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ILLUSTRATION OF THE IPA

Central Tibetan (Lhasa)

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Central Tibetan (ISO 639-3, bod) is a Tibetic language that belongs to the Bodish branch of the Tibeto-Burman subgroup within the Sino-Tibetan language family (Thurgood & Lapolla, 2016). The Tibetic languages refer to a variety of languages that derive from Old Tibetan, including Central Tibetan (Ü-Tsang Tibetan), Khams Tibetan and Amdo Tibetan (Tournadre, 2014; Tournadre & Suzuki, 2022; Zhang, 1996). The modern Tibetic languages have many cognates and regular phonological correspondences with Classical Literary Tibetan (Goldstein et al., 1991; Tournadre, 2014), a common written language developed in the Tibetan cultural sphere, including regions of China, Pakistan, India, Nepal and Bhutan. Most Tibetic languages can be written with the Tibetan script, which preserves the old phonology and orthography of Classical Literary Tibetan.

The Central Tibetan language includes subgroups such as Ü, Tsang, Nagari, etc. (Qu & Jing, 2017; Tournadre & Dorje, 2003; Tournadre & Suzuki, 2022; Zhang, 1996). The Ü and Tsang dialects are spoken in Lhasa and Shigatse regions respectively. The Ü variety spoken in Lhasa, the capital of the Tibet Autonomous Region (see Figure 1), is generally known as standard spoken Tibetan. It is a regional common language in Central Tibet and is even regarded as the lingua franca of the greater Tibetan areas, including the Amdo and Khams regions, and of overseas Tibetan diasporic communities.

The current illustration describes the sound system of Lhasa Tibetan. It provides a comprehensive synthesis of previous accounts (Dawson, 1980b; DeLancey, 2003; Gong, 2020; T. Hu, 1980, 2003; Tournadre & Dorje, 2003; Zhou, 1983). Moreover, this paper extends previous work by presenting instrumental phonetic data, which provides further insight on some critical issues about Lhasa Tibetan, e.g., the organization of its vowel, vowel harmony and word-tone systems. Some of these issues remain to be further investigated in future studies. The phonetic data comes from a male speaker (TN) and a female speaker (DY) in their twenties. The two speakers were born in Lhasa and speak Lhasa Tibetan as a native language. They are also fluent in Mandarin Chinese and have a good knowledge of English. Their speech described in this illustration is representative of standard Central Tibetan and broadly conforms to pronunciation standards adopted in standard Central Tibetan textbooks (Chang & Shefts, 1964; Goldstein & Nornang, 1970; Tournadre & Dorje, 2003; Zhou, 1983)

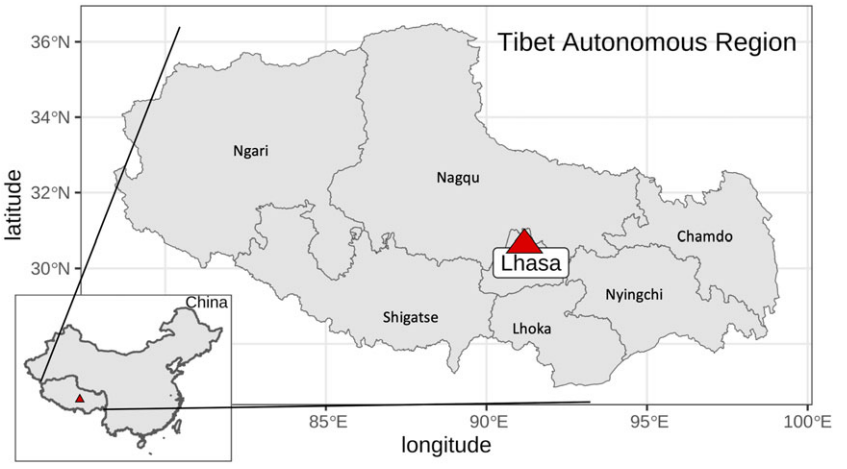

Figure 1. (Colour online) Map of the Tibet Autonomous Region. The location of Lhasa is indicated by the red triangle.

Consonants

	labial	alveolar	retroflex	palatal/ alveolo-palatal	palatalized velar	velar	glottal
plosive	p pʰ	t tʰ			kʲ kʲʰ	k kʰ	ʔ
affricate		ʦ ʦʰ	ʈʂ ʈʂʰ	ʨ ʨʰ			
fricative		s	ʂ[1]	ɕ			h
nasal	m	n		ɲ		ŋ	
approximant	w	ɹ		j			
lateral		l ɬ					

[1] Some previous work postulates a voiceless approximant like [ɻ̊] (Dawson, 1980b; Sprigg, 1954; Tournadre & Dorje, 2003). In the current dataset, there is no clear evidence for this sound. It might be a variant of the sound /ʂ/ in certain varieties of Lhasa or Central Tibetan.

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Onset consonant

/pá/[2]	ཨ	'agentive particle'	/tʂʰáʔ/	ཁྲག	'blood'
/pʰà/	བ	'cow'	/ʂáŋ/	ཤང	'alone'
/mà/	མ	'female, mother'	/tɕáʔ/	ལྕགས	'iron'
/wà/	ཝ	'fox'	/tɕʰá/	ཆ	'pair'
/tá/	ཏ	'horse'	/ɕá/	ཤ	'meat'
/tʰá/	མཐའ	'rim, edge'	/ɲà/	ཉ	'fish'
/tsá/	རྩ	'root'	/jà/	ཡ	'above'
/tsʰá/	ཚྭ	'salt'	/kʲà/	བརྒྱ	'hundred'
/sá/	ས	'earth'	/kʲʰáʔ/	ཁྲགས	'freeze'
/nà/	ན	'pain, ache'	/ká/	ཀ	'the first letter in the Tibetan alphabet'
/ɹà/ [zà]	ར	'goat'	/kʰá/	ཁ	'mouth'
/lá/	ལྷ	'hire, rent'	/ŋà/	ང	'I'
/ɬá/	ལྷ	'god'	/há/	ཧ	'the twenty-ninth letter in the Tibetan alphabet'
/ʂá/	ཟླ	'hair'			

Coda consonant

/kʰáp/ [kʰɔ́p]	ཁབ	'needle'	/kʰáŋ/, /kʰɑ́ː/	ཁང	'house'
/kʰámʔ/	ཁམས	'region, body'	/kʰáʔ/	ཁག	'difficult, section'
(/kʰɛ́l/), /kʰɛ́ː/	འཁྱལ	'spin (yarn)'	/kʰàɹ/ [kʰàr] /kʰàː/	གར	'dancing'

Plosives, affricates and fricatives

The plosives in Lhasa Tibetan contrast in four places of articulation – bilabial, alveolar, palatalized velar and velar. The distinction between palatalized velar and velar can

[2] A broad phonemic transcription indicated by slashes / / is generally used in this illustration. To illustrate the detailed phonetic realization in some cases, a phonetic transcription is provided using square brackets [ ]. For tonal transcription, the phonological high tone (H) and low tone (L) are indicated by the diacritics /á/ and /à/ on the vowel respectively. Tone letters are only provided in some examples in the *Tone* section to illustrate detailed phonetic pitch realization. For tones on disyllabic words, the transcription generally indicates the disyllabic tonal patterns predicted by tonal templates rather than individual monosyllabic tones in isolation. For cases of word-level phonological processes via combination of individual morphemes, e.g., [disyllabic word] < [syllable 1] + [syllable 2], monosyllabic tones on each isolated syllable (on the right side of <) are also given. Vowel harmony is only transcribed in the *vowel harmony* section. Additional transcriptions are given if the two speakers differ in their pronunciations (denoted by DY and TN) or if one speaker shows pronunciation variants.

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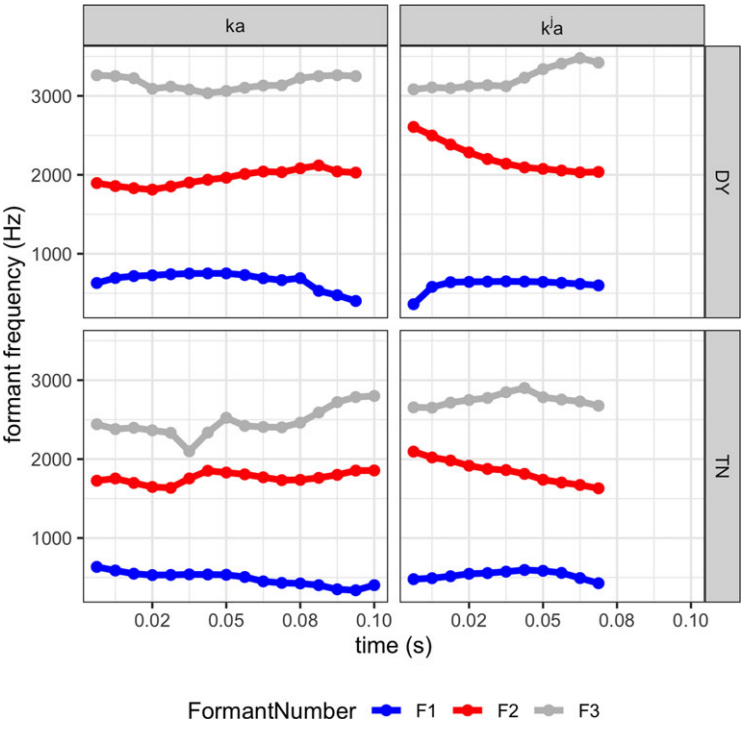

Figure 2. (Colour online) The first, second and third formant frequency trajectories for syllables /kà/ and /kʲà/. The syllable /kà/ is taken from the disyllabic word 'favorite' (TN: [kà ɕə́ʔ] and DY: [kà ɕə̀ː]). The syllable /kʲà/ is taken from the disyllabic word 'China' ([kʲà náʔ]). One example token for each speaker and each consonant category is selected for the illustration.

be discerned from the formant transition (see Figure 2). For example, a notable difference between /k/ and /kʲ/ followed by /a/ lies in the second formant frequency transition. Compared with /ka/, the second formant frequency transition of /kʲa/ exhibits a large and steep fall.

