

VOWEL HARMONY IN SPOKEN LHASA TIBETAN*

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*The preparation of this study was supported in part by National Science Foundation Grant GSI430.

1. Introduction.¹

Vowel-harmony alternations may be regarded as sandhi phenomena.²

The sandhi producing them in the spoken Tibetan of Lhasa is of two main types: (1) internal to the morphological unit, with consonantal interruption; and (2) external (across the boundaries of morphological units).

Though the occurrence of vowel harmony beyond the boundaries of morphological units is marginal in Lhasa Tibetan, harmonic alternations appear extensively within morphological units. Our first aim, therefore, shall be to examine the workings of the harmonic process in morphology. Vowel harmony constitutes, for example, one of the formal marks of composition. There are, however, also other ways in which we recognize complex morphological units as opposed to syntactic sequences.³ One way of saying 'five or six', for example, is through a coordinate sequence: $\eta\bar{a} \text{ } \hat{t}h\hat{u}$:. Another is a compound, $\eta\bar{a}\hat{t}h\hat{u}$;; this compound shows three of the possible marks which may characterize morphological units of more than one syllable:

- (1) The alternation of initial aspiration with its noninitial absence.
- (2) Tone alternation in stressed sequences. Low tone in a single or first syllable alternates with high tone in a second. In another alternation, a final falling tone alternates with a nonfinal level tone, as in $r\hat{e}$: 'cotton cloth', $ch\bar{i}:r\bar{i}$: 'a dustcloth', $r\bar{i}:\hat{q}\hat{u}$: 'a cotton bag'.

- (3) Harmonic alternation.

Two other marks are the appearance of: (4) a medial nasal feature and (5) a medial $\underline{p}$, neither of which occurs with either the first or second number of the compound in isolation. For example:

- (4) $t\check{u}$ 'barley,' $\check{s}\bar{a}$ 'meat' : $\check{s}\bar{a}N\hat{t}\bar{u}$ 'barley to be traded for meat'; $ch\hat{a}$:

'hand' (p.) : $ch\bar{a}Nt\bar{u}$ 'barley' (p.); $r\check{\chi}p$ 'the best', $t\check{y}ŋ$ 'medium' :
 $r\check{\chi}m\check{t}\bar{i}:N$ 'the first class and the middle class'

This nasal feature is part of the second morpheme in all such cases (cf. Chang and Shefts 1965).

- (5) $s\bar{o}$ 'tooth,' $\check{s}\check{y}$ 'four' : $s\bar{u}p\check{s}\bar{i}$ 'a five-year-old yak (i.e. one with four teeth)'

On the strength of the following examples we assign the medial p of $s\bar{u}p\check{s}\bar{i}$ to $\check{s}\check{y}$: $q\bar{a}$: 'pillar', $q\bar{a}p\check{s}\bar{i}$ 'a room with four pillars', $r\check{u}$ 'a support', $r\check{u}p\check{s}\bar{i}$ 'a wooden door frame'; $c\bar{u}$ 'ten', $c\bar{y}p\check{s}\bar{i}$ 'fourteen'; $th\bar{a}$ 'edge', $th\bar{a}p\check{s}\bar{i}$ 'the term for a six-year-old horse (one with eight permanent teeth, the four next to the milk teeth on each side)'. The morphological analysis is more problematical in such examples as $\check{n}\check{a}$ 'fish', $th\check{y}m\bar{\Lambda}$ 'smell', $\check{n}\check{a}p\check{t}\bar{i}$ 'the smell of fish', but $qh\bar{a}$ 'mouth', $qh\bar{a}p\check{t}\bar{i}$ 'bad breath'.

In some cases, there is no formal mark which distinguishes what we call a morphological unit; here our criterion is structural, but by analogy to a unit which has a formal mark. $ch\check{\chi}p\bar{u}$ 'down', for example, exhibits a harmonic alternation (cf. $ch\check{a}$ 'chicken, bird', $p\bar{u}$ 'hair'); $kh\check{i}p\bar{u}$ 'a dog's hair' does not ($kh\bar{i}$ 'dog', $p\bar{u}$ 'hair'), but since its structure is the same as that of $ch\check{\chi}p\bar{u}$ we identify it as a morphological unit and include it in our data.

A further criterion is needed to distinguish one type of morphological unit, the verb base with an unstressed suffix. The verb base followed by an unstressed auxiliary has the same stress pattern, and yet we classify this sequence as syntactic. The basis for this distinction is that between base and auxiliary another morpheme, the negative affix, can occur; between base and suffix it cannot:

- (1) Base and suffix $-p\check{\Lambda}$

phŷ: mǔ: šŷ:pa rê: 'The boy hit her'

phŷ: mǔ: mǎšŷ:pa rê: 'The boy didn't hit her'

(2) Base and auxiliary chu (~ chŷ:N)

phŷ: ŋǎ: šŷ: chu 'The boy hit me'

phŷ: ŋǎ: šŷ: mǎcū:N 'The boy didn't hit me'

These, then, are the criteria we use for including sequences of morphemes in our data. For the purposes of this investigation, we shall not, however, include every sequence that thus qualifies as a morphological unit. We impose two restrictions: (1) that both, or all, syllables be stressed, and (2) that we have a monosyllabic alternant for the alternant which appears in the complex morphological unit. We treat this monosyllabic alternant as basic.⁴ Only after this phase of our investigation is complete shall we proceed to examine, for instance, dissyllabic units for neither morpheme of which we can find a monosyllabic alternant. Thus we include tsĩĩ 'bayonet' (tsē 'peak, tip', thĩ 'knife') and nŷqĩ jĩ:N 'I'm going to buy it' (nŷ: 'to buy'), but not qhŷtē: 'ashes', qhŷjŷ: 'a long wooden stick used to turn the fuel in a stove', for which we know no alternant which occurs by itself as a monosyllable. At the conclusion of our investigation we would hope to be able to extend to such cases any findings we make on the direction of vowel harmony. At this point we could not say whether qhŷ- is lowered, or qhŷ- raised, or even whether there is any such process.

The tone possibilities which can be realized in any one position in stressed morphological units of more than one syllable are limited. In the first syllable, there are only high level and low level tones; in the second syllable, there are only high level and high falling tones. The assumption of vowel harmony carries with it the implication that the vowels which may appear in a given position in such units are also limited.

The environment freest of such restrictions is that of the monosyllable. Here, for example, all the tones occur: high level, $\check{s}\bar{a}$: 'a deer; east'; low level, $\check{s}\check{a}$: 'brown veins in jade'; high falling, $\check{s}\hat{a}$: 'a dwelling place'; low falling, $\check{s}\tilde{a}$: 'an oily film on the surface of a liquid, as for example when butter is added to tea'. In open monosyllables, there are five single oral vowels: i, u, e, a, and o. In dissyllabic forms with i in the second syllable, only i, ʌ, and u occur in the first syllable (cf. Chart 1).

We exclude from the data we examine in §2 alternants for which we know of no monosyllabic alternant. We exclude, further, those instances where we have a monosyllabic alternant, but where alternations in vowel height are regularly accompanied by alternations in length. Thus we include $l\bar{o}$: 'lungs', p.: $q\bar{u}l\bar{u}$: and $th\check{u}$: 'smoke', $c\bar{i}n\bar{t}\bar{u}$: 'smoke in the eyes' (p.) but not $l\bar{o}n\hat{e}$: 'tuberculosis', $l\bar{u}y\check{u}$: 'the tube of the windpipe', $th\check{u}q\bar{u}$:N 'chimney', or $q\bar{o}$: 'skin boat', p.: $ph\bar{e}p\bar{q}\bar{o}$. We shall take up such cases again in §3.

Dissyllabic nouns, one or both of whose members have monosyllabic allomorphs, provide one source for the study of harmonic alternations. Monosyllabic verb bases can be established in the environment before auxiliaries, such as the honorific $n\bar{a}$:N; $ch\hat{o}$: 'to be able to'; $n\check{u}$:N 'to experience'; or $t\hat{e}$: 'to keep on doing'. For example:

$s\hat{\phi}$: $n\bar{a}$:Np $\wedge$ $r\hat{e}$: 'He made it' (p.) (V $s\hat{\phi}$:)

$s\check{o}$ $th\check{u}$:p $\wedge$ $r\hat{e}$: 'He could make it' (V $s\check{o}$)

$s\check{\phi}$: $n\bar{a}$:Np $\wedge$ $r\hat{e}$: 'She brought him up' (V $s\check{\phi}$:)

$j\check{y}$: $l\bar{a}$ $s\hat{\phi}$: $n\bar{a}$:Np $\wedge$ $r\hat{e}$: 'They worshipped the local god' (V $s\hat{\phi}$:)

One auxiliary which occurs after both verb and adjective bases is $th\hat{a}$:

$qh\check{\phi}$: $ch\check{a}$ $t\check{o}$: $th\hat{a}$:p $\wedge$ $r\hat{e}$: 'He churned the tea too much' (V $t\check{o}$:)

$q\bar{o}pk\hat{a}$: $m\bar{a}$ $th\hat{a}$:p $\wedge$ $r\hat{e}$: 'The chair is too low' (A $m\bar{a}$)

Adjective bases also occur in other environments. For example:

nâ: t̥hâ: 'to be too black' (A nâ:)

nâ: rhirī: 'black and round'

nâ: s̥ɔptsʌ chi t̥u: 'It's a little black (of e.g. the cuff of a
dirty shirt)'

phă:lè: nă: qhōqtsʌ chi t̥u: 'The toast [bread] is a little overdone'

The vowels of these monosyllabic alternants can then be compared with those
of dissyllabic alternants. For example:

mā 'low', m̄apō t̥u: 'It's low', m̄āqī rē: '(I believe) it's lower'

s̥ɔ:, s̥ɔ 'to make', s̥ūqī j̥l̄:N 'I'll make it'

2. Internal sandhi, with consonantal interruption.

Charts

In the following charts of internal sandhi with consonantal interruption, the leftmost column shows the vowels which occur in monosyllabic words. The vowels heading the columns are those which occur in dissyllabic forms in syllables adjacent to the allomorph of the monosyllabic word. The vowel of the monosyllabic alternant is thus indicated to the left of each row. The entries in each row show the vowel which occurs in allomorphs of this morpheme when the vowel of the adjacent syllable is that given at the head of the column. A hyphen after the vowel means that the alternant of the monosyllable occurs only in the first syllable; a hyphen before the vowel means that it occurs only in the second syllable. For example, given an /i/ in the adjacent syllable, the first-syllable alternant of a: is a:- or ʌ:-, the second-syllable alternant is only -a: (Chart 4): qhà:, qhā:nī, and thā:ṭī 'a loom', but ṭhīyà: '10,000 yaks'.

In the examples to the charts we have been true to phonemic reality as we see it. To throw into relief the processes of vowel harmony, we have, however, abstracted out certain other alternations in the charts:

(1) Oral-nasal. In the case of mī, mēNqō, for example, we have shown e as the alternant of the monosyllabic i (Chart 1, row 1, box 6). In fact, the alternant is a nasal vowel (which we indicate by an N following the vowel). The nasal feature belongs to the following morpheme. What is more important, nasality doesn't seem to be a factor in the overall pattern of Tibetan harmonic alternations.

(2) Consonant-tone. Among the examples to the charts for geminate oral vowels (Charts 4-6), there are words in which instead of geminate vowels

there are single vowels followed by q, p, or r. Once again, since this is not relevant for the harmonic alternation, we have given only the vowel in the chart. (See footnote 9 for a discussion of consonant-tone alternations.)

The vowel of an entry may show a change occurring in the environment of the vowel at the head of the column (e.g. tsē, rĭtsĭ [Chart 1]). Such cases are unambiguous. The vowel at the head of the column has not changed, but has served as the impulse for change. When the vowel is the same as that of the monosyllable, however, (e.g. mĭ, mĭtū; chă, chăřō [Chart 1]), the vowel at the head of the column itself--u in the case of mĭtū, o in the case of chăřō--may, or may not, have changed. This the charts do not show. In some cases, it can be determined: for example, we know that the monosyllabic alternants of -tū and -rō are thō 'list' and řō 'corpse', and that the o of thō has been raised to u by the i of mĭ.

