 'having looked', *bltas-yod* '(I) have looked', and *bltas-yong* '(they) would look'.

The final particles of the trisyllabic words in this section, *'dug*, *red*, *yin*, and *yod*, alternate in contour pitch between falling, in column five, and level, in column six, with matching register-pitch features, high-passing to low in column five, but only low in column six; they too, therefore, have not a fixed contour pitch or even a fixed register pitch. In the latter respect these particle lexical items differ from homographic verb-complement lexical items *'dug*, *red*, *yin*, and *yod* of columns one and two in table 10 below, which are confined to the low register.

2. *Tone-2 words; low-register verb lexical item*

In table 10 below I have given a representative set of examples from tone-2 words, the verb lexical item of which has low register, using the same particles as have already appeared in table 9, for easy comparison with that table, together with half a dozen more particles. Comparison with table 9 will show that even though there is a regular contrast in register pitch between the verb lexical items shown in this table and the verb lexical items of table 9, low register versus high register, yet the contour pitch patterns remain the same (reading from left to right):

col. 1	col. 2	col. 3	col. 4	col. 5	col. 6
level	falling	level	falling	level	falling.

The pitch of the classes of particle lexical item immediately following the verb also remains the same as in table 9:

col. 3	col. 4	col. 5	col. 6
high	low	high	low.

The main differences between table 10 and table 9 are presented, as before, with reference to its three pairs of columns.

(a) *The two left-hand columns, one and two*

As in table 9, at (1) above, imperative forms are shown here too, in column two, to have the falling contour; thus, the main-verb lexical item 'gro 'go' has the falling pitch contour in the imperative sentence while the self-same lexical item, and others belonging to this category, have the level contour when colligated with the auxiliary verb; e.g. *ma* 'gro 'do not go' versus *gro thub-kyi-red* 'you will be able to go'.

Table 10: *Contour pitch of tone-2 verb and verb-and-particle words*

	[-]	[˩]	[-˩]	[˩˩]	[-˩˩]	[˩˩˩]
-V	'gro thub- byas tshar-	(ma) 'gro bzos zhu dgos	bzos-na zhu-rgyu	bzos-nas zhus-'dug	'gro-gi-yin zhu-gi-yin bzo-gi-'dug	bzos-pa-red zhus-pa-red
-d	(a)-yod red-(pas)	yod sdod bsdad dgos-	yod-na bsdad-dus bsdad-na	yod-pa bsdad-nas	yod-kyi-red bsdad-kyi-yin	yod-pa-red bsdad-pa-yin
-g	'dug-(gas) log tshar- bzhugs-(a)	(mi)-'dug log (shog) bzhugs	gzigs-na bzhugs-mkhan	log-gyis bzhugs-'dug gzigs-myong-	log-gi-yin bzhugs-kyi-'dug	log-pa-red bzhugs-pa-red
-l	mjal chog-	mjal nyol	'gal-na brgyal-na	dal-ba'i mjal-ma-(byung-)	nyal-gyi-yin mjal-gyi-yin	nyal-ba-yin mjal-ba-yin
-r		sdur bzhor/bzhar	zer-na bzhar-na	nor-song-na 'byor-byung-	zer-gyi-'dug 'byor-gyi-red	zer-ba-red nor-ba-red
-s	bris mkhyen-	dris shog bzhes	dris-na bris-na	dris-song bris-song	'bzhes-kyi-yod- 'os-kyi-ma-red	dris-pa-red bris-pa-red
-b	(shog) lab	lab rgyab	lab-tsang rgyab-dus	labs-nas rgyab-song	lab-kyi-yin rgyab-kyi-yin	labs-pa-red rgyabs-pa-red
-n	(a)-yin len chog-	yin len shog	yin-tsang dren-na	yin-pa yin-na	gon-gyi-red len-gyi-red	gon-pa-red len-pa-red
-ng	yong chog- byung-(ngas)	(ma) yong (lags) yong	langs-na brdung-dus	langs-song brdungs-song	yong-gi-yin ldang-gi-red	yong-ba-yin byung-ba-red
-m	zin chog- gzim bzhugs-	zin-(shig) gzim	zin-na gzim-na	zin-song gzim-nas	zin-gyi-'dug gzim-gyi-'dug	zin-pa-red ¹¹ gzim-pa-red

A feature of this table not to be found in table 9 is that it contains examples of members of the verb complement category, *yod*, *red*, 'dug', *yin*, *byung*, and *yong*; in sentence-final monosyllabic words these lexical items regularly have the falling contour; e.g. *lags yod* 'I have', *lags red* 'it is', *lags 'dug* 'he has' (polite answer), [-˩] (column two); but in the disyllables *a-yod* 'I doubt whether I have' and *a-yin* 'I doubt whether I am' [˩˩] (column one) it is the preceding particle, *a*, that has a fall in pitch (high register), while *yod* and *yin* have the level contour. In interrogative sentences (column one) it is the interrogative particle that is characterized by the falling contour, with the verb lexical item having the level contour; e.g. *yod-pas* 'have you', *red-pas* 'is it', 'dug-gas' 'are there'.

