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ILLUSTRATIONS OF THE IPA

Khowar

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Khowar (ISO 639-3: khw) is an Indo-Aryan language spoken by 200,000-300,000 (Decker 1992:31–32, Bashir 2003:843) people in Pakistan's Khyber Pakhtunkhwa Province (formerly North-West Frontier Province). The majority of the speakers are found in Chitral (a district and erstwhile princely state bordering Afghanistan), where the language is used as a lingua franca, but there are also important pockets of speaker groups in adjacent areas of Gilgit-Baltistan and Swat District as well as a considerable number of recent migrants to larger cities such as Peshawar and Rawalpindi (Decker 1992:25–26). Its closest linguistic relative is Kalasha, a much smaller language spoken in a few villages in southern Chitral (Morgenstierne 1961:138; Strand 1973:302, 2001:252). While Khowar has preserved a number of features (phonological, morphological as well as lexical) now lost in other Indo-Aryan languages of the surrounding Hindukush-Karakoram mountain region, it has, over time, incorporated a massive amount of lexical material from neighbouring or influential Iranian languages (Morgenstierne 1936) - and with it, new phonological distinctions. Certain features might also be attributable to formerly dominant languages (e.g. Turkic), or to linguistic substrates, either in the form of, or related to, the language isolate Burushaski, or other, now extinct, languages previously spoken in the area (Bashir 2007:208–214; Morgenstierne 1947:6, 1932:48). There is relatively little dialectal

variation among the speakers in Chitral itself, probably attributable to the relative recency of the present expansion of the language (Morgenstierne 1932:50).

The speech described here is primarily that of Mastuj in upper Chitral. The transcription is based on a recording of the speech of the second author, Afsar Ali Khan, himself a native speaker, born 1984 in Chinar, Mastuj, now residing in Islamabad. The orthography used in the sample below is essentially one that was gradually developed from the early 20th century onward by Mehtar (ruler of Chitral) Nasir-ul-Mulk, Mirza Mohammad Ghufraan, and the father-and-son team of Prince Hisam-ul-Mulk and Prince Samsam-ul-Mulk, and subsequently promoted by Anjuman-e-taraqqi-e-Khowar ‘the Society for the Promotion of Khowar’ (Shahzad 1989:32, Munnings 1990a:18–20, Buddruss 1982:7–27).

Consonants

	Bilabial	Dental/alveolar	Postalveolar (apical)	Postalveolar (laminal)	Velar	Uvular	Glottal
Plosive	p b p ^h	t d t ^h	t̪ d̪ t̪ ^h		k g k ^h	q	
Nasal	m	n					
Affricate		ts dz ts ^h	t̪s̪ d̪z̪ t̪s̪ ^h	t̪ç̪ d̪z̪̪ t̪ç̪ ^h			
Fricative	f	s z	ʃ ʒ̪	ç ʒ̪̪	x ɣ		h
Tap		r					
Approximant	ʋ			j			
Lateral approximant		ɭ		l			

Khovar makes use of seven places of articulation, of which five (excluding the more marginally used uvular and glottal places) play a major contrasting role within its manner-of-articulation subsets. The plosives within the area labelled dental/alveolar have a distinctively dental, or even interdental, closure, whereas for the affricates and fricatives, the tongue touches the alveolar ridge near the upper row of teeth. The consonants belonging to this set all have, as far as we have been able to determine, an apical articulation.

Two of the columns are labelled postalveolar, emphasizing that the primary contrast is one between (retracted) apical and laminal articulations. Following a traditional treatment, the

sounds in the apical postalveolar set are transcribed using the symbols for retroflexion, as they often are pronounced with the tongue slightly curled back, with the tip meeting the region posterior to the alveolar ridge. It should be noted, however, that the degree of retroflexion is lesser than that of many of the more well-known South Asian languages. As for the laminal postalveolar consonants, the closure, using the blade of the tongue, covers a larger area than that of the corresponding apical sounds, stretching from the alveolar ridge, or the area just posterior to it, to the palatal region, which is the reason we have chosen to represent the affricates and fricatives with symbols normally reserved for alveolo-palatal sounds.