Chart 1

	i	^	u	e	a	o
i	i	i	i	e-		e-
u	u-, y- ⁵	u	u	o-	ø:- ⁵	o-
e	i		i		e	e
a	^		^	a	a	a
o	u-		u-	o	o	o

Examples to Chart 1

- i i rĩ 'mountain', rĩtsĩ 'mountain peak'
 šĩ 'to die', šĩqĩ rê: 'He's going to die'
 cĩ 'heavy', cĩqĩ rê: '(I believe) it's heavier'
 thĩ 'knife', (mẽNtẽ:) tsĩtĩ 'bayonet' (cf. tsẽ 'tip, peak')
- i ʌ šĩ 'four', šĩpʌ 'fourth'
 thĩ 'knife', šʌtĩ 'meat knife' (cf. šā 'meat')
 šĩ 'to die', šʌnʌ 'if he dies'
- i u mĩ 'person', mĩtũ 'a list of people' (cf. thō 'list')
 thĩ 'knife', lũtĩ 'a knife used by lōpā (people living in lō)'
 cĩ; cĩpũ 'heavy'
- i e mĩ 'person', mětse, mĩtsĩ 'human life' (cf. tshē 'life')
- i o mĩ 'person', mẽNqō 'human head'
 qũ sĩ: 'to feel cold' (p.), qũtsĩ 'life' (p.)
 cũ 'ten', cỹpsĩ 'fourteen' (cf. šĩ 'four')
- u i qũ 'nine', qũtĩ '90,000'
 qũ 'nine', qũpkʌ '900' (cf. kǎ 'hundred')
- u ʌ khũ 'flock, swarm, herd', khũpʌ 'a male yak used for breeding',
 mǎkũ 'a herd of female yaks'
- u u chũ 'water', ñũcũ 'a potion causing insanity (cf. ñō 'insane')',
 chuNqũ 'the source of a river'
- u e qũ sĩ: 'to feel cold' (p.), qũtsē 'life' (p.)
- u a cũ 'ten', cǝ:ŋǎ 'fifteen' (cf. ŋā 'five')
- u o chũ 'water', chōNqō 'the source of a river'

- phũ 'boy; child', phõmõ 'girl; daughter'
- e i mē 'fire', mĩtĩ 'the smell of fire'
 tsē 'tip, peak', rĩtsĩ 'mountain peak',
 (mēNtē:) tsĩtĩ 'bayonet'
- e u tshē 'life', qũtsĩ 'life' (p.)
- e a mē 'fire', mēNtā 'gun'
 tsē 'tip, peak', lātsē 'the highest point on a mountain pass'
- e o mē 'fire', mētō 'flint used to make fire'
 tshē 'life', qōtsē 'life' (p.)
- a i chǎ 'tea', chǎtĩ 'the smell of tea'
 qǎ 'saddle', chĩqā 'saddle' (p.)
- a u chǎ 'bird', chǎqū 'a flock of birds'
 tǎ 'hair (of the head)', p.: ũtā
- a e lǎ 'mountain pass', lātsē 'the highest point on a mountain pass'
 ñǎ 'fish', sēñā 'goldfish'
- a a tǎ 'arrow', tǎpā 'archer'
 šǎ 'meat', rǎšā 'goat meat'
- a o chǎ 'tea', chǎrō 'used tea leaves'
 ñǎ 'fish', tshōñā 'ocean fish, lake fish'
- o i sō 'tooth', supšĩ 'a five-year-old yak' (i.e. one with four
 teeth; cf. šĩ 'four')
- ñp̃:, ñõ 'to buy', ñũqĩ jĩ:N 'I'm going to buy it'
 thō 'high', thũqĩ rê: '(I believe) it's higher'
- o u ñp̃:, ñõ 'to buy', ñũkũ rê: 'It has yet to be bought'

- o e lǎ 'year', lǎrē 'every year'
šǎ 'a unit of measure for silver',
sēšǎ 'a unit of measure for gold'
- o a ñǎ:, ñǎ 'to buy', ñǎnā 'if one buys'
thǎ 'a list', sātǎ 'a land list'
- o o lǎ 'year', lǎtǎ 'calendar'
thǎ 'two' (e.g. šǎ šǎlù: thǎ 'two jugs of yoghurt'),
chǎtǎ 'lips'

Chart 2

	i:	I:	Λ:	y:	u:	U:	e:	ε:	a:	φ	o:	ɔ:
i	i-	i	-i	i	i-	i-	e-	e-	i-	e-		
u	u-	u-	-u	u	u-	u	o-	o-	u-, o-	ɔ-		
e	i-	e-		i-	i-	i-	e-		e	e	-e	e-
a	Λ-	a-, Λ-		Λ	Λ-	Λ-	a-	a	a	a-		a
o	u	o-		u-	u-	u-	o	o	o	o		o

Examples to Chart 2

- i i: mĩ 'person', mĩrĩ: 'nationality, race'
- i I: thĩ:, thĩ 'to write', thĩñĩ: 'one who writes'
thĩ 'a throne', lĩ:tĩ 'a scaffold used in construction work'
(cf. lē:, lē:qā 'work')
- i ʌ: thĩ 'throne', thā:tĩ 'loom' (cf. thā: 'to weave')
mĩ 'person', mā:mĩ 'soldier' (cf. mā: 'war')
- i y: thĩ:, thĩ 'to write', thĩṭȳ: 'when I wrote', yĩqĩ thĩNṭȳ: j̣ø:
'I want to write a letter', j̣ĩqĩ thĩšȳ: rĩNqā: 'while he was
writing the letter'
chĩ 'late', chĩḷȳ: 'how late?'
sĩ 'a gem: onyx?', p.: q̣ysĩ
- i u: thĩ '10,000', thĩḷù: '10,000 sheep'
- i U: thĩ:, thĩ 'to write', qḥø: j̣ĩqĩ
thĩṭŪ: chē:p̣ā rē: 'He almost wrote the letter,' j̣ĩqĩ
thĩṛŪ: chi! 'Please write the letter!'
rĩ 'mountain', ṛĩq̣Ū: 'mountain garlic'
- i e: mĩ 'person', mēse: 'tenant; serf'
- i ɛ: tĩ 'this', thēnē: (N, K: ṭĩṇḷ:) 'then'
- i a thĩ '10,000', thĩj̣à: '10,000 yaks'
- i ø rĩ 'mountain', rẹ̄ṭø: 'a mountain retreat; hermitage on a
mountain'
- u i: chũ 'water', chũṃḷ: 'a spring'
- u I: pũ 'hair', pũp̣ĩ: 'hair and wool' (cf. phē: 'wool')
ũ 'head' (p.), ũñḷ: 'pillow' (p.; n.p.: ñē:)

- u ʌ: phū kʰp 'to blow', p.: cʰ:pū kʰ:N
 (cf. cā: 'tongue' [p.])
- u y: lū 'naga', lūjy: 'land of the nagas'
 jū 'turquoise', p.: qy:jū
- u u: ū 'head'(p.), ūtù: 'a triangular hair ornament worn by offi-
 cials' wives for special occasions' (p.; n.p.: pʰtù:)
- u U: chū 'water', chūlū: 'a flood', Ū:cū 'a downspout; an outlet
 for water'
- u e: chū 'water', chōqè: 'awnings (at windows)', chōptsè: 'a water-
 game, water-fight'
- u ɛ: cū 'ten', cōpkè: 'eighteen' (cf. kē: 'eight')
- u a: khū 'flock; swarm; herd', khūsā: 'the new herd'
 qūp 'buttocks', qūpkà:(N), qōpkà: (K) 'chair'
 qū sī: 'to feel cold' (p.), qūṭà:(N, K), qōṭà: (K) 'an official'
- u ø: ū 'head' (p.), øtø:, ūtý: 'skull' (p.) (n.p. for 'skull': thøpā)
- e i: sě 'to say', šimī: ɭ mātø:pɛ: 'regardless of whether or not
 they say it'
- e I: sě 'to say', sēnī: 'even if you say'
- e y: kè:, kē 'to be born', kījy: 'birthplace'
- e u: cē 'tongue', cītù: 'uvula'
- e U: chē:, chě 'to do', qhø: chītū: chē:pʌ
 rē: 'He almost did it'
- e e: chē:, chě 'to do', chērè: chē: 'to take turns doing'
- e a: cē 'tongue', cēlā: kʰp 'to lick with the tongue'

- thě 'a measure for grain', p.: chā:tē
- e ø: chē 'large', chēlø: 'how large?'
mě 'fire', mēcø: 'a medical treatment which uses fire',
chø:mē 'fire used as an offering'
- e o: mē 'fire', p.: šö:mē (K; N: 'šü:mī)
- e ɔ: mē 'fire', mēcɔ: 'a ladle used to transfer embers from the
stove to a clay pot'
- a i: chǎ 'tea', chǎri: 'a teaball'
šā 'meat', šāpri: 'a small meatball'
- a I: nǎ 'to be sick', nǎnī: 'even if he were sick'
rǎ 'intoxication', rǎ sǐ 'to become intoxicated',
rǎpsǐ: 'a drunkard'
- a y: sê:, sǎ 'to eat', sǎty: 'when he ate'
lhā 'god', lhājy: 'heaven', jy:lā 'a local god'
- a u: ŋā 'five', ŋātù: 'five or six'
- a U: sê:, sǎ 'to eat', ŋê: qhø:
qājø: nǎ:N nɛ: qhālà:
sǎtū: jǐ:N 'I almost ate from his bowl'
ŋā 'drum', ŋājU: 'a drumstick'
- a e: tā 'horse', tātē: 'horses and/or mules'
- a ɛ: tē:, tā 'to watch', tāñɛ: 'one who watches'
lā 'payment', nē:lā 'payment for lodgings'
- a a: qǎ 'saddle', qǎtà: 'a saddle rope'
sê:, sǎ 'to eat', sǎqǎ: tǔqī
jǐ:N 'I'm going to go to eat'

- lā 'payment', tā:lā 'the cost of transportation'
- a ø: mā 'low', māšø: 'lowest'
 sê:, sā 'to eat', sāNtø:
 jô: 'I want to eat'
- a ɔ: tā 'horse', tāyɔ: 'stable boy'
 chă 'tea', šɔ:cā 'morning tea'
- o i: sō 'tooth', suñi: 'a four-year-old yak (i.e. one with two teeth; cf. ñi: 'two')'
 thǒ 'bronze', ki:tū 'a bronze container for hot water, kept on the central burner of a stove' (cf. ki: 'central')
- o I: qhǒ 'to hear', qhǒñi: 'even if he heard'
- o y: lǒ 'year', lǔkỳ: 'history'
 šø:, sǒ 'to make', lǎNqà:
 sǔšy: riNqā: 'while they were making the road'
- o u: sō 'tooth', sūtù: 'a six-year-old yak (i.e. one with six teeth; cf. thû: "six")'
- o U: chìn, tǒ 'to go', ŋǎ/ŋê:
 tǔtǔ: jǐ:N 'I almost went'
- o e: šø:, šō 'to throw', šǒrè:
 tā:N to throw in turn at each other'
 lǒ 'year', lǒpcè: 'half a year'
 thō 'list', cǎ:tō, cǎtō 'a written reminder to oneself'
- o ɛ: šō 'dice', šǒpcè: 'equipment for playing dice'
 šø:, sǒ 'to make', sǒñē: 'one who makes'
 tǒ 'stone', kǎ:tō 'a stone which costs eight saṅ (cf. kê: "eight")'

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- o a: qǒ 'a door', qǒcà:, qǒNcà: 'a lock'
tǒ 'stone', tǒpkà: 'stone steps',
tǎ:tō 'whetstone'
- o ø: tō 'food', tōqø: 'food and clothing'
chì:n, tǒ 'to go', tǒNtø: jø: 'I want to go'
šō 'yoghurt', p.: sø:šō
- o ɔ: tǒ 'stone', tǒqò: 'a stone pot'
sø:, sǒ 'to make', sǒrɔ: naa! 'Please make it!'

Chart 3

	iN	IN	AN	yN	uN	eN	ɛN	aN	øN	oN
i	i-	i-	-i	-i	i-			i-	e-	e-
u	u-	u	u	u	u-			u-	o-	o-
e	i-				i-	e-		e-	e	e-
a	^-			-^	^-	a-	a	a	a	a-
o	u-			u	u-	o-	o	o	o	o

Examples to Chart 3

- i iN šǎ 'four', šǎli:N cì: 'a quarter (of a carcass)'
- i IN šī 'to die', šīmī:N 'an anesthetic that puts you to sleep
('makes you die")'
- i ^N rǐ 'mountain', qhǎ:Nrī 'a snow-covered mountain'
- i yN rǐ 'mountain', jy:Nrī 'the mountain to the left' (cf. jǒ:N
'left')
- i uN mǐ 'person', mǐqù:N 'a section/group of people', e.g. qhō
lhālǎy: mǐqù:N rē: 'He belongs to the lhālū family', qhō
sērē: mǐqù:N rē: 'He belongs to sērā monastery; he works
on the land of sērā'
- i aN mǐ 'person', mǐmà:N 'the common people; the majority of the
people'
- i øN thī 'throne', thēNtǒ:N 'coronation; inauguration'
mǐ 'person', mǐpǒ:N 'a judge'
- i oN šǐ 'four', šētō:N 'four thousand'
cīq 'one', chēqtō:N 'one thousand'
khī 'dog', khēsō:N, khīšū:N 'a basin for dogs'
- u iN thǔ 'a boat', thǔtsi:N 'a ship'
(cf. tsīŋ 'a raft')
- u IN šǔ 'a bow', šǔtī:N 'cloth wrapped around the bamboo part of
a bow, to protect the hand' (cf. tǎN 'cushion')
chū 'water', cīNcū 'tear' (p.) (cf. cē:N 'eye' [p.])

Vowel Harmony in Spoken Lhasa Tibetan

- u ʌN tŭ 'barley', p.: chǎ:Ntŭ
- u yN tŭ 'barley', tŭsy:N 'barley seeds'
(cf. sǒ:N 'seeds')
cū 'ten', tŷNcū 'seventy' (cf. tŷ:N 'seven')
- u uN chū 'water', chūšū:N, chōšō:N 'a basin for water'
(cf. šōŋpā 'a basin')
- u aN chū 'water', chūqā:N 'a bathhouse'
- u øN cū 'ten', cōqpǒ:N 'an army officer in charge of a unit of ten men'
rŭ 'a line, or wing, of soldiers', rǒpø:N 'an army officer in charge of a rŭ'
- u oN qŭ 'nine', qǒtō:N (K), qŭtū:N (N) 'nine thousand'
- e iN mē 'fire', mŷī:N 'fuel'
(cf. šīŋ 'wood')
- e uN chē 'large', chīcū:N 'size'
- e eN mē 'fire', mēkē:N, mēkem 'a small spade used to remove ashes from the back of a stove'
- e aN chē:, chē 'to do', chētā:N 'a way of doing'
- e øN mē 'fire', mēkǒ:N 'damage caused by fire'
cē 'male sexual organ', p.: sǒ:Ncē
- e oN chē:, chē 'to do', ŋǎ/ŋǎ: chēlō:N mē:
'I don't have time to do it'
- a iN qhā 'mouth', qhāpī:N 'dried glue (from China), which one wets with the mouth'
- a yN chǎ 'tea', kŷNcā 'tea usually used at assemblies of monks and