With the negative forms *ma-red* 'it is not' and *mi-'dug* 'there is not' both the level contour and the falling contour are possible for the verb lexical item [˩˩] and [-˩], depending on style, the former being non-emphatic and the latter (column two) being emphatic. Clearly, these verb-complement lexical items are far from having a fixed contour pitch; only the register pitch is constant, in the lower range (the negative-particle lexical item *ma/mi* also alternates; but the conditions are the reverse of those to be observed for the verb-complement lexical item).

¹¹ *zin* 'catch' has been included in the *-m* category here because its pronunciation in Lhasa Tibetan is with a final (voiced) bilabial nasal, as though written *zim*.

In the *-b* section the imperative form *lab* 'say' occurs twice: in column one with the level contour, and in column two with the falling contour; e.g. (col. 1) *lam-sang shog lab* 'say "come at once"'. The first of the two imperative forms in this sentence, *shog*, has the falling contour, while the second has the level, [˩ .]. This same contour-pitch pattern, falling followed by level, [˩ .], also applies to such double-imperative phrases as *log shog* 'come back', *dris shog*, 'come and ask', *len shog* 'fetch it', with the important difference that in these three phrases it is *shog* that is final in the sentence, and has the level contour, together with low register, [˩ .].

(b) *The two middle columns, three and four*

In table 9 the only particle in column three was *na*, the conditional-clause particle; this particle appears again in column three of table 10, with the same high and level pitch; but it is joined here by *rgyu*, *dus*, *mkhan*, and *tsang*, of which two, *dus* and *tsang*, are clause-final, and also temporal and causal respectively. They could, of course, have equally well appeared in table 9, had they not been lacking from my corpus of example sentences.

While dealing with (1.c) above I classified *gi/gyi/kyi* as a high-register particle; it has, indeed, high, and level, pitch in all the trisyllabic words containing it in column five there, and the same is true of all the trisyllabic examples in (c) below, column five; but it has low, and level, pitch when it occurs in sentence-final position, as it does in the *g*-final example *log-gyi*s of column four here; so its classification as *high-register* must be so defined as to accommodate a low-register pitch possibility when sentence-final.

In contrast with the confirmation sub-category of interrogative phrase, e.g. *red-pas* 'is it', *dug-gas* 'are there', and with *a-yin* 'I doubt whether I am', of column one, the information sub-category of interrogative phrase, e.g. *yod-pa* and *yin-pa*, in column four, show the falling contour for the verb lexical item, not the particle, as in *ca-lag tshong-rgyu ga-re yod-pa* 'what things have you for sale', and *dgung-lo ga-tshod yin-pa* 'how old are you'.¹² This same pattern also applies to words containing the interrogative particle *na*, as in *dgung-lo ga-tshod yin-na* 'what is his age, I wonder'. Such sentence-final words as these are thereby distinguished from homographs containing the conditional particle *na*, as in *yin-na* 'if I am', 'if it is', *yod-na* 'if I have', 'if there is', with the rising pattern shown in column three for *bzos-na* and *yod-na* and other such examples, the appropriate pitch pattern for ending a clause that is not sentence-final.

The pitch contour of the members of the verb-complement sub-category of verb is, then, not fixed but alternating between level (columns one and three) and falling (columns two and four) as a function of grammatical differences; while the pitch of the particles *na* is fixed, the interrogative particle *na* being low-register and the conditional particle *na* being high-register.