The plosives also contrast in aspiration – voiceless aspirated and voiceless unaspirated[3]. The voice onset time (VOT) of the two categories is presented in Figure 3. The aspirated plosives have longer VOT than the unaspirated ones.

Deaspiration can occur for the aspirated plosives and affricates in the second syllable of a disyllabic word (Dawson, 1980b), e.g., DY: [kʲà kɔ́ʔ] < [kʲà] + [kʰɔ́ʔ] 'Chinese hotpot.' Both aspirated and unaspirated stops can undergo intervocalic voicing[4], e.g., DY: [kʲà gɛ́ʔ] < [kʲà] + [kɛ́ʔ] 'the Chinese language.' In some cases, intervocalic plosive can become an approximant, e.g., TN: [kʲà ɰɔ́ʔ] < [kʲà] + [kʰɔ́ʔ] 'Chinese hotpot.'

The fricatives in Lhasa Tibetan have four places of articulation – alveolar, alveolo-palatal, retroflex and glottal. The smoothed long-term average spectra (LTAS) of the fricatives are

[3] Note that the speaker TN sometimes produces prenasalization for the initial unaspirated plosive in certain monosyllabic words, e.g., [ŋgàʔ] 'be clogged' and [ŋgàmʔ] 'eat powdered food/medicines (past tense).' The prenasalization reflects the nasal or some other sonorants in a consonant cluster of Old Tibetan. Because it is produced inconsistently and plays a limited contrastive role, prenasalization is treated as a pronunciation variant for TN. For most Lhasa Tibetan speakers, the nasal in this case can surface in disyllabic words as a resyllabified nasal (see the *fossilized consonants* section), but generally does not occur in monosyllabic words.

[4] Only extreme cases of intervocalic voicing without notable voiceless portion during the consonant are transcribed as a voiced stop in the current illustration.

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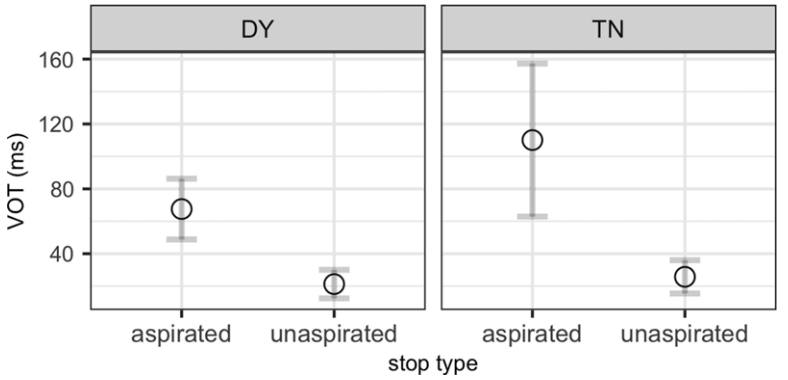

Figure 3. The VOT (mean + sd) of the initial voiceless aspirated and unaspirated plosives for speakers DY and TN. For each speaker and each aspiration category, eight plosive tokens (two repetitions for each place of articulation) are used in the acoustic analysis.

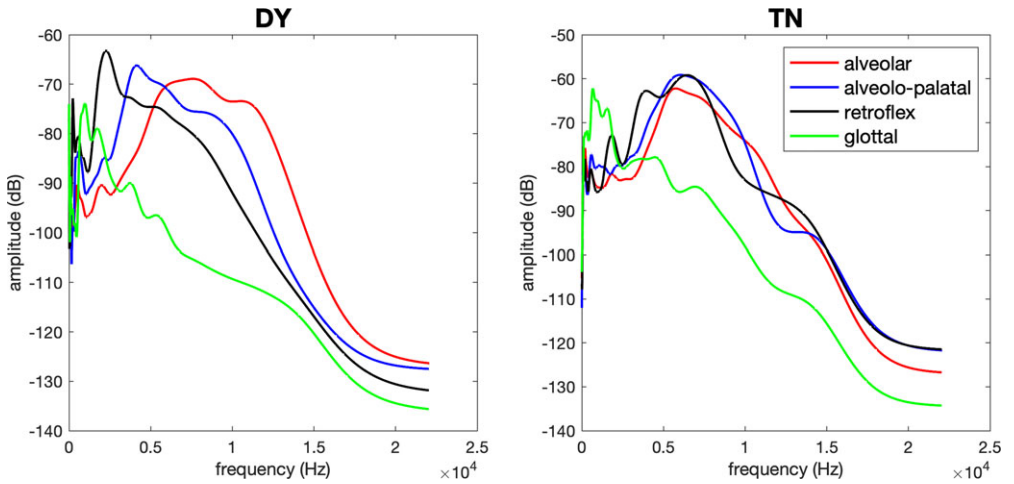

Figure 4. (Colour online) The smoothed long-term average spectra (LTAS) of the alveolar, alveolo-palatal, retroflex and glottal fricatives for speakers DY and TN. The fricative portion segmented from the speech signal is used for the analysis. For each speaker, the fricative spectra are averaged across two repetitions of the tokens /sá/, /ɕá/, /ʂáŋ/ and /há/.

shown in Figure 4. For DY, the alveolo-palatal fricatives have more energy than the alveolar fricatives in the lower-frequency region (e.g., 0–5000 Hz), whereas the opposite is true in the higher-frequency region. However, for TN, the difference is much smaller. The speaker DY also exhibits a canonical distinction in spectral peak, that is, the alveolar fricative exhibits a higher-frequency spectral peak than the alveolo-palatal one, but TN exhibits no difference in spectral peak. The articulatory mechanisms underlying this speaker-specific acoustic difference remain to be determined in future studies.

Realization of /ɹ/

The approximant /ɹ/ has four realizations [ɹ], [ʐ̩], [ɾ] and [r]. Example waveforms and spectrograms are shown in Figure 5. The /ɹ/ in DY's production of [ɻŋ̩ ɕǿʔ] 'longest' can be

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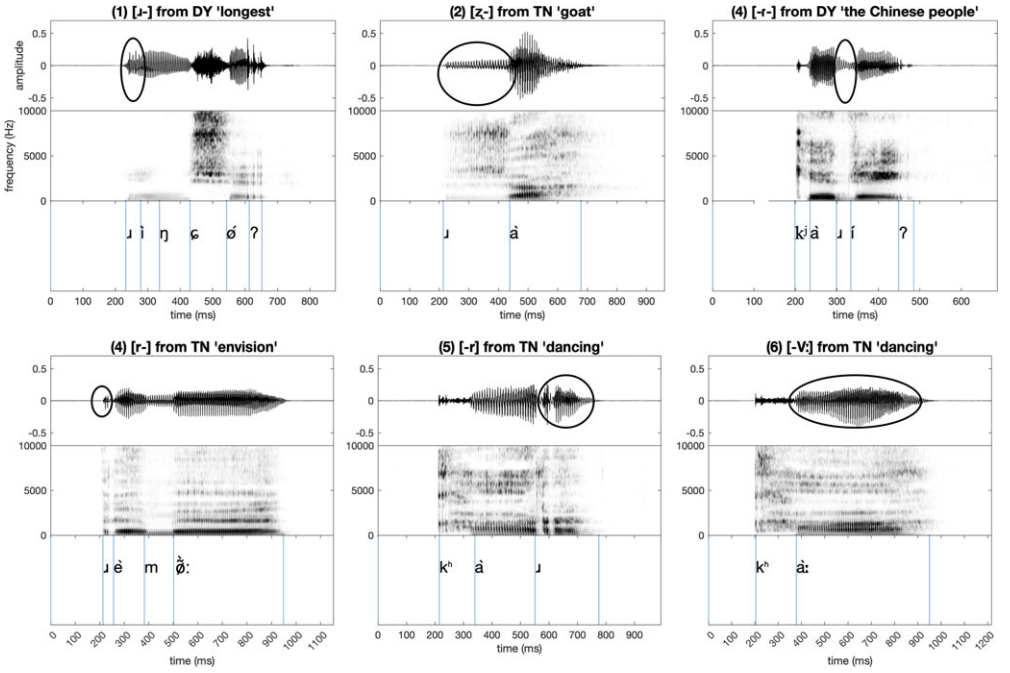

Figure 5. Waveforms and spectrograms for different realizations of /ɹ/: (1) initial approximant [ɹ-], (2) initial fricative [ʐ̞-], (3) intervocalic flap [-ɾ-], (4) initial trill [r-], (5) final trill [-r], and (6) long vowel [-V:].

transcribed as an approximant [ɹ] without notable frication. The [ʐ̞] realization of /ɹ/ occurs in TN's production of /ɹà/ [ʐ̞à] 'goat.' A flap [ɾ] is present in DY's production of /kʲà ɹíʔ/ [kʲà ɾíʔ] 'the Chinese people.' The /ɹ/ can also be realized as a trill [r], e.g., in initial position, TN: /ɹè mə̀ː/ [rè mə̀ː] 'envision,' or in final position, TN: /kʰàɹ/ [kʰàr] 'dancing.'