While the occurrence of the sounds /f/, /q/, /x/, and /ɣ/, in most other Indo-Aryan languages, even in the surrounding region, is restricted to relatively recent (but pervasive) loans from Persian and Arabic, they occur in Khowar quite frequently also in native and basic vocabulary items (Bashir 2007:217), for example: /qɑf/ ‘paw’, /lɔq/ ‘rags’, /ɣɑt/ ‘polo, game’, /mɔx/ ‘face’. The plosive contrast /k/ vs. /q/ is well-established and consistently upheld, an areal feature of adjacent Central Asia rather than of South Asia and Indo-Aryan at large (Tikkanen 2008:252–254). There is no corresponding velar-uvular contrast in the fricative set; instead, there is a wider articulatory scope of the fricatives /x/ and /ɣ/ listed in the velar column; they are often realized as [χ] and [ʁ], respectively.

The only unambiguous contrast in the nasal set is that between /m/ and /n/. Nasals with laminal postalveolar, apical postalveolar or velar places of articulation should probably be regarded as environmentally conditioned allophones of /n/. A palatal (or alveolo-palatal) allophone often occurs immediately preceding a laminal postalveolar affricate, /d͡ʒand͡ʒal/ [d͡ʒɛ̃n'd͡ʒɜl] ‘dispute’; a retroflex one preceding an apical postalveolar occlusive segment, /d͡ʒɛ̃nd͡ʒɛ̃r/ [d͡ʒɛ̃n'd͡ʒɛ̃r] ‘chain’ (< Persian /zænd͡ʒir/); and a velar preceding a velar occlusive, /aŋgar/ [ɛ̃ŋ'ga:r] ‘fire’. There are also some indications that retroflex assimilation may apply across entire syllables (and beyond), as in /tʰun/ [tʰũŋ] ‘pillar’ or /ʃanax/ [ʃɛ̃'ŋɛx] ‘white-faced (cattle)’, an areal feature in line with the findings of Arsenault (2015). A plosive preceded by a

nasal segment can be dropped when in coda position, as in /d̪aŋg/ [d̪ɛŋ] (also realized as [d̪ɛŋk]) ‘hard’.

The placement in the table of the two contrasting lateral approximants is somewhat debatable. /l/ is either alveolar or postalveolar, and it is often slightly palatalized, whereas /ɭ/ is dental and velarized. Khowar has no retroflex flap in its inventory. Instead, /ɭ/ corresponds regularly to /ɽ/ in loans from e.g. Urdu: /gʊɽi/ ‘(wrist-)watch’ (< /gʱaɽi/). Although the Khowar orthography also makes use of the same symbol that signifies Urdu /ɽ/ for Khowar /ɭ/, it should be duly noted, as already pointed out by Bashir (1988:37–38), that the Khowar sound is not retroflex.¹

While /ɽ/ in careful speech indeed has a tap pronunciation, it shows a great deal of variation in connected speech, although we are not at this point able to systematically account for its allophonic variation. It is sometimes realized as an approximant [ɻ], and, especially word-finally, it is often wholly or partly devoiced, as in /taqatdaɽ/ [t̪eqə^hɽaːɽ] ‘powerful’.

The approximant /v/ is mostly labiodental but has a rather wide articulatory range, including labiodental [v] as well as bilabial [w] realizations. Apart from the lexically defined approximants /v/ and /j/, occurring unambiguously mainly at word boundaries, [v] and [j] may also be inserted epenthetically at syllable boundaries, to separate two vowels, /tʰuɛk/ [tʰuvɛk]. The glottal fricative /h/ has a voiced allophone [ɦ], mostly occurring intervocalically.

p	paz	‘chest’	apak	‘mouth’	bap	‘old man, grandfather’
p ^h	p ^h uk	‘little, little child’	kap ^h ɔɽ	‘hat (Chitrali style)’		
b	bax	‘hole’	ʃabək	‘bride’		
f	faqer	‘mendicant, ascetic’	kafer	‘infidel’	qaf	‘paw’