(c) *The two right-hand columns, five and six*

These two columns contain examples of trisyllabic tone-2 words; they contrast with the tone-1 words shown in (1.c) above. For the present purpose the

¹² Though spelt the same as *yod-pa* and *yin-pa*, verb and nominalizing particle, 'to have' or 'having' and 'to be' or 'being' respectively, and sharing their pitch pattern with them, the sentence-final *yod-pa* and *yin-pa* shown here, analysable into verb and interrogative particle, have a different pronunciation for the particle lexical item, [ba] for the latter as opposed to [bə] for the former. The interrogative particle *na* is also somewhat similarly distinguished, by its vowel ([a]), from the conditional particle *na*, the vowel of which is [ə].

important thing to note is that they show a difference in register, but not in contour, for the first of the three syllables, which is that of the verb lexical item. In the examples in column five that lexical item has the level contour, with high register in the tone-1 examples but low register in the tone-2 words, while the examples in column six also show the register difference, with the contour pitch being the falling in both cases, high to low for the tone-1-word examples but mid to low for the tone-2-word.

3. *Emphatic-intonation sentences; words following the emphasized word*

The distinctive pitch patterns of tone-1 and tone-2 words are those given at (1) above for tone-1 words and at (2) above for tone-2 words; these two sets of patterns are the patterns appropriate to clauses and sentences for which the intonation is non-emphatic. Emphatic-intonation sentences are not uncommon in Lhasa Tibetan; and, since the verbal phrase comes at the end of clause and sentence, it is liable to be characterized by pitch features appropriate to words following an emphasized word in the sentence. All such words have low register pitch, much as they have in intonationally comparable sentences in English; and the register-pitch distinction does not apply to them; nor does the contour-pitch distinction.

I have dealt with these non-distinctive pitch patterns in detail elsewhere (Sprigg, 1954: 143–6, 150–2); but, for the sake of completeness, I will give a few examples here of (i) the non-emphatic with (ii) the post-emphatic pattern for (a) tone-1 words and (b) tone-2 words:

Table 11: *Verb words and emphatic and non-emphatic intonation*

a. Tone-1 word			
i.	<i>zhe-drag yag-po gngang-gi-red</i>	[- ' - - ' - ' \]	He will do it very well
ii.	<i>da-ga rang gngang-gi-red</i>	[- ' ^ - - -]	<i>Certainly</i> he will do it
i.	<i>ga-pa thad-pa-red</i>	[- ' \ . .]	Where did he go?
ii.	<i>khrom-la thad-pa-red</i>	[\ . . .]	He went <i>to the market</i>
b. Tone-2 word			
i.	<i>sba-bu lags-las snyan-gsang zhu-gi-yin</i>	[- ' \ . - ' - ' \]	I shall inform Babu La too
ii.	<i>'di-'dras zer-gyi-'dug</i>	[. ^ - - -]	<i>That</i> is what he says
i.	<i>lon-don-la yar bsdad-pa-yin</i>	[. \ . / \ .]	I stayed up in London
ii.	<i>zla-ba bzhi thag-tsam bsdad-pa-yin</i>	[- ' ^ - - - .]	I stayed about <i>four months!</i>

(-las, in (b.i), is a phonetic spelling for -la-yang).

B. *Noun words and noun-and-particle words*

To make my exposition less complex I have limited my examples in this section to words in which the noun component is monosyllabic.

1. *Tone-1 words; high-register noun lexical item*

Examples of all ten types of orthographic final have again been included, in the two tables in this section, tables 12 and 13, to show that orthographic differences do not upset my analysis of differences in contour pitch; the final, symbols have been placed in a column on the left-hand side of the table. Complete orthographic coverage guarantees that phonological coverage has also been complete, because the number of orthographic categories is greater than the number of phonological categories: finals in *d* and *s*, for example, are not distinguished in Lhasa Tibetan phonetics and phonology.

Table 12: *Contour pitch of tone-1 noun and noun-and-particle words*

	[˥˥ / ˥]	[˥˥ / ˥]	[˥˥ / ˥]	[˥˥ / ˥]	[˥˥ / ˥]
-V	rta khrid- sa rko-	rta dgos-kyi- gla ga-tshod	rta bzhon-nas gla ga-tshod	rta-la lga-la	sa tho-dman sa tho-los
-d	khyod su bcud chen-po	khyad yod-pa-	khyod ga-nas khyad yod-pa- gnyid yag-po	khyod-kyi phyed dang	khyod su skad shor- snyad skos- mig ltos mig bstan-
-g	gcig chag- gcig gtog-	gcig byas-na thag nye-po	gcig tshong- mig yag-po	gcig-las mig-gis	
-l	khral ha-cang khal tshang-ma	dngul 'dir dngul rdo-rje	tshal 'di	dngul-gyi dkyil-la gser-gyi skor-la	
-r				gnyis-la	
-s	gnyis khyer	gnyis dgos- gnyis gangs- chab bzhes	gnyis yod chos byed-ka		gnyis khag- chos klog-na
-b(s)	thabs mkhas-po stobs skye- sman sprad- skyon ston-	sman 'di skyon med-	krob gra thabs gang- sman 'di	khabs dang	
-n	khong phebs- chang 'thung-	khong ga-nas shing 'di	khong byung- khong ga-nas chang 'thung- chang mang-po	sman-gyi mtshan-la khong-gi gling-la	
-m(s)	gsum sprod khrom thag	gsum dgos- gnam grang-mo	gtam 'di sems dga'- gsum yin	gsum dang sems-la	