Consonant deletion and compensatory vowel lengthening

The coda /ɹ/ is frequently dropped in colloquial speech[5], resulting in compensatory lengthening of the vowel [V:], e.g., TN: /kʰàɹ/ [kʰàː] 'dancing' (see Figure 5). In colloquial speech, /l/ is not pronounced and the vowel is lengthened, e.g., (/kʰɛ́l/), /kʰɛ́ː/ 'spin (yarn)'. The coda /ŋ/ can be reduced in colloquial speech, leading to vowel lengthening and nasalization as illustrated by the example /kʰáŋ/, /kʰã́ː/ 'house.' The reduction or deletion of a glottal stop [ʔ] can also cause compensatory lengthening of the preceding vowel, e.g., TN: [tʂɔ̀ː ɯʲí] < [tʂɔ̀ʔ] + [kʲʰí] 'nomad's dog.'

[5] Due to the long written tradition of Lhasa Tibetan, some words have both formal (literary) and colloquial pronunciations (see Zhou, 1984 for a detailed discussion). The formal form, which generally reflects aspects of traditional pronunciations represented by the Tibetan orthography, is used on formal occasions, such as in education, religion and broadcasting settings, whereas the colloquial form is used in daily conversations.

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Fossilized consonants

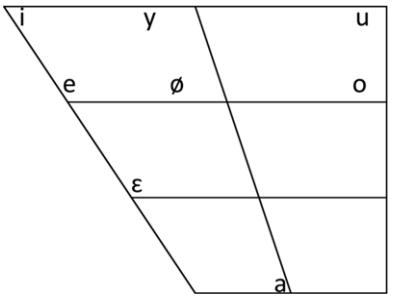
Fossilized consonants	Disyllabic forms	Monosyllabic forms	Orthography	Gloss
p	[ɕìp tɕú]	< [ɕì] + [tɕú]	བཞི་བཅུ	'forty'
k	TN: [tɕúk súm]	< [tɕú] + [súm]	བཅུ་གསུམ	'thirteen'
	DY: [tɕɔ́k súm]			
	(colloquial)			
N [n]	[tʰàn tá]	< [tʰà] + [tá]	ད་ཪྟ	'now'
N [ŋ]	[kúŋ tʂá]	< [kú] + [tʂà]	སྐུ་འདྲ	'statue, image'
N [m]	[kʲùm tsʰɛ̂ː]	< [kʲù] + [tsʰɛ́ː]	རྒྱུ་མཚན	'reason'

In Lhasa Tibetan, some consonant segments are silent when a morpheme is produced in isolation but emerge when combined with another morpheme in a phonological word. This phenomenon is called fossilized consonants (DeLancey, 2003). These fossilized consonants are modern reflexes of consonants in a complex onset of Classical Literary Tibetan. A more general term used in the literature for describing this phenomenon is 'ghost segments,' which are either not realized phonetically or occur only in some specific contexts. A well-known example of ghost consonants is French liaison, where the liaison consonants are silent in isolation but can emerge between two words (Côté, 2011).

For the first example shown in the table, the morpheme བཅུ 'ten' is pronounced as [tɕú] in isolation. The prefix letter བ, which reflects Old Tibetan prefix consonant *b* (Wylie, 1959), is silent. However, when this morpheme occurs finally in a disyllabic word like 'forty,' a resyllabified [p] is added to the preceding syllable [ɕì] 'four' as a coda. Then, the disyllabic word 'forty' is pronounced as [ɕìp tɕú]. The productivity of fossilized consonants varies for different consonants. The fossilized nasal seems to be more productive than other fossilized consonants (DeLancey, 2003).

Vowels

Monophthongs



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	Short vowels			Long vowels			Nasalized vowels		
i iː ĩː	/ɲì/ [zi̗ˀì]	རི	‘hill’	/ɲìː/ [zi̗ˀìː]	རིལ	‘fall’	/ɲĩ̀ː/ [zi̗ˀĩ̀ː]	རིན	‘price’
e eː ẽː	/ɲè/	རེ	‘near’	/ɲéː/, /ɲéɹ/	གཉེར	‘manage’	/ɲẽ́ː/	མཉེན	‘pilant’
ɛ ɛː ɛ̃ː	/sɛ́ʔ/	གསད	‘kill’	/sɛ́ː/	གསལ	‘clear’	/sɛ̃́ː/	གསན	‘hear (honorific)’
y yː ỹː	/kýʔ/	སྐྱོད	‘thread’	/kýː/	སྐྱལ	‘urge’	/kỹ́ː/	ཀུན	‘all’
ø øː ø̃ː	/tǿʔ/	བསྟོད	‘praise’	/tǿː/	རྟོལ	‘puncture’	/tø̃́ː/	སྟོན	‘show’
u uː ũː	/sùʔ/	ཟུག	‘be pricked’	DY: /sùː/, /sùɹ/ [sùr] TN: /sùː/	ཟུར	‘corner’	DY: /súŋ/ TN: /sṹːʔ/	གསུང	‘speak (honorific)’
o oː õː	/kò/	མགོ	‘head’	DY: /kòː/ [kɔ̀ː], /kòɹ/ [kɔ̀r] TN: /kòː/ [kɔ̀ː]	འགོར	‘elapse’	DY: /kòŋ/ TN: /kõ̀ː/	དགོང	‘night’
a aː ãː	/sá/	ས	‘earth’	DY: /sáː/, /sáɹ/ TN: /sáː/	གསར	‘new’	DY: /sáŋ/ TN: /sã́ː/	གསང	‘conceal’

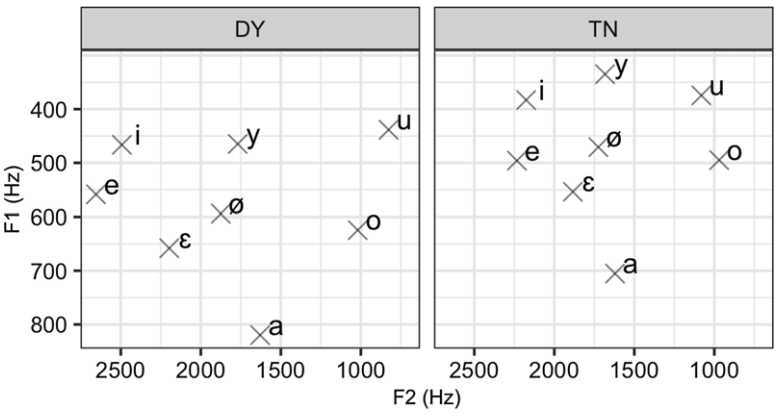

Figure 6. The acoustic vowel space of the eight short vowels (DY: left; TN: right). Each cross denotes the mean F1 and F2. The tokens for the formant frequency analysis are taken from the short vowel example list. The formant frequency values shown are averaged across all the data points of the vowel portion and across two repetitions of each token. The formant frequency is measured using the formant tracking algorithm implemented in PRAAT.

Despite some discrepancies in previous accounts of the Lhasa Tibetan vowel system, it is generally agreed that Lhasa Tibetan distinguishes eight short vowels – /i, e, ɛ, y, ø, u, o, a[6]/ (Dawson, 1980a; DeLancey, 2003; Gong, 2020; T. Hu, 2003; Zhou, 1983). Figure 6 shows the acoustic vowel space of the eight short vowels.

[6] The symbol /a/ is used to denote a low central vowel for typographic convenience.

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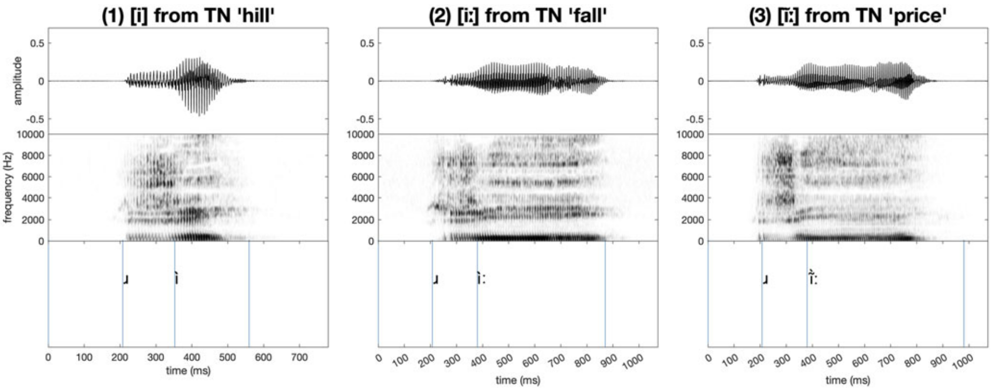

Figure 7. Example waveforms and spectrograms for short, long and nasalized vowels produced by TN – (1) short [i] in /ɹì/ [ʐ̩ì] 'hill'; (2) long [iː] in /ɹìː/ [ʐ̩ìː] 'fall'; (3) nasalized [ĩː] in /ɹĩ̀ː/ [ʐ̩ĩ̀ː] 'price.'