- nuns' (cf. nǎmkȳ:, nǎmkȳ:N,
kȳN thu 'usually')
- a uN ɲā 'drum', ɲācū:N 'a small drum'
- a eN ɲā 'drum', ɲācē:N 'a large drum'
sê:, sǎ 'to eat', sǎtè:N cì: lɿ 'at one meal'
- a ɛN qā 'speech' (p.), qālē:N 'reply, message' (p.)
lhā 'god', mē:Nlā 'god of medicine'
- a aN ɬā 'hair', ɬāqā:N 'barber shop'
lā 'payment', qhā:Nlā 'rent'
- a øN kǎ 'hundred', kǎqpɿ:N 'an Army officer in charge of a unit
of a hundred men'
ñǎ 'fish', tɿ:Nñā 'autumn fish'
(cf. tɿNqā 'autumn')
- a oN chǎ 'tea', chǎNtō:N 'a tea churn'
- o iN tǒ 'stone', tǔrì:N 'a stone pillar'
- o yN šǒ 'a monetary unit', šǔtȳ:N 'seven šǒ'
sō 'tooth', tȳ:Nsū 'front teeth'
- o uN qǒ 'door', qǔcū:N 'a small door'
- o eN sō 'tooth', sōcē:N 'large teeth'
- o ɛN ñɿ:, ñǒ 'to buy', K: ɲǎ: ɲȳ:
qhālà: ñǒtè:N (N ñǒtè:N)
chi jɿ: 'I have enough money to buy a meal'
thō 'a list', tshēNtō 'a list of names'
- o aN rǒ 'a corpse', rǒlā:N 'a corpse that gets up' (cf. lâ:N
'to get up')

pǒ 'a container used in measuring grain', p.: chā:Npō

- o ϕ N thǒ 'wheat', thǒsǒ:N 'wheat seeds'
 tō 'food', tsǒNtō 'prisoners' food'
- o oN tǒ 'stone', tǒsǒ:N 'a stone basin'
 lǒ 'year', p.: qǒ:Nlō

Chart 4

	i	^	u	e	a	o
i:	i:-	i:	i:-			
I:	I:-					
y:	y:	y:	y:			
u:	-u:	u:-	u:	o-		o:-
U:	U:-	U:-	-U:			
e:	i- -e		i:-	-e:	e:	-e:
ε:	ε:-, I:		I:	ε:	ε:	ε:
a:	a:-, ^:- -a:		^:- -a:	-a:	a:	a:
φ:	φ:-, y:-	y:-	y:	φ:	φ:	φ:
ɔ:	-U:	-U:	U:	-ɔ:	ɔ:	ɔ:

Examples to Chart 4

- i: i khī: 'to take', khī:qī rē: 'He will take it'
- i: ʌ ŋī: 'two', ŋī:pʌ 'second', qʌŋī: 'a room with two pillars'
- i: u kī: 'central', kī:tū 'a bronze container for hot water kept on the central burner of a stove' (cf. thō 'bronze')
- I: i lī: (N; K: lê:) 'to arrive; to come',
lī:qī rē: 'he's going to arrive'
- y: i phy: 'to give, showing respect to the recipient',
phy:qī jī:N 'I'm going to give'
jŷ: 'place', kijŷ: 'birthplace'
- y: ʌ kŷ: 'descendant', kŷpʌ 'line of descent',
šʌkŷ: 'line of maternal descent'
- y: u tŷ: 'a demon', tŷ:mū 'a female demon; a witch'
qŷ qŷ: 'to lead (monks in prayer)', p.: ūqŷ: nā:N
- u: i lū: 'sheep', thīlū: '10,000 sheep'
- u: ʌ qhū: 'tent', qhūrpʌ 'a government employee who sets up tents for festivals', tʌqū:, pʌqū: 'a nomad's tent'
tū: 'Bhutan', tūqpʌ 'a Bhutanese'
- u: u ū: 'breath', ŋǎ ū:sūp thī:qī: 'I am suffocated, find it difficult to breathe'
thū: 'six', thūqcū 'sixty'
nū: 'west', lhūnū: 'southwest'
- u: e sū: 'side', sŏtē (K), sūtī (N) 'a side fold'
- u: o lū: 'sheep', lŏ:Nqō (K), lŭ:Nqū (N) 'sheep's head'

thù: 'mind' (p.), thō:tō',

thū:tū 'a party'

U: i lŭ: 'to return', lŭ:qī rē: 'he will return'

U: ʌ rŭ: 'a herd', rŭ:pā 'a herdsman'

U: u šŭ: 'a sore believed to be caused by a water god', p.:
qušŭ:

e: i tē: 'to give', tī:qī jŷ:N 'I will give'

sē: 'a nail', šŷ:sē: 'a wooden nail'

e: u phē: 'to come' (p.), phiptū 'a boat' (p.)

e: e thē: 'mule', p.: chēptē:

e: a šē: 'the day after the day after tomorrow', šē:tā 'an invita-
tion for the day after the day after tomorrow'

thē: 'mule', tātē: 'horses and/or mules'

e: o cē: 'track, print', qōpcē:, qūpci: 'the impression left by
buttocks (on e.g. sand)'

ε: i qhāšē: 'some', qhāšē:nī 'as for some'

šē: 'mouth' (p.), šŷ:tī kŷ:N 'to belch'

qē: 'voice', tsīrqī: 'a "squeezed" voice (in singing)'

ε: u tē: 'rice', tŷ:tū 'a clay pot for steaming rice'

phē: 'wool', pūpī: 'fur/hair and wool'

ε: e nē: 'barley', nē:sē 'a goblet for offering barley (in
religious ceremonies)'

kē: 'eight', šŷpcū šēpkē: 'forty-eight'

ε: a thē: 'tax' thē:pā 'taxpayer'

- sê: 'food', kāsê: 'Chinese food'
- ε: o kē: 'eight', kē:tō 'a stone which costs eight saṅ'
rē: 'cotton cloth', qōrē: 'a scarf (for the head)'
- a: i qhà: in, for example, tsōNqō qhà: 'the various districts',
tsōNqō qhā:nī 'as for the various districts'
thà: 'weaving', thā:tī 'a loom'
mà: 'war', māqci 'commander-in-chief of the Army, chief of
staff'
yà: 'yak', tīyà: '10,000 yaks'
- a: u mā: 'butter', mā:qū 'liquid butter'
cà: 'iron', cāqkū 'fishhook; metal hook'
thà: 'blood', p.: qūtà:
- a: e cà: 'iron', mēcà: 'a piece of iron used to make fire'
- a: a yà: 'yak', yā:qā 'a yak-saddle',
yāqpā 'one who looks after yaks'
mā: 'butter', chāmā: 'tea and butter'
- a: o šā: 'east', šā:lō 'southeast'
mà: 'war', tshōmà: 'navy'
- φ: i tshφ: topic marker; for example:
pāNtē:N qhi tshφ: thi, pāNtē:N qhi tshφ:nī 'as for pāNtē:N'
phφ: 'Tibet', phŷ:mī 'a Tibetan'
- φ: ʌ phφ: 'Tibet', phŷ:lāp 'Tibetan radish'
- φ: u tsφ: 'antelope', tsŷ:rū 'antelope horn'
jφ: 'rabbit', chūjŷ: 'water-rabbit year'
- φ: e phφ: 'Tibet', phŷ:lē 'the Tibetan calendar'

- ñḥ̃:, ñḥ̃ 'to buy', tḥ̃pñḥ̃: 'to buy wholesale; to buy in large quantities'
- ɸ: a phḥ̃: 'Tibet', phḥ̃:cā 'Tibetan tea'
 jḥ̃: 'earth-rabbit year', sājḥ̃: lōmā 'a girl born in the earth-rabbit year'
- ɸ: o tḥ̃: 'the male progeny of a phāNtsō and yak or cow', tō:mō 'the female progeny'
 qhḥ̃: 'garment', tōqḥ̃: 'food and clothing'
- ɔ: i thḥ̃: 'roof', cīqtḥ̃: 'a one-story building'
 rḥ̃: 'help; helper', sīmrḥ̃: 'a roommate'
- ɔ: ʌ kḥ̃: 'ladle', p.: chʌpkḥ̃:, chāpkḥ̃:
- ɔ: u tshḥ̃: 'an assembly', tshḥ̃:Ntū 'a meeting'
 lḥ̃: 'electricity', lḥ̃qḥ̃ 'electric light'
 sḥ̃: 'life', p.: qḥ̃:
 lḥ̃: 'lungs', p.: qḥ̃:
- ɔ: e kḥ̃: 'a ladle', mḥ̃kḥ̃: 'a ladle used to transfer embers from the stove to a clay pot'
- ɔ: a thḥ̃: 'roof', thḥ̃:sā, thḥ̃:sō 'floor, story'
 šḥ̃: 'a side, faction', šḥ̃qpā 'a wing', šḥ̃:qā 'a member of a faction'
 šḥ̃: 'a side, faction', šḥ̃qpā 'a wing', šḥ̃:qā 'a member of a faction'
 rḥ̃: 'help, helper', sāḥ̃: 'an eating companion'
- ɔ: o tḥ̃: 'nomad' (in sāḥ̃ tḥ̃: 'neither completely a farmer nor, completely a nomad', tḥ̃:mō 'a nomad woman'
 chḥ̃: 'direction', lhḥ̃cḥ̃: 'south'

Chart 5

	i:	I:	ʌ:	y:	u:	U:	e:	ɛ:	a:	ɤ:	ɔ:
i:	i:	i:	-i:	i:	i:	i:-	e:-		i:-	i:-, e:-	
I:	I:-	I:-				I:-			I:-		
y:	y:-	y:	-y:	y:	y:-	y:-	ɤ:-		y:-	ɤ:-	
u:	u:-	u:		u:	u:	u:	o:-		u:-	o:-	
U:	U:-	U:-						-ɔ:			
e:	i:	e:-		i:	i:-	i:-	e:-	-e:	e:	e:-	e:-
ɛ:	I:	ɛ:-		I:	I:	I:	ɛ:-	ɛ:	ɛ:	ɛ:	ɛ:
a:	ʌ:-	a:-		ʌ:-	ʌ:-, -a:	ʌ:-	a:-	a:	a:	a:	a:-
ɤ:	y:-	ɤ:-		y:-	y:-		ɤ:-	ɤ:	ɤ:	ɤ:-	ɤ:
ɔ:	U:-	ɔ:-, -U:		U:-	U:		-ɔ:	ɔ:	ɔ:	ɔ:	ɔ:

Examples to Chart 5

- i: i: khī: 'to take', khī:tsi: j^ho: 'I plan to take'
 mi: 'eye', mīqri: 'eyeball'
- i: I: tsī: 'to mix, knead', qh^ho: thūšī: tsī:tsī:, lā th^hλ:qī:
 'whenever he mixes the dough, there's too much water'
 tshī: 'joint', qī:tsi: 'joints in the back'
- i: ʌ: ñī: 'two', jā:ñī: 'a yak of two summers, i.e. a two-year-old yak' (cf. jā:qā: 'summer')
- i: y: thī: 'a line', thī:qy: 'a string used for drawing lines'
 tshī: 'a word', qy:tsi: 'an imperative (in grammar)'
- i: u: kī: 'center', kī:Ntsu: 'middle finger'
 jī: 'faith', p.: thū:jī:
- i: ʊ: khī: 'to take', khī:cū: 'ready to take'
- i: e: mi: 'eye', mēqšē: '(eye) glasses',
 mēqsē: 'jealousy'
- i: a: khī: 'to take', līNqā: khī:yā: qhi thāntsē: 'some cold
 fried vegetables to take to the park'
 mi: 'eye', mīqpā: 'eyelid'
- i: ø: tsī: 'mathematics', tsē:tø:, tsī:tỳ: 'an inventory made for
 a successor'
 tshī: 'a word', tshīntsø: 'a dictionary'
 ñī: 'sleep', ñē:cø: kǎp 'to be delirious in ones sleep'
- I: i: lī: 'to come; to arrive', lī:mī: lʌ mātø:pe: 'regardless of
 whether or not they come'

- I: I: lɿ: 'to come; to arrive', lɿ:tsɿ: 'whenever I come'
- I: ʊ: lɿ: 'to come; to arrive', qhō thōm
 nɛ: lɿ:tɿ: jɔ̃: rɛ: 'He's about to return from the market'
- I: a: lɿ: 'to come; to arrive', kǔqū
 lɿ:yà: qhi chɛ: thu nām̄tū
 sɔ̃:pɑ rɛ: 'In order to arrive quickly they made airplanes'
- y: i: ɲ̄: 'money', ɲ̄:cɿ: kǎp 'to change money'
- y: I: ɲ̄: 'silver', ɲ̄:cɿ: 'silver articles'
 ph̄: 'something offered', sɿ:p̄: 'the (first) food that is offered'
- y: ʌ: ɲ̄: 'money', p.: ch̄:ɲ̄: (cf. chà: 'hand')
- y: y: th̄:, th̄:ts̄: 'time'
 k̄: 'lineage; descent; descendant',
 r̄:k̄: 'line of paternal descent'
- y: u: ɲ̄: 'money', ɲ̄:q̄: 'a bag for money; a wallet'
- y: ʊ: q̄: 'neck' (p.), q̄:q̄: 'a charm box' (p.; n.p.: qhǎu)
- y: e: c̄: 'to twist', c̄:s̄:, c̄:s̄: 'a screw'
- y: a: ph̄: 'to give' (p.), t̄:nt̄ ph̄:jà:
 qhi tsh̄:N 'the names of those to whom invitations have been given'
 ɲ̄ 'money', ɲ̄:p̄: kǎp 'to issue paper money'
- y: ø: th̄: 'to wash', th̄:s̄: (K), th̄:s̄: (N)
 'a ceremony of purification'
- u: i: c̄: 'to put in', c̄:ts̄: ch̄: 'to plan to put in'