Unfortunately, the number of *r*-final lexical items in the corpus of sentence material to which I have restricted myself is small; so columns one, two, three, and five have had to be left without entries for this type of final. Regrettable though it is, I do not think that the fortuitous lack of lexical items of this type should affect the phonological generalizations that I shall be making in this section.

(a) *The two left-hand columns, one and two*

These two columns are meant to show that in the noun word the noun lexical item commonly has a level contour pitch regardless of what orthographic, or phonological, class that lexical item belongs to. This level pitch applies both when the following word begins with (i) a high register pitch, and level or falling contour, as in column one, or (ii) a low register pitch, and level or falling contour pitch, as in column two; e.g.

- | | | |
|-----|----------------------------------|---------------------------|
| i. | <i>rta khrid shog</i> | Bring my horse. |
| ii. | <i>rta dgos-kyi-ma-red</i> | I do not require a horse. |
| i. | <i>dkar-yol gnyis khyer shog</i> | bring two cups. |
| ii. | <i>yig-kog gnyis dgos-yod</i> | I want two envelopes. |
| i. | <i>khyod su yin-pa</i> | Who are you? |
| ii. | <i>khyad yod-pa-ma-red</i> | There is no difference. |

(b) *Columns three and five*

These two columns differ from the two columns dealt with in (a) above in having a falling-contour pitch for the (monosyllabic) noun lexical item regardless of whether the pitch of the following lexical item is low-register (and either level-contour or falling-contour), as in column three, or high-register (and either level-contour or falling-contour), as in column five. I take the falling contour of the noun lexical item in these two columns to be due to emphasis; e.g. (i. column three; ii. column five)

- i. *rta bzhon-nas yong-ba-yin* I came riding on a horse.¹³
- ii. *phag-ri'i sa tho-dman* The ground at Phari—what is its height?
ga-tshod red
- i. *khyod ga-nas yin-pa* Where are you from?
- ii. *khyod su yin-pa* Who are you? (cf. (a) above).
- i. *khyad yod-pa-ma-red* There is no difference. (cf. (a) above).
- i. *bu gsum dang bu-mo gnyis* I have three sons and two daughters.
yod
- ii. *'di gnyis khag-khag red* These two—they are different.

(c) Column four

This column contains (i) disyllabic words that can be analysed grammatically into noun and particle or (ii) two-word phrases analysable into noun and particle (*dang*). The particles that occur in the former of these two types are: *la*, *kyilgyilgil-'i*, *las*, *kyis/gyis/gis/-s*, *du/tu/ru/sul/-r*, and *nas*, to/at, of, than, by, on/to, from; only *dang* 'and'/' with ' occurs in the latter type; since its initial consonant is commonly voiceless ([tʰ]), I have had to treat it as being in interverbal junction with the preceding noun word, and, therefore, as a separate word; but both types have the same pitch pattern: falling contour for the noun lexical item; low register for the particle lexical item, and level contour, but commonly with a rising contour when followed by a pause; e.g.

- rta-la rtswa-chag yag-po ster* Give plenty of grass and grain to the horses.
- khyod-kyi ming-la ga-re* What is your name?
zer-gyi-yod
- nga-la gcig-las med* I have only one.
- mig[-gis] mthong-gi-'dug-gas* Can you see [with your eyes]?
- gnyis-ka mnyam-du khyer* We must take both with us.
dgos-kyi-red
- shar-nas nyi-ma shar-ba-red* The sun rises in the east.
- khab dang skud-pa khyer shog* Bring a needle and thread.

The only exceptions to this falling-and-level contour pattern are words containing one of the three particles *kyilgyilgil-'i*, *du/tu/ru/sul/-r*, and *kyis/gyis/gis/-s* where the noun component is V-final. This type of word is monosyllabic; the three particles are spelt with their *-i*, *-r*, and *-s* forms respectively; and the contour is level for the former two types of word, but falling for the third; e.g.