The vowels in Lhasa Tibetan can also differ in nasalization and length. Example waveforms and spectrograms for short, long and nasalized vowels produced by TN are shown in Figure 7. The long vowels of Lhasa Tibetan reflect Old Tibetan coronal sonorant codas. The nasalized vowels of Lhasa Tibetan reflect Old Tibetan alveolar nasal coda and sometimes velar nasal coda. The conditioning environments for vowel lengthening and nasalization are not completely lost in Lhasa Tibetan. For example, the coda /l/ is generally not pronounced and the coda /ɹ/ is frequently dropped in colloquial speech, but these codas can be retained in more formal speech. The velar nasal coda /ŋ/ can be reduced, causing vowel lengthening and nasalization, but it is not completely lost.

Diphthongs

iu	pʰìu	བེའུ	'calf'
au	tàu	ཟླ་བོ	'spouse'

Diphthongs are relatively rare in Lhasa Tibetan native words. The sequence /iu/ and /au/, originating from syllable fusion, can be treated as diphthongs. The diphthong system of other Central Tibetan dialects, like Ngari Tibetan, is more fully developed than that of Lhasa Tibetan (Qu & Tan, 1983; Qu & Jing, 2017). The diphthong resulting from syllable fusion exhibits different acoustic patterns from two consecutive vowels in an unfused syllable. For example, the diphthong [àu] in [tàu] originates from syllable fusion – [tàu] < /tà wó/ 'spouse.' In this example, the unfused form exhibits two intensity bursts, but the fused form exhibits only one (see Figure 8 for an example from DY). Moreover, the unfused form has a clearer formant structure for individual syllables and a longer duration than the fused form.

The diphthong is comparable in duration to the long vowel and the nasalized vowel. All these vowels are longer in duration than the short vowel. Figure 9 displays the acoustic duration of each vowel category – short vowel, long vowel, nasalized vowel and diphthong.

Vowel variants

In addition to these vowels, some researchers postulate additional vowels /ɪ, ʊ, ɔ, ə/ (Dawson, 1980a, 1980b; Gong, 2020). These vowels typically occur as allophonic variants in certain conditioning environments, e.g., before specific codas, as a result of syllable

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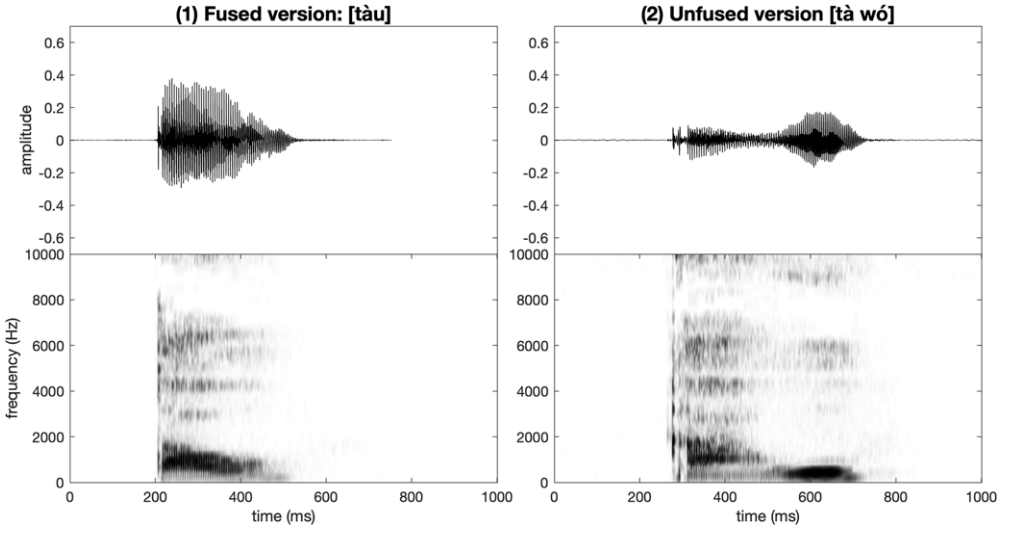

Figure 8. Examples of syllable fusion (data from DY). The waveforms and spectrograms illustrate the fused form [tàu] (left) and unfused form [tà wó] (right) of the word 'spouse.'

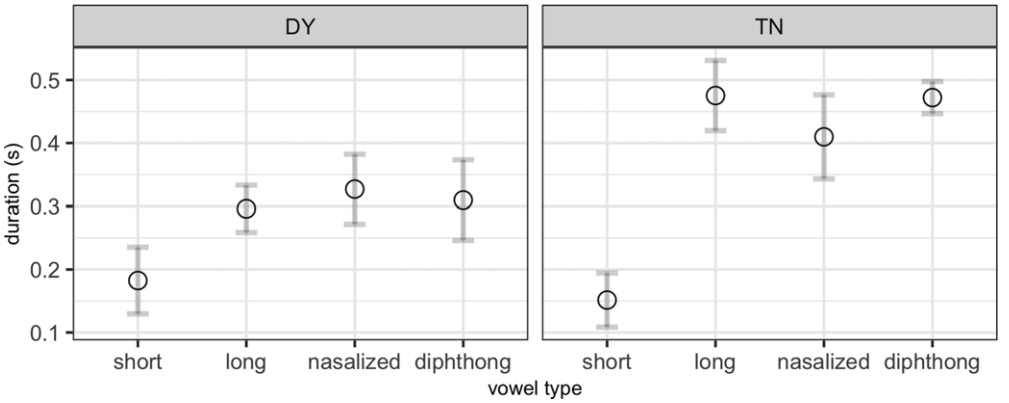

Figure 9. The vowel duration of the four vowel categories – short, long, nasalized and diphthong (DY: left; TN: right). The dot and error bar show mean ± standard deviation based on tokens taken from the vowel example list. (Number of tokens: TN – short: 16, long: 16, nasalized: 16, diphthong: 4; DY – short: 16, long: 15, nasalized: 10, diphthong: 4).

fusion in colloquial speech, and in vowel harmony, but they have been argued to be more contrastive when the original conditioning environments are lost. Due to the emerging contrastive role of these vowels, some proposals have incorporated these additional vowels into the vowel system of Lhasa Tibetan, and analyze the system as having one set of constricted or RTR (retracted tongue root) vowels /ɪ, ɛ, ʊ, ɔ, ə, a/ and another set of unconstricted or ATR (advanced tongue root) vowels /i, e, u, o, y, ø/ (Dawson, 1980a, 1980b; Gong, 2020).

However, this analysis is not fully supported by the current data. Gong (2020) argues that the vowels [ɪ, ʊ] occur before the coda /-ɹ/, e.g., /tìɹ/ [tìɾ] 'here (formal)' and /súɹ/ [sʊ́ɹ] 'who (formal)', or in long vowels when the coda /-ɹ/ is dropped, e.g., /tìː/ [tìː] 'here (colloquial)' and /súː/ [sʊ́ː] 'who (colloquial).' The examples in the latter case are cited as evidence for

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the phonemic status of [ɪ] and [ʊ]. However, in our data, we only found allophonic variants [ɪ, ʊ] before /-ɹ/, as in the formal forms of 'here' and 'who.' The colloquial forms of them are pronounced as [tɛ̀ː] and [sɔ́ː] instead of [tɪ̀ː] and [sʊ́ː]. There is no evidence that the two speakers in the current study represent [ɪ] and [ʊ] as phonemes. Moreover, Gong (2020) provides additional examples of the vowel [ʊ] resulting from syllable fusion and argues for its phonemic status, e.g., [kʰʊ́ː] (colloquial) < /kʰú wáː/ (formal) 'liquid, soup' and [tɕʊ̀ː] (colloquial) < /tɕì wàː/ (formal) 'flea.' However, for our speakers, the colloquial fused form of 'liquid, soup' is [kʰɔ́ː]. For the colloquial form of 'flea,' the two speakers differ in their pronunciations – DY: [tɕɛ̀ːp] and TN: [tɕɔ̀ː]. These data suggest some variability of the colloquial pronunciations in the Lhasa Tibetan speech community.

For the vowel [ɔ], previous description and our data suggest that it occurs before the coda -ʔ (Gong, 2020), e.g., /lòʔ/ [lɔ̀ʔ] 'come back.' This vowel also occurs in long vowels with dropped /-ɹ/, e.g., /kòː/ [kɔ̀ː] 'elapse (colloquial)' and, in syllable fusion, e.g., [tʰɔ́ː] (colloquial) < /tʰó wáː/ (formal) 'hammer' (also in the colloquial forms of 'liquid, soup' and TN's 'flea' as discussed above). For the vowel [ə], previous description and our data suggest that it occurs before the coda /-p/, e.g., /tʰáp/ [tʰə́p] 'canteen' or in syllable fusion, e.g., [kə̀m] (colloquial) (DY) < /kʰàŋ pʰú/ (formal) 'pea pod' (DY, TN) (Gong, 2020; Qu & Jing, 2017). Moreover, the reduced variant of /a/ in the final position of a disyllabic word can also be transcribed as [ə] (Dawson, 1980b), e.g., 'flag' /tʰàɹ tɕʰá/ [tʰə̀r tɕə́] (DY, see Figure 11 for an illustration of its reduced F1).