m	maɫ	‘nest’	ʂamay	‘veil’	d̪zam	‘fine’
ʋ	ʋaʋ	‘old woman, grandmother’	ava	‘I’	ʋaʋ	‘old woman, grandmother’
t	tat	‘father’	batin	‘leash, lead’	tat	‘father’
tʰ	tʰuɛk	‘gun’	ʋetʰuk	‘stick’		
d	dɔɫ	‘loud’	badɛl	‘exchange’		
n	nan	‘mother’	ʂanax	‘white-faced (cattle)’	nan	‘mother’
t̪s	t̪seq	‘child’	rat̪etsik	‘beating’	bits	‘chest, bust’
t̪sʰ	t̪sʰɔk	‘bundle of thorny branches’	mat̪sʰi	‘fish’		
d̪z	d̪zah	‘curry; wet’				
s	sal	‘year; plummet’	basir	‘young female goat’	bas	‘stop; enough’
z	zɔm	‘mountain’	pazek	‘black dog with white chest’		
r	rah	‘road’	jaraq	‘weapon’	brar	‘brother’
l	lɔq	‘rags; worn, useless’	tuleni	‘wooden kajal applicator’	sal	‘year; plummet’
ɬ	ɬɔʋ	‘fox’	aɬi	‘duck’	maɫ	‘nest’
t̪	t̪iki	‘bread (small)’	baɬuɫ	‘small milk pot’	braɬ	‘a kind of thick bread’
tʰ	tʰun	‘pillar’	kuɬʰu	‘shoulder’		
d̪	d̪ang	‘hard’	baɬɛr	‘border guard’		
t̪ʂ	t̪ʂang	‘hug’	traɬʂɔn	‘carpenter’	pɛt̪ʂ	‘hot’
t̪ʂʰ	t̪ʂʰan	‘leaf’	baɬʂʰɔɫ	‘calf’		
d̪ʒ	d̪ʒɛnd̪ʒɛr	‘chain’				

ʂ	ʂapik	‘bread, food’	baʂɔɣ	‘tributary’	tuʂ	‘hay’
z	zɑr	‘poison’	bazɑlapɪ	‘pitchfork’		
t̪	t̪ɑr	‘cliff’	kat̪ɐr	‘local medicine’	bɛt̪	‘aunt’
t̪ʰ	t̪ʰɔr	‘four’	prat̪ʰar	‘crop wages’		
d̪	d̪ɑm	‘fine’	gud̪zʊr	‘Gujur (person belonging to nomadic group)’		
ɕ	ɕɛr	‘lion; is (inan)’	lɛɕu	‘cow’	mɔɕ	‘man’
ʒ	ʒɑn	‘soul’	azɛli	‘child, offspring’		
j	jaraɣ	‘weapon’	t̪ʰɛjaɣ	‘rear part of horse’	t̪ɕaj	‘tea’
k	kar	‘ear’	mɔkuɫ	‘monkey’	kahak	‘hen’
kʰ	kʰɔj	‘cap’	nɔkʰi	‘chute’		
g	gɔɫ	‘front part of neck’	magas	‘fly’		
x	xɑl	‘taste’	uxar	‘ladder’	mɔx	‘face’
ɣ	ɣɑɫ	‘polo, game’	bɔɣuzu	‘frog’		
q	qɑf	‘paw’	fɑqɛr	‘saint, ascetic’	ɖɑq	‘boy’
h	hɑɫ	‘goal’	kahak	‘hen’	bɑh	‘kiss’

We conclude that contrasts in voicing and aspiration are neutralized word- or utterance- finally, noted as well by Endresen & Kristiansen (1981:238). Therefore, no examples are shown in the table of voiced or aspirated plosives, affricates or fricatives in final position. We only have stable evidence of plosive sounds with a voiceless unaspirated realization in utterance-final environments. This process is also reflected through regular voicing and aspiration alternations in inflectional paradigms:

/t ^h ux/	[t ^h ux]	‘steam’	vs.	/t ^h uxɔ/	[t ^h ʊ ¹ xɔ]	‘steam OBL’
/t ^h ay/	[t ^h aːx]	‘new twig’	vs.	/t ^h ayɔ/	[t ^h ɜː ¹ ɣɔ]	‘new twig OBL’
/krɔt ^h /	[krot]	‘tree trunk’	vs.	/krɔt ^h ɔ/	[krɔ ¹ t ^h ɔ]	‘tree trunk OBL’

However, a reason for regarding the final sound of e.g. /paz/ ‘chest’ or /t^hay/ ‘new twig’ as underlyingly voiced, is the consistent lengthening of the vowel preceding it (see below) along with native-speaker intuition. Whether there are other acoustic traces of voicing or aspiration in de-voiced or de-aspirated items, and whether de-voicing or de-aspiration should be seen as gradual rather than complete (as seems to be what Baart (1997:13–15) suggests for utterance-final de-voicing in Indo-Aryan Kalam Kohistani), remain pending questions.