- u: I: kû: 'to run', pūqū tĩ kũ:tsĩ:
rĩ:qĩ: 'whenever this child runs, he falls down'
qhũ: 'a tent', ñĩ:qũ: 'mosquito net ("tent for sleeping")'
- u: y: lù: 'to inject', lū:tỳ: 'when they inject it'
lû: 'sheep', phỹ:lù: 'Tibetan sheep'
- u: u: kû: 'sour', kû:cû: 'sour cheese'
- u: U: qhũ: 'tent', tshũ:qũ: 'a large tent for assemblies (of monks)'
šũ: 'to stay' (p.), šũ:rũ: 'a person who stays with someone, e.g. a roommate'
- u: e: thũ: 'mind' (p.), thō:tē:, thũ:tī: 'busy' (p.)
- u: a: thũ: 'a decorative banner on a tent',
thũ:cà: 'the iron ornament on the top of a thũ:'
qhũ: 'a tent', qhũrtà: 'a tent rope'
lû: 'sheep', lũqpà: 'sheep fur'
nũ: 'west', nũplà: 'west wind'
- u: ø: thũ: 'mind' (p.), thō:Ntø:, thũ:Ntỳ: (p.) in, for example,
qhō:N mǝ: thō:Ntø: tũ: 'He (p.) likes her' (cf. ñǝ qhō:
tǝpǝ jǝ: 'I like him (n.p.)')
- ʊ: i: lû: 'to return', lǝ:mĩ: lǝ mǝtø:pɛ: 'regardless of whether or not they return'
- ʊ: I: lû: 'to return', lǝptǝ nɛ: mĩ lǝ:tsĩ: qhi sĩqĩ: 'Everyone who has returned from school said (this to me)'
- ʊ: ɔ: lû: 'to return', ñǝ:lǝ: 'a party given by the parents of a

nāmā or a māqpā several months after the wedding (on which occasion the nāmā or māqpā returns home)'

- e: i: phè: 'to come', qhō:N kǎqā: lʌ
 phĩ:tsì: tû: 'He plans to go to India'
 cê: 'to change', thĩ:cì: kǎp 'to change the sole (of a shoe)' (cf. thĩ: 'sole')
- e: I: phè: 'to come', phē:nĩ: 'even if they come'
- e: y: phè: 'to come', phĩ:tỳ: 'when they come'
 cê: 'to change', ɲy:cì: kǎp 'to change money'
- e: u: thě: 'mule', thĩ:tù: 'a baby mule'
- e: U: lè: 'to arrive' (K), qhō thōm nɛ: lĩ:tũ: jɔ: rê: 'He's about to return from the market'
 cê: 'to forget', cĩ:tũ: jĩ:N 'I almost forgot'
- e: e: kè:,kē 'to be born', kē:mè: šĩmì: 'an arrangement in which one takes care of animals, getting those which are born, but paying for those which die'
- e: ɛ: thě: 'mule', qhē:tē: 'a pack mule'
- e: a: tē: 'to give', thǎŋũ rʌ chi tē:yà: jɔpè:ʔ 'Do you have something cold you can give me?'
 cê: 'a track, print', chāācè: 'handprint' (p.)
- e: ø: kè:, kē 'to be born', kē:jø: šĩjy: 'an arrangement in which one takes care of dairy animals for the owner; if they live, one shares the milk, butter, cheese, according to a fixed formula'
- e: ɔ: phè: 'to come', phē:rò: 'a travelling companion' (p.)

- ε: i: ñê: 'a pillow', ñĩ:rĩ: 'a cylindrical pillow'
rê: 'cotton cloth', chí:rĩ: 'a dustcloth'
- ε: I: chê: 'to do; to say', chě:nĩ: 'though I said (this, what I mean is ...)'
- ε: y: sê: 'to kill', sĩ:tỳ: 'when they kill'
qê: 'voice; language', jỹ:qĩ: 'a local dialect'
- ε: u: qê: 'voice', qĩ:kũ: 'interpreter'
khê: 'difference', p.: thũ:kĩ:
- ε: U: thê: 'to go' (p.), qhō:N thĩ:tũ: rê: 'He almost went' (p.)
- ε: e: qhê: 'a load', qhê:tê: 'a pack mule'
- ε: ε: nê: 'barley', ně:rē: 'coarsely ground barley'
sê: 'son' (p.), kě:sê: 'prince'
- ε: a: šě: 'mouth' (p.), šě:pā: (tā:N) nā:N 'to telephone' (p.)
ṭhē: 'a tax', mǎ:ṭē: 'a tax on butter'
- ε: ø: ñê: 'pillow', ñē:Npø: 'a soft pillow (Western style)'
qê: 'voice; language', phỹ:qê: 'the Tibetan language'
- ε: ɔ: ṭê: 'rice', ṭě:sɔ̃: 'unhusked rice'
qê: 'voice; language', ṭɔ̃:qê: 'the language of nomads'
- a: i: chà: 'hand' (p.), chā:cì: 'a handtowel' (p.)
- a: I: šā: 'to put down, leave', šǎ:nĩ: 'though they leave it'
- a: y: cā: 'tongue' (p.), cǎ:lỳ: 'phlegm' (p.)
- a: u: šā: 'east', šā:nù: 'east and west'
qā: 'pillar', p.: šũ:qā:
- a: U: tshā: 'to finish', ŋǎ tshā:tũ: jø: 'I'm about to finish it'

- a: e: câ: 'tongue' (p.), cǎ:šē: 'sugar' (p.)
- a: ε: mā: 'butter', mā:ṭē: 'a tax on butter'
lâ:, lǎqpā 'hand', pē:lâ: chē: 'to put one's hand near the forehead (to see something under a strong light)'
- a: a: šā: 'east', šā:lâ: 'east wind'
pā: 'Mah jongg; cards; dominoes', p.: chā:pā:
- a: ø: qà: 'years of bad omen (the ones following the first five twelve-year cycles, i.e. 13, 25, ... 61)',
qā:qø: 'clothes worn during qà:'
saa 'new', lø:sā: 'New Year's'
- a: ɔ: ŋā: 'sweet', ŋā:ṭò: kǎp 'to churn (milk) while it is sweet'
- ø: i: chø: 'religion', chȳ:šì: 'monastery estates'
- ø: I: sø: 'to make', sȳ:nī: 'even if they make it'
- ø: y: tø: 'to stay', khȳrā phø: la tȳ:tȳ: 'when you were in Tibet'
- ø: u: phø: 'Tibet', phȳ:lù: (1) 'Tibetan sheep', (2) 'the Tibetan way'
- ø: e: phø: 'Tibet', phø:tsè: 'a day of the month in the Tibetan calendar'
- ø: ε: phø: 'Tibet', phø:qè: 'the Tibetan language'
qhô: 'garment', lē:qø: 'a uniform'
- ø: a: pø: 'an incense stick', pø:tsà: 'incense marks'
tshø: 'a dye', p.: chā:tsø:
- ø: ø: chø: 'religion', qhø: 'a garment',
chø:qø: 'a yellow garment worn by monks and nuns'

- ø: ɔ: phø: 'Tibet', phø:cð: 'a Tibetan table'
 qhø: 'a garment', yō:qø: 'servants' clothes (given annually
 by the master)'
- ɔ: i: lō: 'to read', ṇǎ thěp tǐ
 lū:nī: tǔ:qī mǐntù: tI: ... 'I wanted to read this book, but ...'
- ɔ: I: thò: 'time', āmī rǐqā: lī:tū: tI: 'while you're in
 America'
 khò: 'to lift', khō:nī: 'even if they lift it'
- ɔ: y: ṭò: 'to churn', ṭū:ṭy: 'when they churn'
 ḷò: 'electricity', lū:q̣y: 'an electric wire'
- ɔ: u: tshò: 'an assembly', tshū:qū: 'a large tent for assemblies
 (of monks)'
 ṛô: 'a help; a helper', šǔ:ṛū: 'a person who stays with
 someone, e.g. a roommate'
- ɔ: e: ṛô: 'help; a helper', phē:ṛò: 'a travelling companion'
 ḷō: 'lungs', šě:ḷō: 'lungs (to be eaten)' (p.)
- ɔ: ɛ: chò: 'direction', chō:Nqē: 'opposite direction',
 jē:cð: 'right'
- ɔ: a: thò: 'roof', thō:qā: '(to) upstairs'
 ṭò: 'to churn (milk)', ṇā:ṭò:
 kǎp 'to churn (milk) while it is sweet'
- ɔ: ø: phò: 'salary', phō:nø: 'extra salary', s̄ø:pò: 'salary' (p.)
- ɔ: ɔ: ô: 'beneath, below', chò: 'direction',
 ø:cð: ḷy: j̣y: 'below: the land of the nagas'

Chart 6

	iN	IN	^N	yN	uN	eN	εN	aN	ϕN	oN
i:	i:	i:-	-i:	i:-	i:-			i:-	e:-	e:-
y:	y:-	y:			y:			y:-		ϕ:-
u:	u:-	-u:		u:		o:-		u:-, o:-		o:-
U:		-U:			U:-					
e:	i-				i:-			e:	-e:	
ε:	I:			-I:	I:-	-ε:	ε:	ε:	ε:-	-ε:
a:	^:-			^:-	^:-	a:-	a:-	a:	a:	a:
ϕ:	y:				y:-	ϕ:	ϕ:-	ϕ:	ϕ:-	ϕ:-
ɔ:	U:-			-U:	U:-	ɔ:-	ɔ:-	ɔ:-	ɔ:-	-ɔ:

Examples to Chart 6

- i: iN thì: 'a line', thīqšī:N 'a ruler; a yardstick'
tsì: 'mathematics', thīNtsì: 'subtraction'
- i: iN mī: 'eye', mīṃmī:N 'eye medicine'
- i: ʌN chī: 'to wipe', qā:Nci: 'a doormat ("foot-wiper")'
- i: yN tsì: 'to calculate', tsī:pȳ:N, tsē:pȳ:N
'a fourth-rank official who, as head of the tsī:qā:N, is
in charge of financial records (census, taxes, etc.)'
- i: uN thī: 'a line', thī:pū:N 'a carpenter's ink marker (a wooden
container)'
- i: aN šī: 'louse', šīqtsā:N 'a louse's nest'
- i: øN tsì: 'to calculate', tsē:pȳ:N, tsī:pȳ:N
'a fourth-rank official who, as head of the tsī:qā:N, is
in charge of financial records (census, taxes, etc.)'
- i: oN ñī: 'two', ñē:tō:N, ñītū:N '2,000'
- y: iN qǎ: 'neck, throat' (p.), qǎ:pì:N 'a pin, brooch' (p.)
ŋȳ: 'money', ŋȳ:Ntsī:N 'a check (receipt for money)'
- y: iN ŋȳ: 'silver', ŋȳ:kī:N 'a silver container for chā:N'
tǎ: kǎp 'to travel', tshīNtȳ: kǎp
'to travel by night'
- y: uN qǎ: 'neck, throat' (p.), qǎ:sù:N
'a charm' (p.)
jǎ: 'place', tḥū:Njȳ: 'birthplace' (p.)

- y: aN qǎ: 'neck, throat' (p.), qǎ:tā:N 'a long necklace, usually of jade' (p.)
 ɲȳ: 'money', ɲȳ:qā:N 'a bank'
- y: oN ɲȳ: 'silver', ɲǒ:šō:N, ɲȳ:šū:N
 'a silver basin'
 ɬȳ: 'to wash', ɬǒ:šō:N, ɬȳ:šū:N
 (1) 'a washbasin', (2) 'a bathtub'
 qǎ: 'neck, throat' (p.), qǒ:qō:N, qǎ:qū:N 'collar' (p.)
- u: iN thù: 'mind' (p.), thū:Ntsī:N nā:N
 'to memorize' (p.)
- u: IN sǔ: 'side', cī:Nsū: 'a sideglance'
- u: yN ɬû: 'six', ɬȳNtù: 'a cycle of six prayers', ɬǔqtȳ:N
 'six or seven'
- u: eN kūqp̄ kù: 'to vomit', kōȳmē:N,
 kūȳmī:N 'nausea'
- u: aN kû: 'to run', kǔ:tā:N 'the way one runs'
 lû: 'sheep', lǔqtsā:N 'a sheep barn'
 tû: 'there is', tǔqā:N, tǒqā:N 'there is, isn't there?'
- u: oN thù: 'mind' (p.), thō:qò:N, thū:qù:N 'thought' (p.)
- ʉ: IN thǔ: 'smoke', cīNtū: 'smoke in the eyes'
- ʉ: uN lû: 'to go back', qhō/qhō: lǔ:lū:N jô:
 mǎrè: He doesn't have time to go back'
- e: iN ɬhè: 'horizontal', ɬhīlī:N 'a horizontal flute'
- e: uN phè: 'to come', phī:qù:N jô: mǎrè: 'It's not their duty to come'

- e: aN phè: 'to come', phē:nā:N rē: ...
 phē:nā:N rē: 'whether (he) comes, or whether (she) comes'
 cê: 'a track, print', qā:Ncè: 'a footprint'
- e: ∅N thě: 'a mule', šǝNtē: 'a mule on which one rides'
- ε: iN tē: 'rice', tī:šī:N 'a rice field'
 tshē: 'vegetable', chīNtsī: 'celery'
- ε: yN kē: 'eight', tǝNkī: 'seven or eight'
 tē: 'rice', jǝ:Ntī: 'local rice'
- ε: uN tē: 'rice', tī:pū:N 'a pile of rice'
- ε: eN tē: 'rice', p.: šǝ:Ntē:
- ε: εN rē: 'cotton cloth', rē:sē:N 'a monk's upper and outer robe
 which is made of cotton'
 tē: 'rice', tshē:Ntē: 'a dish of vegetables, rice, and meat'
 (cf. tshē: 'vegetable')
- ε: aN sē: 'to kill', sē:tā:N 'a way of killing'
 thē: 'a tax', qhā:Ntē: 'house taxes (paid to the landlord)'
- ε: ∅N jē: 'right', jē:jǝ:N 'here and there ("right and left")'
- ε: oN thē: 'tax', tsǝ:Ntē: 'taxes collected by the district
 government', tshō:Ntē: 'sales tax'
- a: iN qā: 'white', qǝNē: qā:tī:N 'egg white'
- a: yN chà: 'hand' (p.), chā:pȳ:N 'yarn' (p.)
- a: uN chà: 'hand' (p.), chā:tū:N 'spear' (p.)
- a: eN mǎ: 'war', māqcē:N 'World War'