The vowels [ɔ] and [ə] originating from syllable fusion seem to be more contrastive than the other proposed additional vowels, but the contrast occurs primarily in colloquial speech. It is still likely that the conditioning environments are not fully lost in formal speech. One solution is to treat the emerging vowel contrast as part of a 'colloquial' sound system as opposed to a canonical 'formal' system (Zhou, 1984). A further issue is whether some of these additional vowels can be analyzed as diphthongs. For example, Zhou (1984) treats the [ɪ] and [ʊ] conditioned by /-ɹ/ as diphthongs [ie] and [uo]. Taken together, while the proposal of additional vowels offers insight into the complexity of the Lhasa Tibetan vowel system, there are theoretical and empirical issues that need to be addressed in future studies. Supporting instrumental data are required to fully reveal the categorical or gradient properties of these vowel variants in various contexts.

Vowel harmony: Regressive harmony

	Harmonizing condition			Control		
a	[kʲə̀ rɪ́ʔ]	རྒྱ་རིགས་	'the Chinese people'	[kʲà náʔ]	རྒྱ་ནག	'China'
ɛ	[lɛ̀ʔ zɪ́ʔ]	ལས་རིགས་	'type of work, industry'	[lɛ̀ʔ nɛ́ʔ]	ལས་གནས་	'job position'
e	DY: [ɹɛ̀ tɤ̃ː] TN: [ɹɛ̀n dɤ̃ː]	རེ་འདུན	'hope'	DY: [ɹɛ̀ mə̃ː] TN: [rè mə̃ː]	རེ་སྨོན	'envision'

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ø	[pʰə̀ʔ lúʔ]	བོད་ལུག	‘Tibetan sheep’	[pʰə̀ʔ sɛ́ʔ]	བོད་ཟས	‘Tibetan food’
o	[tò nùm]	རྡོ་སྨུག	‘gasoline’	[tɔ̀ː tɕé]	རྡོ་རྗེ	‘vajra’

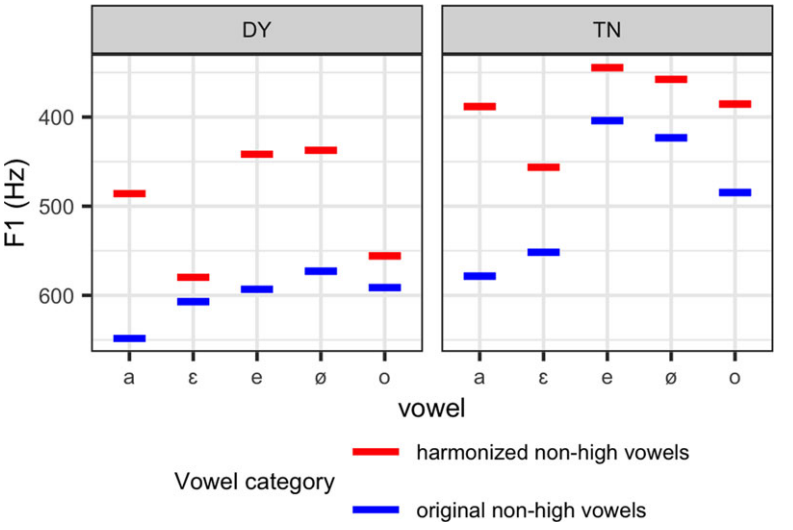

Figure 10. (Colour online) Illustration of regressive raising harmony (left: DY; right: TN). The F1 values shown are averaged across all the data points of the whole vowel portion and across two repetitions of each token. The red line represents the harmonized non-high vowel in the harmonizing condition while the blue line represents the original non-high vowel in the control condition.

The vowel harmony in Lhasa Tibetan is described as a type of vowel height raising harmony (Chang & Shefts, 1964; Dawson, 1980b; DeLancey, 2003; Miller, 1966; Sprigg, 1961; Ulving, 2008). The high vowels [i, y, u, ə] in a phonological word, raise the non-high vowels [a, ɛ, e, ø, o] of adjacent syllables. The harmonized or raised non-high vowels [a̝, ɛ̝, e̝, ø̝, o̝] become more similar to vowels [ə, e, i, y, u]. There is both regressive and progressive vowel harmony in Lhasa Tibetan.

In regressive harmony, the high vowel of the second syllable raises the non-high vowel of the first syllable. The table above displays the speech materials used for examining regressive harmony. The materials consist of two groups of disyllabic words, which represent the ‘non-high + high’ harmonizing condition and ‘non-high + non-high’ control condition respectively. In the harmonizing condition, the first non-high vowel is supposed to be raised by the second high vowel due to regressive harmony. Figure 10 illustrates the mean F1 for the harmonized non-high vowel in the harmonizing condition and the original non-high vowel in the control condition. The harmonized non-high vowel generally has lower mean F1 than the original non-high vowel for both speakers, suggesting that the regressive raising harmony is an active phonological process for both speakers.

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Vowel harmony: progressive harmony

	Harmonizing condition			Control		
a	DY: [jìʔ tɕə́], TN: [jìʔ tɕʰá]	ཡིག་ཚ	‘documents’	DY: [tʰàr tɕə́], TN: [tʰàr tɕʰá]	དར་ཚ	‘flag’
ɛ	DY: [tʰə́p tɕɛ́ʔ], TN: [tʰə́p tɕʰɛ́ʔ]	ཐབ་ཚས	‘kitchen ware’	DY: [sà tɕ(h)ɛ́ʔ] TN: [sà tɕʰɛ́ʔ]	ཟ་ཚས	‘food’
e	DY: [jìʔ ké] TN: [jìʔ gé]	ཡིག་གེ	‘letters’	[séŋ gé]	སེང་གེ	‘lion’
ø	DY: [ɹìŋ ɕǿʔ] TN: [ɹ̄ː ɕø̀ː]	རིང་ཤོས	‘longest’	DY: [kà ɕø̀ː] TN: [kà ɕǿʔ]	དགའ་ཤོས	‘favourite’
o	[tɕʰúŋ gó]	ཆུ་མཁོ	‘water source’	DY: [tʂʰàʔ kó] TN: [tʂʰàː kó]	བག་མཁོ	‘Luhuo (place name)’

In progressive harmony, the high vowel of the first syllable raises the non-high vowel of the second syllable. The table above shows the test materials for examining progressive harmony. The materials consist of two groups of disyllabic words, which represent the ‘high + non-high’ harmonizing condition and ‘non-high + non-high’ control condition respectively. In the harmonizing condition, the second non-high vowel is supposed to be raised by the first high vowel due to progressive harmony. Figure 11 illustrates the mean F1 for the harmonized non-high vowel in the harmonizing condition and the original non-high vowel in the control condition. For TN, the harmonized non-high vowel generally has lower mean F1 than the original non-high vowel, although the vowel /a/ seems to be less affected by progressive harmony than the other vowels. For DY, progressive harmony seems to be inconsistent because only the vowels /ɛ, ø, o/ exhibit lower F1 in the harmonizing condition than the control condition. However, one limitation of the current study is that the sample size is small. In future investigations, more data need to be collected from more speakers to reveal a fuller picture of vowel patterns in Lhasa Tibetan.

The current transcription of harmonized vowels [a̝, ɛ̝, e̝, ø̝, o̝] does not assume a categorical shift from non-high vowels [a, ɛ, e, ø, o] to vowels [ə, e, i, y, u]. Indeed, TN’s F1 data suggests that the raised vowel [ɛ̝] does not seem to have the same height as the vowel [e] (see Figures 10 and 11). In a more complex system with additional vowels as proposed by Gong (2020), the non-high vowels [a, ɛ, e, ø, o, ɔ] are typically analyzed as raised categorically to vowels [ə, ɪ, i, y, u, ʊ]. The vowels [ə, ɪ, ʊ] are treated as raised variants of [a, ɛ, ɔ]. However, this analysis might not hold if vowel categories like [ɪ, ʊ] do not exist for some Lhasa Tibetan speakers as discussed in the *vowel variants* section or if vowel harmony is gradient in Lhasa Tibetan. It is unclear how native speakers produce and perceive a raised vowel in harmony. For example, it is unknown whether native speakers represent the raised [ɔ̝] as a variant similar to [o], [ʊ] or [u]. The categorical or gradient nature of vowel

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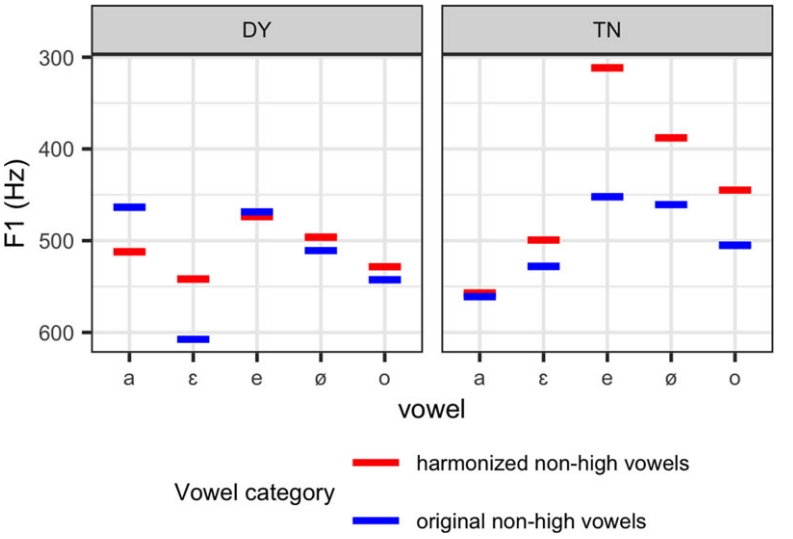

Figure 11. (Colour online) Illustration of progressive raising harmony (left: DY; right: TN). The F1 values shown are averaged across all the data points of the whole vowel portion and across two repetitions of each token. The red line represents the harmonized non-high vowel in the harmonizing condition while the blue line represents the original non-high vowel in the control condition. Note that the progressive raising harmony is less consistent for DY. Moreover, DY's /a/ in the word-final position exhibits some reduction, resulting in an [ə]-like vowel, which has lower F1 than the canonical [a].

harmony in Lhasa Tibetan remains to be investigated using a more rigorous experimental design.