- level: *khang-pa 'di su'i red* Whose is this house?
- phar rgyugs* Go away.
- falling: *sus bzos-pa-red* Who made it?

2. Tone-2 words; low-register noun lexical item

Table 13: Contour pitch of tone-2 noun and noun-and-particle words

	[- _ / \] [/ _ / \]	[- ^ / \] [/ ^ / \]	[\ _]	[\ .]
-V	gra sgrig-yod- sgra red me 'bar-gyi-	bzhi shi-song me thong nga sang-nyin	gra sgrig- me yod-na sgra red	bzhi-la re-la

¹³ My informant added to the effect of emphasis here by uttering the last word of this sentence, *yong-ba-yin*, in a whisper. The use of whisper is particularly common among speakers of the Lhasa dialect as a gesture of respect, the final part of a sentence being especially liable to be whispered (and therefore with whisper pitch only, having none of the variations in register pitch and contour pitch that have been analysed elsewhere in this section (VI)).

-d	bod yag-po bod rang-la	bod spro-po 'od chen-po	bod lung-pa bod rang lug mang-po lug de-tsho	bod-las brgyad-la 'og-la ljags-la bal-gyi
-g(s)				
-l	bal bzhaq-sa drel 'gro-	bal khyer-		
-r	mar 'di gzer zhed-skrag	mar gsar-pa gur phub-nas	'dar rgyag-gi- mar 'di gros byed-kyi-	bar-du zur-nas rjes-la nas dang rgyab-la zhabs-nas
-s	dus red			
-b(s)		yob brlags-nas	rab cig rdzab zhed- skrag	
-n	rin ga-tshod gzhan ga-ga'i	gdan kha-shas bdun gnyis-kyi len gcig		don-la rgyun-du
-ng(s)	gong ga-tshod ming ga-re	gong chen-po zheng che-ba gang khyer	gangs 'dug-gas rdzong red	gangs-kyis ming-la
-m(s)	yum ga-pa sgam ga-pa nam langs-pa	lam thug- 'dam sha-stag	sgam de	sgam-gyi 'gram-la

Examples of all ten types of orthographic final have been included here, except that, unfortunately, my corpus of material did not include examples of -g(s), -l, -s, -b(s), and -n for all columns.

(a) *The two left-hand columns, one and two*

The purpose of these two columns is to show that the noun lexical item has either a level contour or a rising contour, and that this characteristic applies regardless of differences in the spelling of the final. The rising-pitch alternative is seldom to be heard with nouns of the V-final type, presumably because they are [CV], and therefore short; for the remaining orthographic types, which are either [-V:] or [-VC], the rising pitch is generally associated with a pause. Otherwise, both the level and the rising contour apply to these tone-2 words regardless of whether the following word begins with (i) low register pitch, and either level or falling contour, as in column one, or (ii) high register pitch, and with either level or falling contour, as in column two; e.g.

- | | | |
|-----|--|--|
| i. | <i>me 'bar-gyi-'dug-gas</i> ¹⁴ | Is the fire burning? |
| ii. | <i>lcags-thab-la me thong</i> | Light the stove. |
| i. | <i>lags bod rang-la gser dang
dngul rdo-sol 'don-rgyu
yong</i> | Yes, in Tibet itself gold,
silver, and coal, are to be had by mining. |
| ii. | <i>dbyar-ka bod spro-po red</i> | In summer Tibet is (more) pleasant. |
| i. | <i>mar 'di yag-po mi-'dug</i> | This butter is not good. |
| ii. | <i>mar gsar-pa khyer shog</i> | Bring fresh butter. |
| i. | <i>'di'i gong ga-tshod yin-pa</i> | What is the price of this one? |

¹⁴ In clause-initial position a monosyllabic tone-2 word is commonly slightly higher in pitch than the initial syllable of a following tone-2 word; so *me* here is slightly higher than *'bar*, and similarly for *lags* and *mar* in the examples in (i) below.

- | | | |
|-----|--|-----------------------------|
| ii. | <i>a-rtsi gong chen-po red</i> | Oh! it is a big price. |
| i. | <i>nga'i sgam ga-par yod</i> | Where is my box? |
| ii. | <i>sgam chen-po 'di steng-
-thog-la khyer rgyugs</i> | Take this big box upstairs. |

The rising contour pitch is peculiar to tone-2 words; but the level contour is common to both tone-2 and tone 1 words (cf. (1.a) above); and it is only register pitch that distinguishes them.