- šà: 'dwelling place', šā:Ntsē:N
'people living in the same building'
- a: εN chà: 'hand' (p.), chā:šē:N 'knife' (p.)
- a: aN mǎ: 'butter', mǎ:cā:N 'a bamboo container for storing
butter'
cà: 'iron', qāNcà: 'horseshoes (for the hindlegs)'
- a: øN mǎ: 'butter', mǎ:Ntsǝ:N 'colored butter'
lâ:, lǎqpā 'hand', jǝ:Nlâ: 'a left-handed person'
- a: oN mǎ: 'butter', mǎ:sō:N 'a basin for (squeezing the water from)
butter'
sā: 'new', qǝ:Nsā: 'New Year's' (p.)
- ø: iN pǝ: 'an incense stick', pȳ:Ntsī:N 'an incense-stick holder'
phǝ: 'Tibet', hīNpȳ: 'India and Tibet'
- ø: uN phǝ: 'Tibet', phȳ:šū:N 'the Tibetan government'
- ø: eN chǝ: 'to eat' (p.), sȳ:tùm tI:
chǝ:tè:N sūm tû: 'This meat is enough for three meals'
pǝ: 'incense stick', p.: sēNpǝ:, sīNpȳ:
- ø: εN qǝ: 'to boil', qǝ:Ntē:N 'hot beer with baked barley flour,
sugar, yams, and cheese'
- ø: aN phǝ: 'Tibet', phǝ:cā:N 'Tibetan beer'
jǝ: 'I have', ŋǝ: ŋȳ: qhǎ:Njǝ:
tǎqā jī:N 'This is all the money I have'
- ø: øN chǝ: 'religion', chǝ:lǝ:N 'a good Minister (in stories)'
- ø: oN qǝ: 'to boil', ŋǎ/ŋǎ: qǝ:lō:N mē: 'I don't have time to
boil it'

Vowel Harmony in Spoken Lhasa Tibetan

- o: iN phò: 'salary', phŪ:Ntsĩ:N 'a salary contract'
- o: yN thò: 'time', qỹNtù: 'summertime'
- o: uN thō: 'a hammer', thŭ:cū:N 'a small hammer'
- o: eN thō: 'a hammer', thō:cē:N 'a large hammer'
- o: ɛN thō: 'a hammer', thō:tē:N 'an anvil'
- o: aN tshò: 'an assembly', tshō:qā:N 'an assembly hall'
- o: øN chò: l^ thø:N 'to start out on a journey', p.:
chō:tø:N nā:N
- o: oN sô:, tshō:Nsò: 'articles for sale'

Chart 7⁶

	i	^	u	e	a	o
iN		iN	-iN			
yN		yN-	yN			øN-
uN	-uN	uN	uN			
eN	-iN				eN-	-eN
ɛN	IN		IN	ɛN-	ɛN	ɛN
aN	^N-, aN		^N-, -aN	-aN	aN	aN
øN	yN-		yN	-øN	øN-	øN
oN	uN		uN	-oN	-oN	oN

Examples to Chart 7

- iN i tī:N 'to spread', tīNqī rê: 'he will spread'
- iN ^ rī:N, rīNpā 'the price paid', chāŕī:N 'the price paid for tea' (cf. chā 'tea')
- iN u rī:N 'the price paid', chūrī:N 'the price paid for water' (cf. chū 'water')
- yN i cī:N 'to discipline, tame', cīNqī rê: 'he will tame it'
- yN ^ tŷ:N 'front', tŷNtām 'a seal on the front (of a government document)'
- yN u tŷ:N 'seven', tŷNcū 'seventy', thŷqtŷ:N 'six or seven' pŷ:N 'woof', kŷpŷ:N 'warp and woof' (cf. kŷ 'warp')
- yN o tŷ:N 'front', tŷ:Nsō (K), tŷ:Nsū (N) 'front tooth'
- uN i phū:N 'a pile', chīpū:N 'a sandpile' (cf. chēmā 'sand')
qhū:N 'section, division', mīqū:N 'a section group of people' (cf. mī 'person')
- uN ^ jū:N 'name of a place near Gyangtse',
jūnpā 'a person from jū:N'
qhū:N 'section, division', sāqū:N 'a land division, district'
- uN u phū:N 'a pile' thŷpū:N 'a pile of wheat', (cf. thŷ 'wheat'),
tŷpū:N 'a pile of rocks, stones' (cf. tŷ 'rock, stone')
- eN i šē:N 'to know', qhā:Nšē:N cīšī:N 'whatever one knows'
- eN a thē:N cī:, thēṃmā cī: 'one time'
khē:N 'uphill' (N; K: khē:N), khē:Nmā sà: 'zigzag uphill' (cf. sà: 'slanting')

- eN o šè:N 'to know', ŋöšè:N tã:N 'to introduce'
- ɛN i tshē:N 'night', tshī:Nsim 'sleeping at night'
lě:N 'a reply, message', thīlī:N 'a reply to a question'
- ɛN u cē:N 'eye' (p.), cīNpū 'eyebrow' (p.)
(cf. pū 'hair [of the head]')
mē:N 'medicine', pūmī:N 'medicine for worms' (cf. pū 'worm')
- ɛN e cē:N 'eye' (p.), cē:Nsē 'eyelash' (p.) (K; N: cī:Nsī)
- ɛN a mē:N 'medicine', mē:Nlā 'the god of medicine'
lě:N 'reply, message', p.: qālē:N
- ɛN o tshē:N 'name' (p.), tshēNtō 'a list of names' (p.)
mē:N 'medicine', lōmē:N 'cough medicine'
- aN i qhâ:N 'snow', qhā:nrī 'a snow mountain'
mà:N 'the majority', mīmà:N 'the majority of the people'
- aN u šà:N 'nose' (p.), šā:Nrū 'a snuff container' (p.)
chă:N 'north', nūpcā:N 'northwest'
- aN e lâ:N 'to get up', tēplā:N kǎp 'to rise as a group (e.g. in a revolution)'
- aN a chă:N 'north', chāntā (1) 'a horse from the north', (2) 'a window or door facing the north'
tshā:N 'nest, kennel, barn', phāqtsā:N 'a pigpen'
- aN o chă:N 'north', chānqō 'north gate'
lâ:N 'to get up', rōlâ:N 'a corpse that gets up; an extinguished fire that is rekindled'
- ɸ: i jǒ:N 'left', jȳ:Nrī 'the mountain to the left' (cf. rī 'mountain')

- øN u tsɔ̃:N, tsɔ̃Nqā:N 'prison', tsȳ:Nsūŋʌ 'prison guard'
sɔ̃:N 'seeds', tsȳ:N 'barley seeds'
- øN e kɔ̃:N 'defect; fault; damage', mɛ̃kɔ̃:N
'damage caused by fire'
- øN a tshɔ̃:N 'paint', tshɔ̃Ntā 'multicolored; in color (said of e.g. a photo,
an illustration, movies)'
- øN o tsɔ̃:N, tsɔ̃Nqā:N 'prison', tsɔ̃Ntō 'prisoners' food'
tshɔ̃:N 'paint', tɔ̃tsɔ̃:N, tɔ̃mtsɔ̃:N
'paint made from stone'
- oN i tsō:N 'onion', tsū:Ntī 'the smell of onions'
- oN u tō:N 'thousand', tūNqū 'an assemblage of a thousand statues'
qhō:N 'the price asked', tuqū:N 'the price asked for barley'
(cf. tū 'barley')
- oN e tō:N 'thousand', šētō:N, šītū:N 'four thousand'
(cf. šī 'four')
tsò:N 'a present given to someone who is leaving',
p.: phēptsò:N
- oN a qhō:N 'the price asked', chǎqò:N
'the price asked for tea'
- oN o tō:N 'a white stripe on a horse's nose'
tōŋšōr 'a white stripe that begins on a horse's nose
and runs down its chin'
tō:N 'thousand', sōmtō:N 'three thousand' (cf. sūm 'three'),
tōqto:N 'six thousand' (cf. thū: 'six'), qōtō:N 'nine
thousand' (cf. qū 'nine')

Chart 8

	i:	I:	^:	y:	u:	ʊ:	e:	ε:	a:	ø:	ɔ:
iN		iN	-iN			iN			iN-		
yN		yN-	-yN	yN-	yN-	yN-			yN-		
uN	uN-	uN	-uN		uN-	uN			uN-		
eN	iN-	eN-			iN-			eN-	eN-	-eN	
εN	IN-			IN	IN	IN-	εN-	εN-	εN-	εN	εN
aN	^N-, -aN			^N-	^N-		aN	aN	aN	aN	aN
øN	yN-				yN-		øN-	øN	øN	øN-	øN
oN	uN			uN-	uN-	uN-	oN-	oN	oN	-oN	oN

Examples to Chart 8

- iN I: chĩ:N 'to go', ɲê: chĩ:Ntsl̥: thũ:qĩ
 mĩNtù: 'I never meet anybody when I go', sũ chĩ:Nnĩ:
 'whoever may go'
 rĩ:N 'the price paid', t̥ĩ:rĩ:N 'the price paid for rice'
 (cf. t̥ê: 'rice')
- iN ʌ: rĩ:N 'the price paid', m̥ĩ:rĩ:N 'the price paid for butter'
 (cf. m̥ă: 'butter')
- iN ʊ: chĩ:N 'to go', ɲă chĩNt̥ũ: jĩ:N 'I just went'
 rĩ:N 'the price paid', l̥ũ:rĩ:N 'the price paid for electricity'
 (cf. l̥b̥: 'electricity')
- iN a: jĩ:N ~ rê: 'to be', ph̥qĩ jĩ:Njâ:
 qh̥ĩ:Nrĩ rê: 'a snow mountain is what that is'
- yN I: t̥ĩ:N 'seven', t̥ĩNkĩ: 'seven or eight'
- yN ʌ: th̥ĩ:N 'one prayer in a six-prayer cycle', p.:
 c̥ĩ:t̥ĩ:N
- yN y: k̥ĩ:N 'time', k̥ĩNt̥ĩ: 'regular, permanent'
- yN u: th̥ĩ:N 'one prayer in a six-prayer cycle',
 th̥ĩNt̥ũ: 'a six-prayer cycle' (cf. th̥ũ: 'six')
- yN ʊ: p̥ĩ:N 'woof', p̥ĩNt̥ũ: 'yarn'
- yN a: t̥ĩ:N 'seven', t̥ĩNt̥â: 'a week'
- uN i: thũ:N 'to drink', thũ:Nmĩ: l̥ ʌ m̥at̥p̥:pe:
 'regardless of whether or not they will drink'

- uN I: thù:N 'to drink', ηê: chā:N thū:Ntsɿ:
 kū:pū rê: 'I always drink sour beer; whenever I drink beer,
 it's sour'
 sù:N 'to say' (p.), sū:Nnī: 'even if they said something'
 phū:N 'a pile', t̥ɿ:pū:N 'a pile of rice' (cf. t̥ê: 'rice')
- uN ʌ: phū:N 'a pile', tshā:pū:N 'a pile of tshā:mā [hay with grain]'
- uN u: t̥ù:N 'the tips of young, green barley',
 t̥ū:Nt̥ù: 'a porridge made with the tips of young, green
 barley'
- uN ʊ: ñū:N 'to be sick' (p.), ñū:Nl̥: k̥ɔ̃:N
 'to relapse' (p.)
 phū:N 'a pile', sū:pū:N 'a pile of haystacks; a haystack'
 (cf. s̥ô: 'barley or rice husks', s̥ô:mā: 'stalks of grain')
- uN a: t̥ù:N 'young green barley tops', t̥ū:Ncā: 'a bundle of t̥ù:N'
- eN i: š̥e:N 'to know', qh̥ɔ̃: š̥ī:Nmī: l̥ māt̥ɔ̃:p̥e:
 'regardless of whether or not he will know',
- eN I: l̥e:N 'to get', l̥e:Nnī: 'even if they get it'
- eN u: kh̥e:N 'uphill' (N), kh̥īNt̥ū: 'up and downhill' (N)
- eN ɛ: th̥e:N 'to pull', qh̥ɔ̃: th̥āqpā th̥e:Nts̥e:
 ch̥ī:q̥i: 'whenever you pull the rope, it gets broken'
- eN a: k̥ū: l̥e:N 'to recite lessons', ch̥ā:p̥e k̥ū:
 l̥e:Njā: t̥īNt̥ī: j̥ɔ̃:nā 'if he has to recite lessons in the
 sacred texts'
- eN ɸ: th̥e:N 'time', s̥y:t̥um t̥ī: ch̥ɔ̃:t̥e:N
 s̥um t̥ū: 'This meat's enough for three meals'

- εN i: cē:N 'eye' (p.), cī:Nrī: 'eyeball' (p.)
- εN y: cē:N 'eye' (p.), cīNpy: šy: 'to show' (p.)
tē:N 'diapers', p.: chy:tī:N (N; K: chḡ:tēN)
- εN u: cē:N 'eye' (p.), cī:Nsū: 'a sideglance' (p.)
tē:N 'cushion', p.: šū:tī:N
- εN ʊ: cē:N 'eye' (p.), cīNtū: 'smoke in the eyes' (p.)
- εN e: cē:N 'eye' (p.), cē:Nšē: 'mirror; (eye) glasses',
cē:Nsē: 'jealousy' (p.)
- εN ε: cē:N 'eye' (p.), cē:Nrē: 'an eye around which the skin or
flesh has been injured'
sē:N 'a monk's outer robe', rē:sē:N 'a monk's cotton outer robe'
- εN a: rē:N 'to be suitable', tō rē:Njà: qhi
thý:tsý: 'a suitable time to go'
- εN ø: mē:N 'medicine', mēNcḡ: 'medical treatment',
sḡ:mē:N 'medicine' (p.)
- εN ɔ: mē:N 'medicine', mēNšō: 'paper for wrapping medicine; toilet
paper'
tē:N 'a cushion', thō:tē:N 'an anvil' (cf. thō: 'hammer')
- aN i: qhâ:N 'snow', qhǎ:Nrī: 'a snowball'
tshâ:N 'nest, kennel, barn', chý:tsâ:N 'a birds nest'
- aN y: nâ:N 'to do', nǎ:Ntý: 'when one does something'
- aN u: qhâ:N 'snow', qhǎ:Nšū: tã:N 'to ski'
- aN e: qhâ:N 'snow', qhǎ:Nšē: 'snowglasses'
pâ:N 'a line', sē:pâ:N 'a parade'