Syllabic structure

A typical syllable of Lhasa Tibetan has the structure (C)V(ː)(C)(C). All the syllables must have a vowel nucleus, which can be either a short V or a long Vː, while onset and coda consonants are optional. The rhymes can be classified into short rhymes and long rhymes. A short rhyme contains a short vowel V or a short vowel with an obstruent coda ($VC_{[+obs]}$) like /-p/ or /-ʔ/. A long rhyme contains a long vowel (Vː), a short vowel with a sonorant coda ($VC_{[+son]}$), or a nasalized vowel (Ṽː). The rhyme length of $VC_{[+son]}$ʔ like VNʔ is controversial. F. Hu & Xiong (2010) found that VNʔ has longer duration than Vʔ, suggesting a long rhyme for VNʔ. However, in the current dataset, only TN's production supports the durational difference between Vʔ and VNʔ (see the *monosyllabic tones* section for a more detailed discussion).

Tones

Tibetan tones originate from laryngeal features of the onset and coda consonants in Old Tibetan (Huang, 1995; Sun, 1997, 2003). Compared with Khams and Amdo Tibetan dialects, Lhasa Tibetan represents a relatively advanced stage of Tibetan tonogenesis, where lexical tones are relatively stable and distinctive.

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Monosyllabic tones

Phonological tone	Tone letters	Rhyme type	Pitch pattern
H	54 ˥	V	short high level
	51 ˥˩	$VC_{[+obs]}$	short high falling
	55 ˥	V:, $VC_{[+son]}$, $\tilde{V}$:	long high level
	51 ˥˩	$VC_{[+son]}$ʔ, $\tilde{V}$:ʔ	(long high falling)
L	13 ˩˧	V	short low rising
	131 ˩˧˩	$VC_{[+obs]}$	short low rising-falling
	114 ˩˧	V:, $VC_{[+son]}$, $\tilde{V}$:	long low rising
	131 ˩˧˩	$VC_{[+son]}$ʔ, $\tilde{V}$:ʔ	(long low rising-falling)
á	[ka˥]	བཀའ་	‘order, Buddha’s teachings’
	[kaʔ˥˩]	བཀག	‘hinder, refuse’
	[ka:˥]	ཀ་བ	‘pillar, column’
	[kamʔ˥˩]	བསྐམས	‘become dry (past tense)’
à	[ka˩˧]	སྣ	‘saddle’
	[kaʔ˩˧]	འགག	‘be clogged’
	(TN: [ŋgaʔ˩˧])		
	[ka:˩˧]	བསྒྲུབ	‘install’
	[kamʔ˩˧]	འཐམས	‘eat powdered food or
	(TN: [ŋgamʔ˩˧])		medicines (past tense)’

There is general consensus that Lhasa Tibetan has two lexical tones based on overall pitch height – the high tone H á and the low tone L à (DeLancey, 2003; T. Hu, 1980, 2003; Lim, 2018; Sedláčcek, 1959; Sprigg, 1955, 1981, 1993; Sun, 1997; Zhou, 1983). While a two-tone analysis sufficiently captures the tonal contrast in Lhasa Tibetan, the pitch realization varies significantly according to rhyme types. Researchers have proposed various analyses for capturing these pitch patterns by incorporating either a falling versus non-falling pitch contour distinction or a short versus long tone length distinction into their tonal description (T. Hu, 1980, 2003; Sun, 1997; Zhou, 1983). For example, a four-tone description with a falling/non-falling distinction further subdivides H and L into high-level, high-falling, low rising and low rising-falling tones. The falling pitch contour is carried by checked syllables with a final bilabial plosive /-p/ or a final glottal plosive /-ʔ/. Another type of four-tone description incorporates tone length difference – short high tone, long high tone, short low tone and long low tone. Long tones are carried by syllables with long rhymes (V:, $VC_{[+son]}$ and $\tilde{V}$:), whereas short tones are carried by syllables with short rhymes (V and $VC_{[+obs]}$).

Pitch contour and tonal length can be combined with pitch height in different ways, yielding different six-tone and eight-tone descriptions (Dawson, 1980b; F. Hu & Xiong, 2010; T. Hu, 1980). One such six-tone description includes short high level tone, long high level tone, short low rising tone, long low rising tone, high falling tone, and low rising-falling

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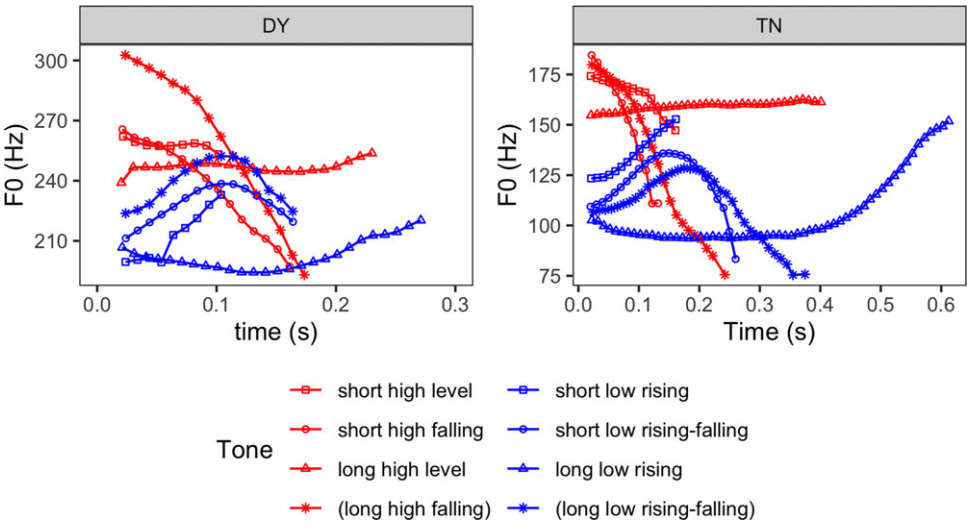

Figure 12. (Colour online) The F0 tracks of Lhasa Tibetan monosyllabic tones (left: DY; right: TN) based on one repetition of the tokens in the example list of monosyllabic tones. The F0 tracks begin from the vocalic portion of the rhyme (time point 0). Note that for DY, the long high falling and long low rising-falling tones are not distinguishable from the short high falling and short low rising-falling tones, whereas the production of TN exhibits some distinction in tone length.

tone (Dawson, 1980b; T. Hu, 1980). F. Hu & Xiong (2010) further propose an eight-tone description which subdivides the high falling and low rising-falling tones based on tone length – long high falling, short high falling, long low rising-falling and short low rising-falling tones. Their proposal is based on the finding that the falling and rising-falling contours realized on the $VC_{[+son]}$ʔ rhyme like VNʔ have longer duration than those realized on the Vʔ rhyme.

In this illustration, a two-tone analysis is adopted, but to illustrate the various pitch realizations, the materials for monosyllabic tones cover as many rhyme types in Lhasa Tibetan as possible. The F0 trajectories of the monosyllabic tones are displayed in Figure 12. The pitch height patterns of both speakers are consistent with a two-tone analysis. For the detailed pitch realizations, the speaker TN exhibits eight patterns based on rhyme types, although the difference in tonal length between VNʔ and Vʔ rhymes is smaller than that reported in F. Hu & Xiong (2010). However, the speaker DY does not show a tone length difference for the falling tone and the rising-falling tone, which is more consistent with the six-tone description (Dawson, 1980b; T. Hu, 1980).