(b) *Column three*

The examples in column three differ from those in columns one and two through having a falling contour, from mid to low. I take the function of the falling contour to be one of emphasis, comparable to the falling contour, from high to low, for the tone-1-word examples at (1.b) above, and, therefore, to be an example of intonation in a stylistic use; e.g.

- | | |
|--------------------------------------|--|
| <i>me yod-na, du-ba thon-gyi-red</i> | If there is <i>fire</i> , smoke will come out. |
| <i>'di dung-chen-gyi sgra red</i> | It is <i>the sound of a trumpet</i> . |
| <i>bod lung-pa chen-po yong-ngas</i> | <i>Tibet</i> —is it a very large country? |
| <i>mar 'di yag-po mi-'dug</i> | This <i>butter</i> —it is not good. |
| <i>sgam de ljid thag-chod 'dug</i> | That <i>box</i> —it is <i>very heavy</i> . |

(c) *Column four*

This column contains words that are analysable grammatically into noun and particle, like the tone-1 words in (1.c) above; it also resembles that earlier section in having a falling contour for the noun lexical item followed by a level contour for the particle lexical item (but rising if followed by a pause). The particles exemplified in this column are those which have already appeared, in tone-1 words, in (1.c) above, from which the words *ming-la* and *nga-la* could be borrowed for use here; cf. also:

- | | |
|---|------------------------------------|
| <i>rgya-gar lung-pa bod-las</i> | Is India more pleasant than Tibet? |
| <i>skyid-pa yod-pa-red-pas</i> | |
| <i>'di bal-gyi lag-shubs red</i> | These gloves are of wool. |
| <i>gangs-kyis bkag-nas,</i> | Having been prevented by snow, |
| <i>sgam-gyi nang-la ga-re chag-'dug</i> | What is broken in the box . . . |

In an earlier section dealing with tone-1 words (1.c) I had pointed out that the three particles *kyi/gyi/gil-'i*, *tu/du/ru/su/-r*, and *kyis/gyis/gis/-s* coalesce with V-final noun lexical items to form monosyllables, in which case these particles are spelt *-i*, *-r*, and *-s*; in tone-2 words of this type the contour pitch is rising for words exemplifying the former two particles, but falling for words containing the third; e.g.

- | | | |
|----------|-------------------------------------|---------------------------------|
| rising: | <i>'di'i rin ga-tshod red</i> | What is the price of it? |
| | <i>'di nga'i ma red</i> | This is not mine. |
| | <i>ngar mig ston-rog gnang</i> | Please show me. |
| | <i>'dir shog</i> | Come here. |
| falling: | <i>ngas brtson-'grus byas-nas</i> | Through my working hard, |
| | <i>zam-pa 'di chus khyer-ba-red</i> | The flood took away the bridge. |

VII. *Conclusion*

In section (IV) above I paraded evidence from three well-known scholars in Tibetan studies, Chang and Shefts (1964), Hari (1979), and Hu (1982), to show that there was a disturbing lack of unanimity in the tonal analysis of Lhasa Tibetan at the phonological level and—more disconcerting still—a sig-

nificant lack of agreement even at the phonetic level, on the pitch features that can be distinguished in that dialect. In the following section (V) I held the spelling style of pronunciation, used by literate Tibetans in spelling syllable isolates from Written Tibetan, responsible for influencing the pitch features that Tibetan informants have been recorded as having used when uttering syllables and words as citation forms. Whether or not I am correct in attributing responsibility for the differences in pitch recorded by them to the spelling style of Tibetan pronunciation, I am convinced that phoneticians and phonologists studying the tonal dialects of Tibetan would do well to avoid the citation-form approach: the promise that citation forms might seem to hold out for speedy penetration in phonetic and phonological analysis alike is, in my view, illusory. The only secure way to achieve a reliable analysis of Lhasa Tibetan and other such dialects at the phonetic and phonological levels is to work from pitch features of words in spoken sentences, such as the register features and the contour features of the words that I have abstracted from spoken sentences, and analysed, in section (VI); there is no *mg-yogs-lam*.

An approach modelled on reading Chinese characters in isolation is misleading for a language as different from Chinese as Tibetan.

The sort of analysis that I have advocated supports the conclusion of Jäschke (1881/1934), Chao (1930), and Sprigg (1954), (I–III) that Lhasa Tibetan is a register tone language in which two terms are lexically distinguished; contour pitch distinctions have no lexically distinctive role to play.

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