- aN ε: šà:N 'nose' (p.), šāNqè: kǝ:N 'to speak nasally' (p.)
 lâ:N 'to get up', qhō lǎ:Ntsè: chī: t̥hɿ:qì:
 'He always gets up late'
 tsà:N 'material wrapped around something to prevent it from
 breaking', phě:tsà:N 'wool used as tsà:N'
- aN a: chǎ:N 'north', chǎŋšā: 'northeast'
 šà:N 'nose' (p.), šā:Ntā: 'snuff' (p.)
 tshā:N 'nest, kennel, barn', phǎ:tsā:N 'a cow barn'
- aN ø: chā:N 'beer', chā:Nnǝ: 'a container for beer'
 tshā:N 'nest, kennel, barn', qǝ:tsā:N 'a vulture's nest'
- aN ɔ: chǎ:N 'north', chǎŋt̥ɔ: 'a nomad from the north'
 tshā:N 'nest, kennel, barn', qhɔ:tsā:N 'a condor's nest'
- øN i: tǝ:N 'to take out', t̥y:Ntsi: nā:N 'to plan to take (things)
 out'
- øN I: qhǝ:N 'to wear', qhǝ:Nnī: 'even if they wear it'
- øN u: sǝ:N 'seeds', s̥yNqu: 'a seed bag (used in sowing)'
- øN e: šǝ:N 'to ride', šǝNtē: 'a mule on which one rides'
- øN ε: jǝ:N 'left', jǝ:Nt̥ē: 'left side'
 sǝ:N 'seeds', t̥ě:sǝ:N 'rice seeds'
- øN a: jǝ:N 'left', jǝ:Nlā: 'a left-handed person'
 tshǝ:N 'paint', p.: cǎ:tsǝ:N
- øN ø: qhǝ:N 'to wear', pāqɔ: qhǝ:Nsǝ:
 'the custom of wearing a pāqɔ: head ornament'
- øN ɔ: mǝ:N name of a place, mǝ:Nšɔ: 'paper from mǝ:N'

- kǝ̃:N 'a defect; fault; damage',
 lǝ̃:kǝ̃:N 'damage caused e.g. by demolition or an earthquake'
- oN i: jō̃:N 'to come', qhō̃ jǔ:Nmī: l^
 mā̃tǝ̃:pɛ: 'regardless of whether or not he will come'
 tshō̃:N kǝ̃p 'to engage in trade', sī:tsū:N kǝ̃p
 'to sell in small quantities; to sell retail'
- oN y: jō̃:N 'to come', jǔ:Ntỳ: 'when he came'
- oN u: tǝ̃:N 'face', tǔ̃tù: 'a collision'
- oN U: jō̃:N 'to come', ɲǎ̃ nǎ:N l^
 jǔ:Ntū̃: jǝ̃: 'I'm coming home right away'
- oN e: sǝ̃:N 'a carpenter's chisel', sǝ̃:Nlè:
 'a flat chisel: used by goldsmiths and blacksmiths, to
 cut iron'
- oN ɛ: thō̃:N 'to see', pū̃qū̃ tī: thō̃:Ntsɛ̃:
 tǔ̃:qì: 'That child picks up whatever he sees'
 qhō̃:N 'the price asked', nē̃:qò:N 'the cost'
- oN a: tsō̃:N 'onion', tsō̃:Ncà: 'a bundle of (green) onions'
 qhō̃:N 'the price asked', mǎ̃:qò:N
 'the price asked for butter'
- oN ø: t̃sō̃:N 'onion', phǝ̃:tsō̃:N 'a green ("Tibetan") onion'
- oN ɔ: tsō̃:N 'onion', tsō̃:Ntò: 'the white, bulbous part of a
 green onion'
 tshō̃:N kǝ̃p 'to trade', šǝ̃:tsō̃:N 'a morning sale'

Chart 9

	iN	IN	^ N	yN	uN	υN	eN	εN	aN	ϕN	oN
iN	iN	-iN	-iN	-iN	-iN	-iN					
yN	yN-				yN						ϕN-
uN					uN						
eN							eN		-eN	-eN	
εN	-IN			IN-	IN-				εN	εN-	
aN	^ N-				^ N-			aN-	aN		aN
ϕN					yN-		ϕN-	-ϕN	ϕN	ϕN	ϕN
oN	uN-			-uN			oN-		oN-	oN	

Examples to Chart 9

- iN iN chĩ:N 'to go', chĩ:NcĩNpA chē: 'to keep on going, walking;
to walk continuously'
- iN iN tsĩ:N 'a certificate', qhĩNtsĩ:N 'a promissory note, an I.O.U.'
- iN ^N rĩ:N 'the price paid', chā:Nri:N 'the price paid for barley
beer'
- iN yN tsĩ:N 'a certificate', ŋy:Ntsĩ:N 'a money order'
- iN uN tsĩ:N 'a certificate', chũ:Ntsĩ:N 'a receipt'
- iN vN tsĩ:N 'a certificate', phũ:Ntsĩ:N
'a salary agreement; a paycheck (cf. phò: 'salary')
- yN iN kŷ:N 'a period of time', kŷ:Nri:N
'a long time'
- yN uN pŷ:N 'a profit half as great as the capital invested',
pŷNtsũ:N 'a transaction in which one makes a profit half as
much as the capital invested'
tŷ:N 'front', p.: qũNtŷ:N
- yN oN tŷ:N 'seven', tŷNtō:N '7,000'
- uN uN chũ:N 'to get', chũpA tĩ sǒjà: l^
n^Npũ qhǎ:N chũ:Ncũ:N qhi
tĩqĩ mǎrè: 'not just any n^Npũ you can get will do for making
this robe'
- eN eN thāmà: thè:N 'to smoke', thXrĩ ŋē:
thāmà: thē:Ntè:N cì: lI: mhātè:N
'I smoked only one cigarette today'

- eN aN šè:N 'to know', qhǎ:Nšè:N cīšī:N
'whatever one knows'
- eN øN thè:N 'time', ŋê: chūp̄ tī qhǎNtè:N
cì: lI: mǎq̄:N 'I only wore this dress once'
- ɛN iN tshē:N 'evening', ñĩNtsī:N 'day and/or night'
- ɛN yN mē:N 'medicine', mīNty:N 'a dose of medicine'
- ɛN uN mē:N 'medicine', mī:Nšū:N 'a manual for making medicine;
a medical book'
- ɛN aN tshē:N 'night', tshēNqa:N 'the whole night'
tē:N 'a cushion', qā:Ntē:N 'a door mat'
- ɛN øN qē:N 'old', qē:Nšǝ:N 'age'
- aN iN sâ:N 'copper', sǎ:Ntī: 'a copper teapot'
- aN uN sâ:N 'copper', sǎŋpū:N 'a copper vase'
- aN ɛN sâ:N 'copper', sǎ:Nkē:N 'a copper pitcher'
- aN aN chā:pā tā:N 'to rain', chā:pā tā:NtāNp̄
chê: 'to keep on raining'
- aN oN chǎ:N 'north', chǎ:Ntò:N 'the northern wasteland ("the empty
north")'
tshā:N 'nest; kennel; barn', phǒ:Ntsā:N
'a donkey barn'
- øN uN tshǝ:N 'weapons', tshy:Nsù:N 'an amulet to protect one from
harm by weapons'
- øN eN qhǝ:N 'to wear', ŋê: chūp̄ tī qhǎNtè:N cì:
lI: mǎq̄:N 'I only wore this dress once'

- $\emptyset$ N ϵ N š̌:~N 'young', q̌:~Nš̌:~N 'age'
 $\emptyset$ N aN tsȟ:~N 'paint', qhā:Ntš:~N 'housepaint'
 qȟ:~N 'to wear', qȟ:Ntā:N 'a way of wearing something'
 $\emptyset$ N $\emptyset$ N qȟ:~N 'to wear', qȟ:~N chūp̌ qȟ:~N qȟ:Nq̌:~N tū: 'He has all
 kinds of clothes to wear'
 $\emptyset$ N oN tsȟ:Nq̌:~N 'a bowl for mixing paint'
 š:~N 'seeds', tš:~Nš:~N 'onion seeds'
oN iN tš:~N 'onion', tš:~Nš̌:~N 'onion field'
oN yN ť:~N 'thousand', ť:Ntū:N, ť:Nť:~N
 'seven thousand'
oN eN ť:~N 'face', ť:Nľ:~N 'the front (line)'
oN aN ť:~N 'face', ť:Nš̌:~N 'the width of ones face'
oN $\emptyset$ N tš:~N 'onion', tš:~Nš:~N 'onion seeds'
 ť:~N 'thousand', ť:Nť:~N 'seven thousand'

Vowel-harmony rules

The rules for vowel harmony exemplified above do not apply uniformly to all morphological units. Adjectives, verbs, and their affixes follow one rule: raising. Thus, we have, for example, V ñǎ, ñǎqĩ (Chart 1), V chě, chĩṭũ: (Chart 2), and A thō, thūqĩ (Chart 1). We have described this as involving six pairs of vowels (1964:46). The six lower vowels we called 'nonhigh', the six higher vowels 'high':

high	i	I	ʌ	y	u	U
nonhigh	e	ɛ	a	ø	o	ɔ

The 'nonhigh' vowels are raised to 'high' when the vowel of either the preceding or following syllable is 'high'.

Nouns and their affixes and, more often than not, nouns in composition, follow the same rule of raising. For example: khū 'flock, swarm, herd', -pā 'masculine' : khūpā 'a male yak used for breeding'; ṭhĩ 'knife', tsē 'tip, peak' : tsĩṭĩ 'bayonet'.

Nouns in composition, on occasion, however, exhibit lowering in the first syllable (e.g. mĩ, mēNqō [Chart 1], rĩ, rěṭø: [Chart 2]). So,

i	→	e / e, o; e:, ɛ:, ø:; øN, oN (Charts 1, 2, 3)
u	→	o / e, o; e:, ɛ:, a:, ø:; øN, oN (Charts 1, 2, 3)
i:	→	e: / e:, ø:; øN, oN (Charts 5, 6)
u:	→	o: / e, o; e:, ø:; aN, oN (Charts 4, 5, 6)
U:	→	ɔ: / ɛ: (Chart 5) ⁷
y:	→	ø: / e:, a:, ø:;, oN (Charts 5, 6)
yN	→	øN / o, oN (Charts 7, 9)

For nouns, we cannot predict on any phonological basis whether raising or lowering will take place. We have, for example, mĩ 'person', tshē 'life' : mĩtsĩ, mētsē 'human life', but rĩ 'mountain', tsē 'tip, peak' : rĩtsĩ 'mountain peak' (never *rětsē); mĩ 'person', thō 'list' : mĩtū 'a list

of people', but mĩ 'person', qǒ 'head' : mǎNqō 'human head'. The occurrence of lowering, as a diacritic feature, will thus have to be marked for nouns in the lexicon. Moreover, it will have to be marked for different idiolects (dialects?): cf. thě̀nè: (N), tĩ̀nĩ: (K) 'then'; qū̀pkà: (N) qṑpkà: (K) 'chair'. On the basis of elicited forms, lowering would seem to be far more frequent in Mrs. Karsip's speech than in Mr. Nornang's. In taped conversations, however, there are fewer differences of this sort. Mr. Nornang says, for instance, that he says rū̀p̃̃:N 'an army officer in charge of a line, or wing, of soldiers'; and yet, in talking with Mrs. Karsip, he says rṑp̃̃:N (Chart 3). Possibly he says both, on different occasions, and in speaking with different people. It is probably also true that he is more conscious of the written tradition than Mrs. Karsip.

The occurrence of lowering frustrates us in our hope that we might be able to determine which is basic in such alternants as qhǒ- ~ qhǔ- in qhǒtē:, qhǔỹ̀: (p. 3). A basic qhǔ- could be lowered before ε: (cf. cū̀, cṑpkē:, Chart 2); a basic qhǒ- would be raised before U: (cf. tǒ̃, tǔ̃t̃̃:̃, Chart 2). In alternations of I and ε, a and ʌ, we can, however, say that ε and a are basic, since we have no instance of I lowering to ε, or ʌ lowering to a.

The exceptions to these two rules, raising and lowering (cf. Chart 4, column 1) involve morphological units ending in enclitics (see §4, External sandhi). Here there is no vowel harmony.

Among adjectives and nouns, there are a few instances where we have a morphophonemically 'nonhigh' vowel in the base and would expect a morphophonemically 'nonhigh' vowel in the affix or other member of the compound; instead, we have what we can only term unmotivated raising in both syllables, e.g.: cǎ̃j, cǎ̃Nqū 'green' (cf. yǎ̃j, yǎ̃Nqō 'light', cā̃j, cā̃Nqō 'alert, intelligent', šā̃j, šā̃Nqō 'frank', thā̃j, thā̃Nqō 'stiff', thǎ̃j, thǎ̃Nqō

'honest'); ʈhǎŋ, ʈhǎNqū 'cold' (cf. ʈhǎŋsā 'a cold place'); phǎNqū 'donkey' (cf. phāpō:N 'male ["father"] donkey', sǎŋpō:N 'a donkey from sǎlī:N').

3. Internal sandhi without consonantal interruption.

The above data on internal sandhi with consonantal interruption raises a question. Why does I cause raising in rǎpsǎ: 'drunkard', but not in nǎnǎ: 'even if he were sick' (Chart 2)? If I ever causes raising, it should do so here: the vowels of verb bases are regularly raised before affixes with any vowels which can cause raising.

The answer to this question lies in a type of internal sandhi without consonantal interruption. This has two main subtypes, (1) the a-type, and (2) the i-type.