Polysyllabic tones

	Disyllabic tones	Monosyllabic tones	Orthography	Gloss
HH: áá	[tɕʰu˥ lɔʔ˥˩]	< [tɕʰu˥˩] + [lɔʔ˥˩]	ཆུ་རླངས	‘hydroelectric’
55˥ 51˥˩	[taʔ˥ tɕɛʔ˥˩]	< [taʔ˥˩] + [tɕɛʔ˥˩]	བརྟག་དཔྱད	‘examine’
	DY: [paɹ˥ ɕyʔ˥˩]	< [paɹ˥] + [ɕyʔ˥˩]	པར་བཟོས	‘print (photos)’
	TN: [par˥ ɕyʔ˥˩]			
	[lo˥ tʂøʔ˥˩]	< [lo˥˩] + [tʂʰøʔ˥˩]	ཟོལ་ཤེས	‘intellect’

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	[kɛʔ˥ ji?˥˩]	< [kɛʔ˥˩] + [ji?˩˩]	རྐང་ཡིག	‘spoken/written language’
	DY: [ŋøŋ˥ kɔʔ˥˩] TN: [ŋøŋ˥ gɔʔ˥˩]	< [ŋø̃ː˥] + [kɔʔ˩˩]	དགེན་འགོག	‘prevent’
HH: áá	[kʰa˥ tɕu˥˩]	< [kʰa˥˩] + [tɕʰu˥˩]	ཁ་ཆུ	‘saliva’
55˥ 54˥˩	[tɕaː˥ kʲu˥˩]	< [tɕaʔ˥˩] + [kʲu˥˩]	ཇག་ཀུ	‘hook’
	[am˥ tɕi˥˩]	< [am˥] + [tɕʰi˥˩]	ཨམ་ཆི	‘doctor, physician’
	[tɕi˥ lo˥˩]	< [tɕi˥˩] + [lo˩˩]	ལྕགས་ལོ	‘year (AD)’
	[mɛː˥ ma˥˩]	< [mɛʔ˥˩] + [ma˩˩]	མས་མ	‘wounded person’
	[nam˥ tʂu˥˩]	< [nam˥] + [tʂʰu˩˩]	གནམ་གྲུ	‘airplane’
HH: áá 55˥ 55˥	[tɕʰu˥ mɛ̃ː˥]	< [tɕʰu˥˩] + [mɛ̃ː˥]	ཆུ་སྨན	‘liquid medicines’
	[lɔʔ˥ ɲɛ̃ː˥]	< [lɔʔ˥˩] + [ɲɛ̃ː˥]	པོག་བརྙན	‘movie’
	DY: [mɛ̃ː˥ gãː˥] TN: [mɛ̃ː˥ ɯãː˥]	< [mɛ̃ː˥] + [kʰãː˥]	སྨན་ཁང	‘hospital’
	[kʰa˥ ɲĩː˥]	< [kʰa˥˩] + [ɲĩː˩]	ཁ་ཉིན	‘the day before yesterday’
	[kʲu?˥ meː˥]	< [kʲu?˥˩] + [meː˩]	སྐུག་མེད	‘nausea’
	[ŋyː˥ lɔː˥]	< [ŋyː˥] + [lɔː˩]	དངུལ་ལོར	‘paper money’
LH: àá 11˩ 51˥˩	DY: [kʲa˩ gɛʔ˥˩] TN: [ŋgʲa˩ gɛʔ˥˩]	< [kʲa˩] + [kɛʔ˥˩]	རྒྱ་རྐད	‘the Chinese language’
	[lɛʔ˩ ɯũ(ː)ʔ˥˩]	< [lɛʔ˩˩] + [kʰũ(ː)ʔ˥˩]	ལས་ཁྲངས	‘office’
	[tʰar˩ tɕɔʔ˥˩]	< [tʰaɹ˩] + [tɕɔʔ˥˩]	དར་སྒོག	‘prayer flag’
	DY: [ko˩ lɔʔ˥˩]	< [ko˩] + [lɔʔ˩˩]	མགོ་ལོག	‘Golog (place name)’
	TN: [ŋgo˩ lɔʔ˥˩]			
	DY: [pʰøɲʔ˩ tɕõʔ˥˩]	< [pʰøʔ˩˩] + [tɕõ(ː)ʔ˩˩]	དབོད་སྤྱིདས	‘(Central) Tibet’
	TN: [pʰøɲʔ˩ dʑõːʔ˥˩]			
	[ɕɛ̃ː˩ da?˥˩]	< [ɕɛ̃ː˩] + [tʰa?˩˩]	གཞན་དག	‘others’
LH: àá 11˩ 54˥˩	DY: [na˩ tsa˥˩] TN: [na˩ dza˥˩]	< [na˩] + [tsʰa˥˩]	ན་ཚ	‘disease’
	DY: [tʂɔʔ˩ kʲʰi˥˩] TN: [tʂɔː˩ ɯʲi˥˩]	< [tʂɔʔ˩˩] + [kʲʰi˥˩]	འབྲོག་ཁྱི	‘nomad’s dog’

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	DY: [kỹːɻ ga˥]	< [kỹːɻ] + [kʰa˥]	དགྱུན་ཁ	‘winter’
	TN: [kỹːɻ ka˥]			
	[ɲiɻ ma˥]	< [ɲiʌ] + [maʌ]	ཉི་མ	‘day, sun’
	DY: [kʰaŋʔɻ zi̯˥]	<[kʰaŋʔʌ] + [ɹiʌ]	གངས་རི	‘snow mountains’
	TN: [kʰaŋʔɻ ri˥]			
	[lamɻ tso˥]	< [lamʌ] + [tsoʌ]	ལམ་འགྲོ	‘luck’
LL: àà	[meɻ lõːʌ]	< [meʌ] + [lõːʌ]	མེ་ལོང	‘mirror’
11ɻ 114ʌ	DY: [laʔɻ ŋaɹʌ]	< [laʔʌ] + [ŋaɹʌ]	ལག་ངར	‘forearm’
	TN: [laʔɻ ŋarʌ]			
	[ɕuŋɻ lamʌ]	< [ɕuŋʌ] + [lamʌ]	གཞུང་ལམ	‘main road’
	[loɻ saːʌ]	< [loʌ] + [saː˧]	ལོ་གསར	‘new year’
	DY: [laʔɻ kʲeːʌ]	< [laʔʌ] + [kʲʰeː˧]	ལག་འཁྱེར	‘passport,
	TN: [laʔɻ kʲʰeːʌ]			certificate’
	[ɲɛːɻ ɯãːʌ]	< [ɲɛːʌ] + [kʰãː˧]	ཉལ་ཁང	‘bedroom’

Lhasa Tibetan has been analyzed as possessing a template-based word-tone system, where polysyllabic tone patterns follow specific tonal templates (Sprigg, 1955, 1981, 1993; Sun, 1997). According to the template-tone analysis, disyllabic tonal templates include HH (55˧ 51˥, 55˧ 54˥, 55˧ 55˧), LH (11ɻ 51˥, 11ɻ 54˥) and LL (11ɻ 114ʌ) (T. Hu, 1980; Qu, 1981; Sedláčcek, 1959; Sprigg, 1955, 1981, 1993; Sun, 1997).

In Lhasa Tibetan disyllabic words, there is non-final pitch contour reduction, that is, generally only level pitches (11ɻ and 55˧) are allowed in non-final syllables. For instance, non-final L (13ʌ, 131ʎ and 114ʌ) becomes level 11ɻ, and non-final H (54˥, 51˥ and 55˧) becomes level 55˧. Moreover, the H versus L tones are generally only contrastive on the first syllable. For the second syllable with a short rhyme, it carries a default H (51˥, 54˥). However, for the second syllable with a long rhyme like V:, $VC_{[+son]}$ and Ṽ:, it acquires its pitch height from the first syllable, regardless of its original monosyllabic tone specification. For example, the second syllable with a long rhyme bears an L tone (114ʌ) when preceded by an L tone (13ʌ, 131ʎ and 114ʌ), e.g., [ɲɛːɻ ɯãːʌ] < [ɲɛːʌ] + [kʰãː˧] ‘bedroom,’ whereas it bears an H tone (55˧) when preceded by an H tone (54˥, 51˥ and 55˧), e.g., [mɛ̃ː˧ gãː˧] (DY)/[mɛ̃ː˧ ɯãː˧] (TN) < [mɛ̃ː˧] + [kʰãː˧] ‘hospital.’ The pitch tracks of disyllabic tones are shown in Figure 13.

For trisyllabic tones, tonal templates like LHH and HHH have been proposed (Lim, 2018; Qu, 1981; Qu & Tan, 1983; Sun, 1997). Based on this proposal, the L versus H contrast is only licensed word-initially while the second syllable and the third syllable bear H tones only. Moreover, the pitch contour difference is allowed on the third syllable only. Quadrisyllabic tonal templates can be analyzed as the combination of two disyllabic tonal patterns, e.g., HHHH, LHHH, HHLH and LHLH (Lim, 2018; Qu & Tan, 1983). However, it should be noted that trisyllabic and quadrisyllabic tonal patterns cannot always be predicted based on these

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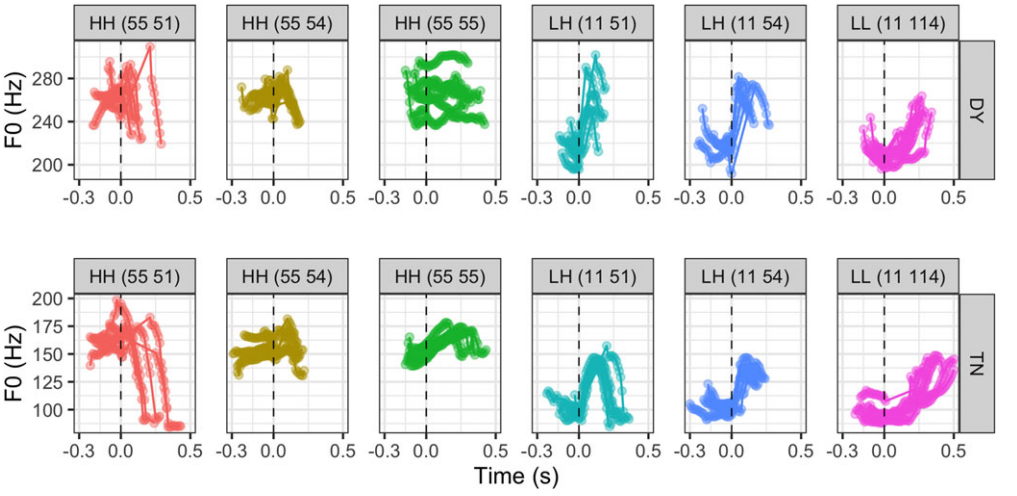

Figure 13. (Colour online) The F0 tracks of Lhasa Tibetan disyllabic tones (top: DY; bottom: TN). For each tonal template, there are six tokens taken from the example list of disyllabic tones. The F0 trajectories are aligned by the end of the first syllable (indicated by a dashed line corresponding to time point 0).

templates. Due to morphological or semantic factors, the grouping of syllables into phonological words in trisyllabic and quadrisyllabic words can vary considerably, complicating the template-based analysis of trisyllabic and quadrisyllabic tones (see Lim, 2018 and Qu, 1981 for more details).