The contrast between the voiced fricatives /z/, /z̤/, /z̥/, and their affricate counterparts /d͡z/, /d͡z̤/, /d͡z̥/, is marginal, partly allophonic, and far from uniform throughout the speaker community. Of these, the phonemic status of /d͡z̥/ seems particularly uncertain (Bashir 2007:237). The contrast is in any case neutralized following a nasal, an environment where only an affricate pronunciation occurs. We have found no examples of intervocalic /d͡z̥/ or /d͡z̤/. While the evidence for a phonological contrast between voiceless unaspirated and voiceless aspirated affricates has been identified as weak (Endresen & Kristiansen 1981:239), our own acoustic data indicate significant phonetic differences between such segments across near-minimal pairs (as can be seen in Figure 1).

Figure 1

Spectrograms showing the unaspirated and aspirated affricates in the near-minimal pair

/t͡sʌŋ/ ‘hug’ and /t͡sʰʌŋ/ ‘leaf’. The words are uttered in the middle of an identical sentence

frame, /hamɔtɛ ____ rɛt/ ‘This is called ____’ (lit. To this ____ he/she says).

The segment of friction in the aspirated item is both longer in duration and of higher intensity, and there is a concomitant lowering of the F_0 on the following vowel. However, some evidence seems to indicate that the realization of aspiration, at least with affricates, might be limited to stressed syllables (cf. [drɔ̌t͡sʰɔ̌] ‘grapes OBL’ and [ˈdrɔ̌t͡sɔ̌] ‘grapes LOC’, the phonetic realizations of two different case forms of /drɔ̌t͡sʰ/ ‘grapes’).

In the speech of the second author, the affricate vs. fricative contrasts, along with a three-way voicing and aspiration contrast, are consistently upheld in word-initial position, thus giving us a set of nine affricates, which is in line with previous reports (Munnings 1990b:6) of the speech typical of Upper Chitral, i.e. the original homeland of the language.

Vowels

Khowar has five contrastive vowels. The chart represents target articulations of those, especially as they are realized in stressed positions. Unlike many other Indo-Aryan languages, nasalization is not distinctive, but any vowel adjacent to, particularly preceding, a nasal consonant becomes slightly nasalized. There is no evidence of duration as a primary contrast within the vowel system, although lengthening of vowels occurs concomitant with a few other phonological features (see below). The distinguishing features are front /i ɛ/ vs. back /u ɔ ɑ/; open /ɛ ɑ ɔ/ vs. close /i u/; and unrounded /i ɛ ɑ/ vs. rounded /u ɔ/. Our conclusion is therefore that the main distinguishing feature between /ɑ/ and /ɔ/ is roundedness rather than tongue position, further evidenced by the overlapping /ɑ/ and /ɔ/ tokens plotted in Figure 2.

i	dik	‘to beat’
	bi	‘seed’
ɛ	dɛk	‘leg’
	hɛ	‘that’
ɑ	dɑq	‘boy’
	da	‘take!’
u	buk	‘throat’
	ɕu	‘porcupine’
ɔ	dɔk	‘carried on back’
	ʒɔ	‘grain’

Each of the five vowels has a wider, and often overlapping, range of realizations in natural speech, as can be seen in Figure 2, where the measurements of F1 and F2 of individual vowels are plotted in a vowel space chart. Most of the vowels have more centralized allophones, particularly in unstressed syllables. Vowels may also in connected speech take on a breathy or rhotic pronunciation (see, Narrow transcription of the recorded passage), primarily as the result of assimilation with features of surrounding consonants.

Figure 2

Khowar vowels in F1 vs. F2 space. The measurements were those of vowels occurring in 64 vocabulary items uttered within an identical sentence frame (see Figure 1 caption) by one male speaker.

Stress, tone and vowel duration

The placement of stress is lexically contrastive in Khowar. The most frequent stress pattern is one with main stress on the final syllable, but it may also fall on the penultimate (and possibly even the antepenultimate) syllable of an uninflected word (here marked with an acute accent).

káti	‘kind of (noodle) soup’	vs.	kaí	‘yoke collar stick’
táru	‘fast runner’	vs.	tarú	‘batter’
bélu	‘basket, weight measure (ab. 20 kg)’	vs.	beíu	‘flute’

The most prominent acoustic correlate of stress is pitch height or pitch change associated with the syllable nucleus, but it is often accompanied by greater intensity as compared with

adjacent unstressed syllables. Differences in vowel duration or vowel quality, on the other hand, do not seem to bear any direct significance as far as stress is concerned, although, as we will return to shortly, only vowels in stressed syllables can be subject to lengthening. Apart from making purely lexemic differentiations, stress placement can have derivational or inflectional functions (/garúti/ ‘leprosy patient’ vs. /garuṭí/ ‘leprosy’; /ṭṣ^hétrɔ/ ‘field LOC’ vs. /ṭṣ^hetró/ ‘field OBL’). A minority group of affixes are lexically stressed. When more than one stressed morpheme occurs in a word, the main stress (normally) falls on the right-most lexically stressed syllable.