(1) a-type

i-ǎ/a	→	I:
e-ǎ/a	→	ɛ:
ʌ-ǎ/a	→	a:
a-ǎ/a	→	a:
u-ǎ/a	→	U:
o-ǎ/a	→	ɔ:

(2) i-type

i-i	→	i:
e-i	→	e:
ʌ-i	→	I:
a-i	→	ɛ:
u-i	→	y:
o-i	→	ø:

Evidence of an u-type sandhi occurs in the alternation of ʌu with U: in qhǎū 'charmbox', p.: qǎ:qū:. -CV in a second syllable may alternate with -V in a third, often less stressed, syllable: for example, -pa ~ *-ǎ

(p. 65), $l\check{\alpha} \sim *-a$ (p. 67). Assume, for a moment, that there was such an alternation in the case of $qh\check{\alpha}\bar{u}$, $q\check{y}:q\bar{u}$: when the u-type sandhi operated. That is, -Cu in a second syllable alternated with -u in a third: $qh\check{\alpha}\bar{u} \leftarrow *qh\check{\alpha}b\bar{u} \leftarrow *qh\check{\alpha}b\bar{u}$; $q\check{y}:q\bar{u} \leftarrow *q\check{y}:qh\check{\alpha}\bar{u} \leftarrow *q\check{y}:qh\check{\alpha}\bar{u} \leftarrow *q\check{y}:qh\check{\alpha}b\bar{u}$.

As the first member of a compound, the alternant of $qh\check{\alpha}\bar{u}$ (of $qh\check{\alpha}-$?) is $qh\check{\alpha}p- \sim qh\check{\alpha}p-: qh\check{\alpha}pt\check{\alpha}$: 'a string for a man's charmbox'; $qh\check{\alpha}pts\check{\epsilon}$: 'the contents of a charmbox', $qh\check{\alpha}pts\check{y}$: 'an "artificial" charmbox, i.e. a large brooch worn instead of a charmbox'. In certain compounds there is a medial p which does not occur with either member of these compounds in isolation. In some cases, it is impossible to determine to which morpheme the p belongs. It seems likely, however, that an intervocalic labial can be assigned to 'charmbox'. In 'Spoken Tibetan morphophonemics: p', we asked whether the p was an alternant of the - $\bar{u}$ of $qh\check{\alpha}\bar{u}$. We should now say, rather, that it is the -b- of $*qh\check{\alpha}b\bar{u}$.

There is further support for the assumption of an intervocalic consonant which was lost in some cases before, and in others after, the operation of internal sandhi on two contiguous vowels. This consonant has no overt reflex in spoken Tibetan; certain of the written Tibetan forms do show a -b-. We shall, then, tentatively posit a *-b- for the following forms:

- (1) $*l\bar{o}b\bar{a}$ (WT globa) $\rightarrow l\bar{o}$: 'lungs'
- (2) $*t\check{h}\bar{o}b\bar{a}$ (WT broba) $\rightarrow t\check{h}\bar{o}\bar{a}$ 'taste' (p.: $c\check{\alpha}:t\bar{o}$.)
- (3) $*q\bar{o}b\bar{a}$ (WT koba) $\rightarrow q\bar{o}$: 'leather; skin boat' (p.: $ph\bar{e}p\bar{q}\bar{o}$)
- (4) $*p\bar{a}b\bar{o}$ (WT pabo) $\rightarrow p\bar{a}\bar{o}$ 'a heroic man; a brave warrior'
- (5) $*t\check{h}\bar{u}b\bar{a}$ (WT duba) $\rightarrow t\check{h}\bar{u}$: 'smoke' ($c\bar{i}n\bar{t}\bar{u}$: 'smoke in the eyes' [p.])
- (6) $*qh\check{\alpha}b\bar{u}$ (WT gau) $\rightarrow qh\check{\alpha}\bar{u}$ 'charmbox' (p.: $q\check{y}:q\bar{u}$.)

The situation we assume has several stages. In the earliest, *-b- is lost in the second intervocalic position: $*c\check{\alpha}:t\check{h}ob\bar{a}$ 'taste' (p.) $\rightarrow$

*cǎ:thōā; *cĪNthūbā 'smoke in the eyes' (p.) → *cĪNthūā; *qǎ:qhǎbū 'charm-box' (p.) → *qǎ:qhāū. In either the same stage, or the next one later, -b- is lost in the first intervocalic position in certain morphemes:
 *lōbā 'lungs' → *lōā; *qōbā 'leather; skin boat' → *qōā; *thūbā 'smoke' → *thūā.

With the loss of the -b-, there are now two contiguous vowels which are subject to the operation of the internal sandhi rules formulated above on p. 61. Thus, *cǎ:thōā → cǎ:t̃ō:, *cĪNthūā → cĪNtū:; *qǎ:qhāū → qǎ:qū:, *lōā → lō:, *qōā → qō:, *thūā → thū:.⁸

Whatever the time span over which this rule operated, it was limited. After it had ceased to operate, the *-b- was lost in other morphemes, but here hiatus remained: *thōbā 'taste' → thōā; *pābō 'a heroic man; a brave warrior' → pāo; *qhǎbū 'charmbox' → qhāū.

We excluded from the charts and accompanying examples in §2 such alternants as qō: 'skin boat' ~ -qō (in phēpqō 'skin boat' [p.]). We infer (1) that compounds with the nonsandhi, single-vowel alternant, such as phēpqō, antedate the operation of internal sandhi without consonantal interruption, and (2) that *qōbā was made up of two morphemes, noun base and affix, and that only the noun base entered into composition (cf., for example, chā:pā 'rain', lhāqpā 'wind', chā:lā: 'rain and wind'). The two morphemes of *qhǎbū 'charmbox', on the other hand, are both nouns; this noun compound thus entered into a secondary compound with qǎ: 'throat' in qǎ:qū: 'charmbox' (p.).

To establish the independence of vowel-sandhi and tone, we have arranged the evidence below according to the tone of the resulting sequence (a-type: I.A, B; II.A, B; i-type: I.C, II.C). Attested absence of stress correlates with falling tone (I.A.); attested presence of stress correlates with level tone (II.A.). Falling tone then implies absence of stress

(I.B, I.C), level tone its presence (II.B, II.C).⁹

I. $V-\check{V} \rightarrow \hat{V}$: ($\check{V}$ = unstressed; V = level stressed; $\hat{V}$ = falling stressed)¹⁰

A. $-p\check{\Lambda} \sim -\check{\Lambda}$

Occurrence: (1) after adjective bases, to form a comparative

(2) after verb bases, to form the habitual

Examples: (1) $ch\bar{a}:N\ thi\ qh\bar{a}q\ t\hat{h}\bar{a}:p\Lambda\ r\hat{e}$: 'This beer is too bitter'

$ch\bar{a}:N\ thi\ qh\bar{a}q\Lambda\ t\check{u}q\check{l}:$? 'Is this beer more bitter?'

(2) $s\check{\phi}:p\Lambda\ r\hat{e}$: 'They made it'

$s\check{\phi}\ th\bar{u}:p\Lambda\ r\hat{e}$: 'They were able to make it'

$s\check{\phi}:n\bar{a}:Np\Lambda\ r\hat{e}$: 'They made it' (p.)

$s\hat{o}:n\bar{a}:Np\Lambda\ r\hat{e}$: 'They used to make it' (p.)

$-p\Lambda$ occurs, for instance, after bases ending in front nasalized vowels;

$-\Lambda$ occurs after consonants; bases which end in a single oral vowel show sandhi combinations, as in examples 7-11 below.

Base	Comparative/Habitual	
1. $q\check{e}:N$	$q\check{e}Np\Lambda$	'old'
$qh\check{\phi}:N$	$qh\check{\phi}Np\Lambda$	'to wear'
2. $t\hat{e}$:	$t\hat{e}:p\Lambda$	'old' (p.)
$\check{s}\hat{e}$:	$\check{s}\hat{e}:p\Lambda$	'to receive'
3. $m\check{a}\eta$	$m\check{a}\eta\Lambda$	'many'
$p\check{a}\eta$	$p\check{a}\eta\Lambda$	'to renounce'
4. $ch\grave{o}$:	$ch\grave{o}:-\Lambda \rightarrow ch\bar{o}q-\Lambda \rightarrow ch\bar{o}q\Lambda$	'to allow'
5. $\eta\bar{a}$:	$\eta\bar{a}:-\Lambda \rightarrow \eta\bar{a}r-\Lambda^* \rightarrow \eta\bar{a}r\Lambda$	'sweet'
$ph\bar{y}$:	$ph\bar{y}:-\Lambda \rightarrow ph\bar{y}r-\Lambda \rightarrow ph\bar{y}r\Lambda$	'to give' (p.)
6. $p\bar{a}r$	$p\bar{a}r-\Lambda \rightarrow p\bar{a}r\Lambda$	'to increase'
7. $c\check{i}$	$c\check{i}:-\Lambda \rightarrow c\hat{i}:$	'heavy'
$r\check{a}\ s\check{i}$	$r\check{a}\ s\check{i}:-\Lambda \rightarrow r\check{a}\ s\hat{i}:$	'to become intoxicated'

Base	Comparative/Habitual	
8. qhē	qhē-^ → qhè:	'cheap'
sě	sě-^ → sê:	'to say; to be called'
9. mā	mā-^ → mà:	'high'
sê:, sǎ	sǎ-^ → sâ:	'to eat'
10. qõṅpa šy:, šũ	šũ-^ → šũ:	'to ask for leave'
11. thō	thō-^ → thò:	'high'
chì:N, tǒ	tǒ-^ → tò:	'to go'

B. -pa ~ *-ǎ

Occurrence: -pā occurs after monosyllabic nouns; nouns of more than one syllable show sandhi combinations which we know from I.A. to be the result of V-ǎ.

Examples:

- | | | |
|--------------------------|---|--|
| 1. ṅā 'a drum' | : | ṅāpā 'a drummer' |
| ē n. of a town | : | ēpā 'a person from ē' |
| tû: 'Bhutan' | : | tûṅpā 'a Bhutanese' |
| 2. phārī n. of a town | : | phārī-^ → phārì: 'a person from phārī' |
| 3. kǎṅtsē 'Gyangtse' | : | kǎṅtsè: 'a person from Gyangtse' |
| 4. qūmā 'theft' | : | qūmà: (N), qōmà: (K) 'thief' |
| 5. lāptā 'school' | : | lāptà: 'a student' |
| 6. tshīNpū 'a stitch' | : | tshīNpù: 'a tailor' |
| 7. thǒmō 'Chumbi Valley' | : | thǒmò: 'a person from thǒmō' |

C. qhǐ ~ *-ĩ

Occurrence: Nouns that end in consonants, nasal, or geminate oral vowels occur with the particle qhi in the genitive and instrumental,

with the particle $l\wedge$ in the dative. Monosyllabic nouns in a single oral vowel also usually occur with $l\wedge$ in the dative. Otherwise, final single oral vowels occur in sandhi combination with $*-i$ (instrumental), $*-i$ (genitive), and $*-a$ (dative).

Examples:

	Nominative	Instrumental
	1. thě: , chēptē: 'mule' (n.p. and p.)	thě: qhi , chēptē: qhi
$i-i \rightarrow \hat{i}$:	khī , sīmkī 'dog' (n.p. and p.)	khī: , sīmkī:
$e-i \rightarrow \hat{e}$:	cē 'tongue', qhācē 'Muslim'	cē: , qhācē:
$\wedge-i \rightarrow \hat{i}$:	tūqpā 'a Bhutanese'	tūqpā:
$a-i \rightarrow \hat{e}$:	chā , sḥ:cā 'tea' (n.p. and p.)	chē: , sḥ:cē:
$u-i \rightarrow \hat{y}$:	chū 'water', khāqcū 'water left to form ice'	chỳ: , khāqcỳ:
$o-i \rightarrow \hat{o}$:	tō 'stone', tā:tō 'a whet-stone'	tḥ: , tā:tḥ:

II. $V-V \rightarrow VV$ A. $-a$

Occurrence: after noun bases (restricted in number and in phonetic makeup)

Examples:

- $\text{chēq-a} \rightarrow \text{chēqā}$ 'half' (cf. lōpcē: 'half a year', qhā chē:tō '1½ qhā [a unit of measure]')
- $\text{thāṅ-a} \rightarrow \text{thāṅā}$ 'rosary' (cf. chā:Ntā:N 'rosary' [p.])
- $\text{jḥl-a} \rightarrow \text{jḥlā}$ 'a covering' (cf. thājḥ: 'curtain', tājḥ: 'a curtain behind a target')
- $\text{qāl-a} \rightarrow \text{qālā}$ 'share' (cf. qūqī: 'share' [p.])
- $\text{thēl-a} \rightarrow \text{thēlā}$ 'dust' (cf. qhōtē: 'ashes')

2. qā-a → qā: 'pillar' (cf. qātū:N 'a short pillar', qāpšī 'a room with four pillars', qāpkā: 'a base for a pillar')

thū-a → thū: 'smoke' (cf. thūqū:N 'a chimney', thūpsù: 'asphyxiation')

cū-a → cū: 'yak dung' (cf. cūqā:N 'a room for storing yak dung', cūptī 'the smell of yak dung')

qō-a → qō: 'leather; a skin boat' (cf. qōtē: 'a leather plate', qōplā 'skin-boat fare')

B. l̃ ~ *-a

Occurrence: cf. I.C.

Examples:

	Nominative	Dative
	1. thě:, chēptē:	thě: l̃, chēptē: l̃
i-a → I:	2. khī, simkī	khī l̃, simkī:
e-a → ε:	3. cē, qhācē	cē l̃, qhācē:
ʌ-a → a:	4. tūqp̃	tūqp̃:
a-a → a:	5. chă, s̃: cā	chă l̃, s̃: cā:
u-a → u:	6. chū, khāqcū	chū l̃, khāqcū:
o-a → o:	7. tō, tă:tō	tō l̃, tă:tō:

C. qhī ~ *-i

Occurrence: cf. I.C.