Neutral tones

Disyllabic forms	Monosyllabic forms	Orthography	Gloss
[má tá]	< [ma] + [tá]	མ་གྲ	'don't look'
[má kúː]	< [ma] + [kúː]	མ་སྐྱེད	'don't send'
[mà tɕʰéʔ]	< [ma] + [tɕʰèʔ]	མ་བྱེད	'don't do'
[màɳ tʂó]	< [ma] + [tʂò]	མ་འགྲོ	'don't go'
[màɲ tɕèː]	< [ma] + [tɕèː]	མ་མཇལ	'don't see (honorific)'

Certain grammatical words in Lhasa Tibetan can be analyzed as carrying neutral tones (or toneless). The neutral tone acquires its pitch from its adjacent syllable. For example, the tone specification of the negator /ma/ 'not' is altered depending on the monosyllabic tone of the following syllable.

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Transcription of the recorded passage

Orthographic version (semi-colloquial[7])

ཅིངས་ཞིག། བྱང་རྒྱུང་དང་ཉི་མ་གཉིས་ཀྱིས་ཁན་ཚུན་བར་འཛོན་ཐང་ཡོད་མེད་སྐོར་ལ་རྩོད་བླེང་བྱས་པ་རེད། དེ་དུས། ཏག་ཏག་ཟོ་གཉིས་ཀྱིས་མདུན་དུ་མི་ཞིག་ཕྱིན་པ་མཐོང་། མི་དེས་ཚར་གོས་ཤེག་གྲོན་ཡོད་པ་རེད། ཟོ་གཉིས་ཀྱིས་སུས་མི་དེས་གྲོན་པའི་ཚར་གོས་དེ་འཕྱང་ཐུབ་ན། སུ་ལ་འཛོན་ཐང་ཡོད་པར་རྩིས་ན་འགྲིག་གི་རེད་ཞེས་བཤད་པ་རེད། དེ་མ་ཐག། བྱང་རྒྱང་གིས་གང་ནུས་ཀྱིས་རྒྱུང་བརྒྱབ་པ་རེད། བསམ་ཡུལ་ལས་འདས་པ་ཞིག་ལ། ཟོས་རྒྱང་ཤུགས་ག་ཚོད་ཆེ་བ་བརྒྱབ་ན་ཡང་མི་དེའི་ཚར་གོས་དེ་བས་དམ་དུ་ཕྱིན་པ་རེད།་མཐར། བྱང་རྒྱང་ཐབས་ཤེས་ཡོངས་སུ་རྫོགས་ནས། རློས་གཏོང་མི་བྱེད་ཀ་མེད་ཐུང་། དེའི་རྗེས་སུ་ཉི་མ་ཐོན་ནས་ཉི་འོད་ས་གཞིར་ཤུགས་ཏུ་འཚོར་བའི་དུས། མི་དེས་ལམ་སང་ཚར་གོས་མར་འཕྱང་པ་རེད། དེར་བརྟེན། བྱང་རྒྱང་གིས་སོ་སོ་ཐོར་བར་ཁས་བླངས་པ་རེད།

Transcription

A broad phonemic transcription is adopted in this section. Vowel harmony and plosive deaspiration are not transcribed. Phonological tones are indicated by diacritics. Many functional words are transcribed as having a phonological low tone, which is generally realized as a low level pitch. Minor and major breaks are indicated by | and ‖ respectively. Abbreviations used for the gloss: DEF = definite; INDEF = indefinite; ERG = ergative; OBL = oblique; ASS = associative; GEN = genitive; INS = instrumental; ABL = ablative; FAC = factual; PST = past; PERF = perfect; FUT = future; NMLZ = nominalizer.

tʰéŋʔ	ɕìʔ |	tɕʰàŋ-lùŋ-tʰàŋ	ɲì má-ɲíʔ-kʰì	pʰɛ̃́: tsʰỹ́:	pʰàɪ
time	one	north-wind-ASS	sun-two-ERG	mutual	between

Once upon a time, the North Wind and the Sun were arguing with each other

tɕə̀ː tʰàŋ	jə̀ʔ méʔ	kóɪ là |	tsóʔ léŋʔ	tɕʰɛ̀ʔ-pà ɹèʔ ‖	tʰè-tʰýʔ	táʔ táʔ	kʰó-
strength	have or not	about	argue	did-PST.FAC	that-time	exactly	he-

about which of them was stronger. Then, they just saw

-ɲíʔ-kʰì	tỳː tʰù	mì-ɕìʔ	tɕʰɛ̃́(ː)ʔ-pà	tʰóŋ ‖	mì-tʰèʔ	tɕʰáɪ kʰóʔ-ɕíʔ
two-ERG	in front	person-INDEF	went-NMLZ	see	person-DEF.ERG	rain coat-INDEF

a person passing by in front of them. The person wore

[7] The register of this passage is treated as semi-colloquial. The lexicon and grammar of the passage are based on colloquial Lhasa Tibetan rather than the written language Classical Literary Tibetan. However, since it is a written passage, it still contains some literary elements in sentence structure, lexicon and pronunciation. The semi-colloquial register is still more formal to some extent than the casual colloquial speech used in daily conversations.

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kʲʰɔ̃ː-jɔ̀ʔ pà ɹèʔ ‖ kʰó-ɲíʔ-kʰì sýʔ mì-tʰèʔ kʲʰɔ̃ː-pɛ̀ː

wear-PERF.FAC he-two-ERG who.ERG person-DEF.ERG wear-NMLZ.GEN

a rain coat. They said that the one who could

tɕʰáɪ kʰóʔ-tʰè pʰýʔ tʰúp-ná | sú là tɕɔ̃ː tʰàŋ jɔ̀ʔ-pàɪ

rain coat-DEF take off can-if who-OBL strength exist-NMLZ.OBL

make the person take his rain coat off should be

tsíʔ-ná tʂìʔ-kí ɹèʔ ɕèʔ ɕɛ́ʔ-pà ɹèʔ ‖

think-if alright-FUT.FAC so said-PST.FAC

considered stronger than the other.

tʰè má tʰáʔ | tɕʰàŋ-lùŋ-kʰì kʰàŋ-nýʔ-kʰì lúŋ

immediately north-wind-ERG whatever-ability-INS wind

Then, the North Wind blew as hard as

kʲàp-pà ɹèʔ ‖ sám jýː-lɛ̀ tɛ̀ʔ-pà-ɕìʔ-là | kʰóʔ lúŋ-ɕúʔ kʰà tsʰóʔ

did-PST.FAC thought-ABL passed-NMLZ-INDEF-OBL he.ERG wind-strength how much

he could. Unexpectedly, the more he blew

tɕʰé-wà kʲàp-ná jàŋ | mì tʰèː tɕʰáɪ kʰóʔ tʰè wɛ́ʔ tʰàm tʰù

big-NMLZ did-although person-DEF.GEN rain coat more than that tightly

the more closely did the traveler fold his cloak

tɕʰɦ̃í(ː)ʔ-pà ɹèʔ‖ tʰáɪʔ | tɕʰàŋ-lùŋ tʰáp ɕéʔ jòŋʔ sù tsòʔ nɛ̀ |

went-PST.FAC finally north-wind strategies all finished after

around him. Lastly, the North Wind ran out of strategies and

lóʔ tóŋ mì-tɕʰéʔ ká méʔ tɕʰùŋ ‖ tɛ̀ː-tɕɛ̀ʔ sù | ɲì má DY: tʰɔ̃́(ː)ʔ

TN: tʰɔ̃́ː

give up not-do no way but to become that.GEN-after sun came out

he had to give up. Then, the Sun went out,

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nɛ̀ |	ɲì-ǿʔ	sá ɕíɪʔ	ɬá tù	tsʰéɪ-wɛ̀ː-tʰỳʔ |
after	sun-light	ground.OBL	especially	shine-NMLZ.GEN-time

and the sunlight shone brightly over the ground.

mì tʰɛ̀ʔ	làm sàŋ	tɕʰáɪ kʰǿʔ	màɪ	pʰýʔ-pà ɪɛ̀ʔ ‖	tʰɛ̀ɪ-tɛ̃ː |
person-DEF.ERG	immediately	rain coat	downward	took off-PST.FAC	that.OBL-based on

The person immediately took off his rain coat. Therefore,

tɕʰàŋ-lùŋ-kʰì	só só	ɕóɪ-wàɪ	kʰɛ́ʔ láŋʔ-pà ɪɛ̀ʔ ‖
north-wind-ERG	his own	lose-NMLZ.OBL	confessed-PST. FAC

the North wind confessed that he lost the contest.

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Supplementary material To view supplementary material for this article, please visit https://doi.org/10.1017/S0025100324000033

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