Apart from stress, as described above, a number of items have a low tone, lexically assigned to a vowel (as previously noted by Morgenstierne (1932:49–50) and Bashir (2007:237)). In those cases, stress is associated with the locus of the low tone (here marked with a grave accent), usually realized as a noticeably low-rising pitch throughout the vowel, the latter of significantly longer duration than vowels occurring in otherwise identical or analogous environments, as exemplified by the non-low vs. low tone monosyllabic minimal pairs below.

bas [bas]	‘bus; enough’	vs.	bàs [bǎ:s]	‘flame’
dɔn [dɔn]	‘tooth’	vs.	dòn [dǒ:n]	‘ghee’
len [len]	‘knot’	vs.	lèn [lě:n]	‘a type of flower’ ²

While Old Indo-Aryan had voiced aspirated consonants (Cardona & Jain 2003:10), many of the descendant languages in the region, including Khowar, have lost those as distinctive segments. There is, however, a notable co-occurrence of a low tone with (preserved) voiceless aspiration in Khowar; and there is also the occurrence of a low tone in words that involved voiced aspiration in the ancestor language (Buddruss 1982:26–27), although with a far from total one-to-one mapping, e.g., /bàs/ ‘flame’ < Old Indo-Aryan bhāśá- ‘light’ (Turner 1966:9480); and /dòn/ ‘ghee’ < *dhadan- < OIA dadhan- (Morgenstierne 1932:49). While in

the speech of the second author, the only reflex of this historical voiced aspiration is the low-rising pitch, Morgenstierne (1932:49–50) reported almost a century ago that there were traces of aspiration with voiced plosives in some varieties of the language.

Figure 3

F0 in /dɔ̃n/ ‘ghee’ and /dɔ̃nɔ/ ‘ghee OBL’, respectively.

Figure 4

F0 in /dɔ̃n/ ‘tooth’ and /dɔ̃nɔ/ ‘tooth OBL’, respectively.

Stress of this latter kind further stays on the tone-bearing unit of the root even when a normally stressed affix is added to it (as illustrated with the lexical item /dɔ̃n/ ‘ghee’ in its basic and inflected form, respectively, in Figure 3; this contrasts with the stress shift that /dɔ̃n/ ‘tooth’

undergoes when inflected, as can be seen in Figure 4), at least as far as we have been able to account for.

Apart from the significantly longer vowel duration concomitant with a low-rising pitch (as pointed out above), it has been suggested (Bashir 2003:843, 2007:237) that certain lexical items contain a (half-)long vowel with falling pitch and that Khowar therefore may be analysed (and represented) similarly to e.g. neighbouring Shina languages, in which the tone-bearing unit equals a vocalic mora (Radloff 1999:57–88, Schmidt & Kohistani 2008:24–27, Liljegren & Haider 2009:385).³ This analysis has not been confirmed in our study. Instead, we found that vowels often are pronounced with a longer duration if stressed (cf. Morgenstierne (1955)) and followed by a voiced consonant, particularly so in closed syllables with /r/ or /ʁ/ in the coda. Such lengthened vowels may in addition display a (high-)falling pitch pattern: as in /kɑr/ [kâːr] ‘ear’ and /yɑʁ/ [yâːʁ] ‘polo, game’. As already mentioned, this is also the case when an underlyingly voiced consonant is subject to utterance-final devoicing: /pɑz/ [pâːs] ‘chest’. The only instance where we find it necessary to use two identical vowel symbols adjacent to one another in the representation of Khowar (phonological) words is when a vocalic morpheme is suffixed to a stem ending in an identical (stressed) vowel, thus creating a long stressed vowel /almaríi/ [almaˈriː] ‘in the cupboard’ (< /almarí/ ‘cupboard’ + /i/ ‘LOC’).