Examples:

	Nominative	Genitive
	1. thě:, chēptē:	thě: qhi, chēptē: qhi
i-i → i:	2. khī, simkī	khī:, simkī:

e-i → e:	3. cē, qhācē	cē:, qhācē:
ʌ-i → I:	4. tǔqpʌ	tǔqpī:
a-i → ε:	5. chǎ, sǝ:cē	chě:, sǝ:cē:
u-i → y:	6. chū, qhāqcū	chȳ:, qhāqcȳ:
o-i → ø:	7. tǔ, tǎ:tō	tǔø:, ta:tǔø:

in the lists of sandhi combinations (p. 60), we see that the nonhigh vowels I: and ʊ, which function morphophonemically as high, originate in sequences whose first members are, phonetically, the highest vowels in their respective places of articulation--i, u, and ʌ. (Statements on the absolute height of the Tibetan vowels must await laboratory study.) We infer from this that the operation of vowel harmony preceded that of sandhi. Thus, in rǎpsǎ: 'drunkard', which is derived from rǎ sǎ 'to become intoxicated' plus the noun-forming suffix -ʌ, raising is due to the underlying -i-. In the case of nǎnī: 'even if he were sick', yet another type of sandhi, less well documented, is at work. The first vowel in the underlying sequence is clearly nonhigh a, and thus there was no raising. (As to the second vowel, we are confronted with a sandhi phenomenon beyond which we cannot go on the basis of the spoken data: nǎnī: 'even if he were sick' seems obviously to be derived from nǎnā 'if he were sick' and ī 'also; even'; cf. also qhǎ mǎntù: 'there isn't any', qhǎ qhī: mǎntù: 'there isn't any at all', where the qhī: is obviously derived from qhǎ-ī.)

4. External sandhi.

Earlier (pp. 1-3) we set up certain tentative formal criteria for morphological units as opposed to syntactic sequences. In some cases, e.g. noun compounds, all of these marks may appear. There are, however, three categories of varying degrees of ambiguity, where one of the marks appears, but the other is absent. The absence of such a mark blurs the distinction between what is and what is not a morphological unit.

(1) In the first of these, $m\check{a}Nt\bar{o}$: ~ $m\check{a}Nt\bar{u}$: 'except', there is an optional harmonic alternation (raising). This seems to extend beyond the boundaries of both the morphological and the syntactic unit. That is, though $m\check{a}Nt\bar{o}$: is linked syntactically to what precedes it, the optional raising of both its vowels (a- $\bar{o}$: ~ $\wedge$ - $\bar{u}$:) is probably occasioned by a high vowel in the following word: in 2.b. below, it is undoubtedly $l\check{u}np\bar{\wedge}$, not $l\wedge$, that causes the raising, since there is no other instance of an unstressed $\wedge$ causing raising.

Examples of $m\check{a}Nt\bar{o}$: ~ $m\check{a}Nt\bar{u}$: (N; K has $m\check{e}Nt\bar{o}$: only)

1. $m\check{a}Nt\bar{o}$:

- a. $l\check{e}:n\bar{e}$ $ch\bar{u}p\wedge$ thi $qha\check{s}\bar{e}$: $m\check{a}Nt\bar{o}$: $\check{s}\bar{e}:N$ 'except for some minor caretakers'
- b. $t\check{i}$ $m\check{a}Nt\bar{o}$: $\check{s}\bar{e}:N$ 'except for this'
- c. $th\check{y}:s\bar{a}:N$ $l\wedge$ $m\check{a}Nt\bar{o}$:, $n\check{a}mk\bar{y}$: ... 'ordinarily, except for holidays ...'

2. $m\check{a}Nt\bar{u}$:

- a. $t\check{u}ts\bar{i}$: $m\check{a}Nt\bar{u}$: $t\bar{\wedge}$, $ph\bar{\wedge}qts\bar{i}$: $c\bar{i}$ $\bar{i}$ $j\hat{o}$: $m\check{a}r\bar{e}$: 'It doesn't even have one mud wall--just stone walls'

- b. tsā:N taa lhā:sē: pā:rū: l^ mǎntū: lǔp^ šānpā: thǎ thǔqlū:
 šītā: mǎntā: qhI: ā jǒ:, qhǎntā:N 'Aside from that between
 Tsang and Lhasa, I don't suppose there's any great difference
 in the clothes of other places, that is, in the way they
 dress'

but

- c. qhāšē: nǎ:N l^, ɣāts^ tǐntǐ: mǎntō: mhācū:ñI: Ī jô: rê:
 'Some don't hold more than perhaps five.'

(2) The topic marker (-)tā is usually raised to t̄ after high vowels; tone sandhi usually occurs, but not always. For example: pāntē:N t̄ā 'as for pāntē:N', tǐ: t̄ā 'as for that', tsò:N 'selling', tsō:Ntā 'as for selling', jǔ:t̄y: 'when I had it', jǔ:t̄y:t̄ā 'as for when I had it', but lhāqpā kǎ:t̄y: 'when the wind blew', lhāqpā kǎ:t̄y: t̄ā 'as for when the wind blew'.

(3) In another category, there are instances of tonal alternation with no vowel harmony, specifically no raising before a high vowel. The two members of this category are the complex suffix -nī: (-nā 'if' plus Ī 'also, even') and the enclitic topic marker (-)nī (which, like mǎntō:, may be in construction either with a preceding noun or a preceding clause). For example: ñīmī: qǔ:N l^ nī 'as for during the day'; cītā: 'and so forth', cītā:nī; qhāšē: 'some', qhāšē:nī; jǒ:nā 'if I had it', jǒ:nānī (but also jǒ:nānī and mē:nā 'if I didn't have it', mē:nānī).

The explanation for the absence of raising before -nī: 'even if' we found in the posited sequence of sandhi as following vowel harmony. A similar explanation for -nī, in terms of order, would be that encliticization follows vowel harmony. (For -nī:, both encliticization and sandhi follow vowel harmony.) This would certainly be true of the synchronic order of the application of rules. This item of order, however, would not

necessarily have historical validity. Vowel harmony and encliticization may have been simultaneous, if the sphere of applicability of vowel harmony was grammatically limited, so that it did not include enclitics. Moreover, the sandhi of $-n\bar{i}:(\bar{i}: < a-i)$ must follow the major types of sandhi (the a-type and the i-type, p. 60), since i only came into being through the latter processes.

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Footnotes

¹ The informants on whose speech this paper is based are Mr. Nawang Nornang and Mrs. Ihadon Karsip. We first worked with them from 1960 to 1963 at the University of Washington, under an N.D.E.A. contract. Again, in 1964, 1966, and 1967, we worked with Mr. Nornang, under grants from the University of California's Committee on Research. The preparation of this paper was also supported in part by National Science Foundation Grant GS1430.

² The vowels of this system are: i, e; I, ε; ʌ, a; y, ø; u, o; ʊ, ɔ. For I and ʊ we first used é and ô (in e.g. A manual of spoken Tibetan), to suggest a perceptual closeness to e and o. To eliminate double diacritics, we have made a number of changes in the transcription we use here:

Here	<u>Manual</u>
I	é
y	ü
ø	ö
ʊ	ô
j	y
Nasalization	
VN	ñ
Length	
V:	VV
Tone diacritics (V = vowel)	
̄V (high)	̄V

Ǟ (low)

v

Ǟ: (low falling)

ṽ

Ǟ: (high falling)

ṽ̃

Abbreviations we use in this paper are:

- A adjective base
- C consonant
- K (a form used by Mrs.) Karsip
- N (a form used by Mr.) Nornang
- V verb base; vowel
- WT written Tibetan
- n.p. not polite (not honorific)
- p. polite (honorific)

³ The distinction between morphological units and syntactic sequences is a crucial one. The failure to recognize such a distinction--a failure, fundamentally, to recognize the role of tone and stress alternations in marking the distinction--leads Sprigg, for example, to find a false 'overlap of phonetic feature as between the Close and the Open Piece' (1961:127) in the case of 'phebs tshar-'dug (tsha:du), not *tsh^h:du' (1961:130). In our transcription, this sequence is phè: tshā: tû: (with secondary stress on tû:). If tshā: and tû: formed one morphological unit, we would expect vowel harmony, and tone sandhi as well (i.e. *tshā:tù:). But they do not; this is a syntactic sequence of morphological units, not a complex morphological unit made up of two morphemes.

⁴ Our approach is not that of Sprigg (1961), who opposes treating either alternating member of a pair of vowel terms as 'somehow basic, or a norm' (1961:137). If other things, such as one's grammatical analysis,

were equal, an approach like Sprigg's could be unobjectionable, as far as it went. Of course, it does not go far enough, and then, these other things are not equal (see fn. 3).

Neither, however, would we recommend, or follow, Roy Miller's curious approach in taking written Tibetan forms as basic:

'... if we take the WT forms as a rough indication both of the historical shape of a morpheme's original vocalization and as a handy guide to what is probably in many if not in most cases its basic form for descriptive purposes, and study the vocalization of these earlier basic forms in comparison with the vocalization of the modern language forms, we end up with a set of vowel shifts exactly paralleling the 'vowel harmony' phenomenon as it operates in the language on the morphophonemic level' (1966:253; emphasis ours).

It would be surprising if 'rough', 'handy', and 'probably' led to 'exactly'. And, of course, they do not. An example of the results obtained through such an approach is Miller's lowering rule (1966:255) $LH > LL$ a ... i > a ... e (WT ga-gir = qh^hqēē [qh^hqī:]). In the first place, ēē (I:) is not e, not on any level. Nor is ^h a. Furthermore, no such 'vowel harmony' phenomenon as a ... i > a ... e 'operates in the language on the morphophonemic level', a ... i regularly becomes ^h ... i (see Chart 1). In terms of our basic alternants, qh^hqī: is an example of a raising before I:; in terms of the underlying vowels, it is an example of a raising before i (I: < i-^h; cf. §2). The actual lowering of i--still to a morphophonemically high vowel, I,--is an internal sandhi phenomenon which has nothing to do with the vowel of the first syllable. On the basis of the spoken data we set up a-sandhi and i-sandhi

(§2). If we incorporate written data, we see glimpses of an r-sandhi equivalent to our a-sandhi. Thus, $ir > I:$ (in the case of ga-gir, qh^hqī:), or $\rightarrow \text{ɔ:}$ (in the case of l^hr 'paper money', WT lor, ŋālō: 'a five-sāŋ (dollar, rupee) note', cūlō: 'a ten-sāŋ (dollar, rupee) note').

Internal reconstruction has made a valid claim to recapture historical processes. As a means of gaining historical depth in the absence of written records, and as a means of confirming inferences from writing, this is of unquestioned value. To reverse this procedure, and take historical, written evidence as a clue or 'handy guide' to what is readily available synchronically is a strange notion, indeed.

⁵ c^hŋā is an exception in several respects. Regularly, $u \dots a \rightarrow u \dots \wedge$ (khūpā, qūpkā). In c^hŋā alone do we find lowering before a, fronting, and gemination. (c^hpšī 'l^h' also shows the fronting alternation.) We can offer no explanation for this on the basis of spoken Tibetan alternations.

⁶ Length is phonemic for nasal vowels (cf. t^hāntū:N 'a spear carried on horseback': t^hā 'horse', tūŋ 'a spear'; t^hā:ntū:N 'miscellaneous activities, irregular work': t^hā:N, a verb base whose definition varies widely, depending on the nouns with which it occurs). Since, however, occurrences of contrast are rare, and since length of nasalized vowels is not a factor affecting the occurrence of vowel-height alternations, we have not made separate charts for short and long nasalized vowels.

⁹Geminate-vowel sequences of level or falling tone also alternate with vowel-consonant sequences. For example:

- I. Falling tone alternates with: a. p; b. t; c. q
- II. Level tone alternates with: a. l; b. r

I. Falling tone:

a. p

phè: 'to come', phĩpsũ šŷ: 'to welcome one (who has come)'
 (p.), phēptō 'car' (p.)
 lěplè: 'flat', ñē:lēp, ñē:lè: 'a flat pillow'
 nũ: 'west', nũplà: 'west wind'

b. t

ot → ŷ: jŷ: 'I have'	*jot
jŷtā:N 'you have, don't you?'	*jot-a:N
qhǎrē jŷ: 'what do you have?'	*jot-Λ
jŷ: rē: 'there is; there are'	*jot-Λ ret
jŷpè: 'do you have?'	*jot-pa-ĩ
et → è: rē: 'there is'	*ret
rētā:N 'there is, isn't there?'	*ret-a:N
qhǎrē rē: 'what is there?'	*ret-Λ
rēpè: 'is there?'	*ret-pa-ĩ

(In disjunctive questions with rē:, ... rē:?, the falling tone is suspended when it is not final.)

c. q

uq → ù:	tû: 'there is'	*tuq
	tûqā:N 'there is, isn't there?'	*tuq-a:N
	tōqā:N " "	
	qhāre tû: 'what is there?'	*tuq-ʌ
	tûqī: 'is there?'	*tuq-pa-ĩ
	lû: 'sheep', lûqpā: 'sheep fur'	

eq → è: chēqā 'half' (chēq-ā), lõpcè: 'half a year'
(lo-p-cheq)

iq → ì: mì: 'eye', mīqcū (< mì:/mīg-chū) 'tear'

II. Level tone:

a. l

jǒlā (jǒl-ā) 'a covering, screen, curtain', thājǒ: 'a curtain for a window', tājǒ: 'a curtain behind a target'
thēlā (thēl-ā) 'dust', qhōtē: 'ashes', thī:lū:N kǎp 'to have a windstorm (i.e. wind and dust)'
qālā (qāl-ā) 'share', p.: qūqī: (< qū-qē: < qū-qāl)

b. r

qhǔ: 'tent', qhǔrtā: 'a tent rope'
mǎ: 'butter', mǎrqò: 'a skin/leather container for butter', mǎrtā:N 'a large piece of butter (c. 100 pounds) in a skin/leather bag'
pār 'photo', p.: qūpāā
qār 'dairy products (excluding eggs), honey, sugar', qā:kò:N 'one who eats qār'
lǎr 'paper money', ṇālō: 'a ten-sār (dollar, rupee) note'

¹⁰ In our regular transcription, the absence of a tone mark in itself indicates absence of stress; in the headings for subtypes A and B in this section, we mark absence of stress explicitly and indicate stress by the absence of a tone mark: our regular transcription of stressed vowels indicates tone; though we infer stress here, we have no justification for inferring a basic tone.