Broad transcription of recorded passage

ɕu'malo gan va jər dʒan'dʒal kə'rau ɔ'ɕoni, ha'se dʒan'dʒal bə saxt ɔ'ɕoj, 'kjavat ki musa'fer
 haj bəsk ɕə'qə 'kaɦi pɛ'tsʰi, ha'tet ha'ja 'luo 'prani ki, ka ki hɛ musafɛ'rɔ tʃa'ke ɕə'qə ki
 pɛ'tsʰɛtaj, ha'se dʒit bəj. va haʃ dʒə'ʂonu bəj ki, ha'se bə taqat'dar. rɛ tʰɛ ha'se ɕu'malo gan
 'hani pin həj ki, kan'duri ki ha'tə va'sa həj. 'magam musa'fer tan ɕə'qə 'ranaran ɖaŋg bətitaj.
 a'xeri gan 'beɦtɕi pɛ'tsʰitaj. kja'vat ki jər pin bik ɕu'ruy a'rɛr, musa'fer tan ɕə'qə 'jakdam
 pɛ'tsʰitaj. haʃ'tan 'tɕaqa ɕu'malo gan mɑdʒbu'ran mani'taj ki, jər taqat'dar hɛ dʒu'jen 'muʒi.

Narrow transcription of recorded passage

ɕʊ'ma:lə gɑːn vɐ'joːr ɖʒɛ̃n'dʒəl kə'rau ɔ'ɕoni | hɛ'si ɖʒɛ̃n'dʒəl bə'sax tɕə'ɕoi | kɪə'vatki
 mʌsə'feːr ɦaːn bəsk ɕə'qə 'kaɦi pɛ'tsʰi | ha'ti tʰɐ'ɛ 'lʊwə 'prɛ̃niki | 'kaːki 'ɦɛ̃mʌsɑ'fɪrɐ'tʃə'ke
 ɕə'qəːki pɛ'tsʰɛːtɐ | hɛ'si dʒid bəi || vɑ'ɦaːʃ dʒə'ʂnu 'bɐ'iki | hɛ'si bə'tɐqə'daːr | 'rɛːtʰɛ ɦɛ'si
 ɕʊ'ma:lə gɑːn 'hɛ̃ni 'pɪ̃nɦoiki | kɛ̃n'dʌriki hɜ'tovɐsɜ ɦoːr || mɛgʌmʌsə 'fɛːɦɪtʌn ɕə'qəː
 'rɑːnɜrɑːn dʒɛ̃ 'bɔ'titɜ || vɛ̃xɛ'ri gɑːn 'beɦtɕi pɛ'tsʰitɜ || kɪə'vatki 'joːr 'pɪ̃mbik ɕu'ruː ɜː'reːr |
 mʌsə'fɛːɦɪtʌn ɕə'qəː 'jɜgdɛ̃m pɛ'tsʰitɜ || hɜ'stʌn 'tɕəqɐ ɕʊ'ma:lə gɑːn mɛdʒbu'rɑːn mɛ̃ni'teiki
 | joːr tɐqə'daːr ɦɪ'dʒu'jen 'muʒi ||

Orthographic version

شمالو گان وا یور جنجال کوراؤ اوشونی ہسے جنجال بو سخت اوشوئے کیاوت کی مسافر

ہائے بوسک شوقو کڑی پیشھی بتیت یہ لُوؤ پرانی کی کا کی ہے مسافرو چاکے شوقو

کی پیشھیتائے ہسے جیت بوئے وا ہٹس جوٹونو بوئے کی ہسے بو طاقتدار رے تھے ہسے

شمالو گان ہانی پین ہوئے کی کندوری کی بتو واسہ ہوئے مگم مسافر تن شوقو راناران

ڈانگ بوتیتائے آخری گان بہچی پیشھیتائے کیاوت کی یور پن بک شروع اریر مسافر تان

شوقو یکدم پیشھیتائے ہٹتان چقہ شمالو گان مجبوراً مانیتائے کی یور طاقتدار ہے جویین

موڑی۔

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¹ While /ʈ/ is not retroflex in the cardinal, posterior, sense, its correspondence in loanwords with retroflex segments makes sense when considering that both apicality and velarization are common articulatory properties of retroflex segments in languages with such consonants (Hamann 2003:32–38). We are grateful to one of the anonymous reviewers for pointing this out to us.

² Red or white flower, used for medicinal purposes.

³ The difference between the higher prominence of tonal contours in Shina as compared to that of Khowar, described somewhat impressionistically by Buddruss (1995:163–164), seems to reflect a very real difference between the moraic assignment of tone in a language with phonemic vowel length as the former, and pitch contours resulting from secondary vowel lengthening in a language, such as the latter, lacking such phonemic length contrasts.