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Nepali, a language of the Indo-Aryan family, is the official language of Nepal. According to the 2001 population census of Nepal, more than 11 million Nepalese (48.61% of the total population) claim this language as their mother tongue. It is also spoken in other countries of South Asia, such as India and Bhutan, as well as by members of the Nepalese Diaspora around the world. The population census of India of 1991 reported that more than two million Indians use Nepali as their mother tongue. Within Nepal, Nepali shows some dialectal variation mainly linked to geographical and socio-cultural factors. Nevertheless, the dialect called the ‘eastern’ dialect spoken by a majority of Nepali speakers shows rather little variation (Bandhu et al. 1971).<sup>1</sup>

Consonants

	Bilabial	Dental	Alveolar	Retroflex	Palatal	Velar	Glottal
Plosive	p      b p <sup>h</sup> b <sup>fi</sup>	t      d t <sup>h</sup> d <sup>fi</sup>		ʈ      ɖ ʈ <sup>h</sup> ɖ <sup>fi</sup>		k      g k <sup>h</sup> g <sup>fi</sup>	
Affricate			ts      dz ts <sup>h</sup> dz <sup>fi</sup>				
Nasals	m	n				ŋ	
Tap or flap			r				
Fricative			s				ʃ
Lateral			l				
Approximant	(w)				(j)		

The above table presents the phonologically contrastive Nepali consonants, as well as two further segments in parentheses: the approximants [j w] are the nonsyllabic variants of /i u/

<sup>1</sup> ‘As it turned out, these dialects [one spoken in Madi, representing the eastern dialect, and the other spoken in east Tansen, representing the western dialect – RK] are quite close to one another, phonologically speaking, and two distinct analyses at this early stage of analysis were not necessary.’ Bandhu et al. (1971: 1)

when preceded or followed by vowels. All the other allophonic variants will be presented in the discussion of the segments.

This study is based on the speech of Nepali speakers whose mother tongue is Nepali. The style of speech illustrated here is considered to be the standard variety spoken mostly by literate people and used in the national mass media. Except when otherwise indicated, our description is based on the speech of a speaker who originates from Biratnagar in eastern Nepal and who has spent most of his childhood and adolescence in eastern Nepal. He was 35 years old at the time of the recording.

The consonant chart above does not include consonants found uniquely in loanwords, including those from Sanskrit. Nepali orthography shows the influence of Sanskrit and makes a few distinctions that are not reflected in usual Nepali pronunciation but are sometimes heard in the pronunciation of educated speakers. A few of these ‘spelling pronunciations’ will be mentioned below. Nepali consonants are illustrated as follows:

p	pir	‘anxiety, pain’	b	bar	‘fence’
p <sup>h</sup>	p <sup>h</sup> ir	‘Turn on!’	b <sup>fi</sup>	b <sup>fi</sup> ar	‘burden’
t	tal	‘lake’	d	dar	‘a kind of tree’
t <sup>h</sup>	t <sup>h</sup> al	‘plate’	d <sup>fi</sup>	d <sup>fi</sup> ar	‘edge’
ts	tsar	‘four’	dz	dzar	‘married woman’s lover’
ts <sup>h</sup>	ts <sup>h</sup> ar	‘ash, dust’	dz <sup>fi</sup>	dz <sup>fi</sup> ar	‘weed’
ʈ	ʈaʈ	‘ruined’	ɖ	ɖol	‘bucket’
ʈ <sup>h</sup>	ʈ <sup>h</sup> āʈ	‘fashion, nattiness’	ɖ <sup>fi</sup>	ɖ <sup>fi</sup> ol	‘a large drum’
k	kal	‘time, death’	g	gol	‘circle, charcoal’
k <sup>h</sup>	k <sup>h</sup> al	‘kind, skin’	g <sup>fi</sup>	g <sup>fi</sup> ol	‘Mix! Stir! (liquid)’
s	sat	‘seven’	fi	fiat	‘hand’ <sup>2</sup>
l	lat	‘kick’	r	rat	‘night’ <sup>3</sup>
m	mam	‘rice’ (child language)			
n	nam	‘name’			
ŋ	nAŋ	‘nail’			

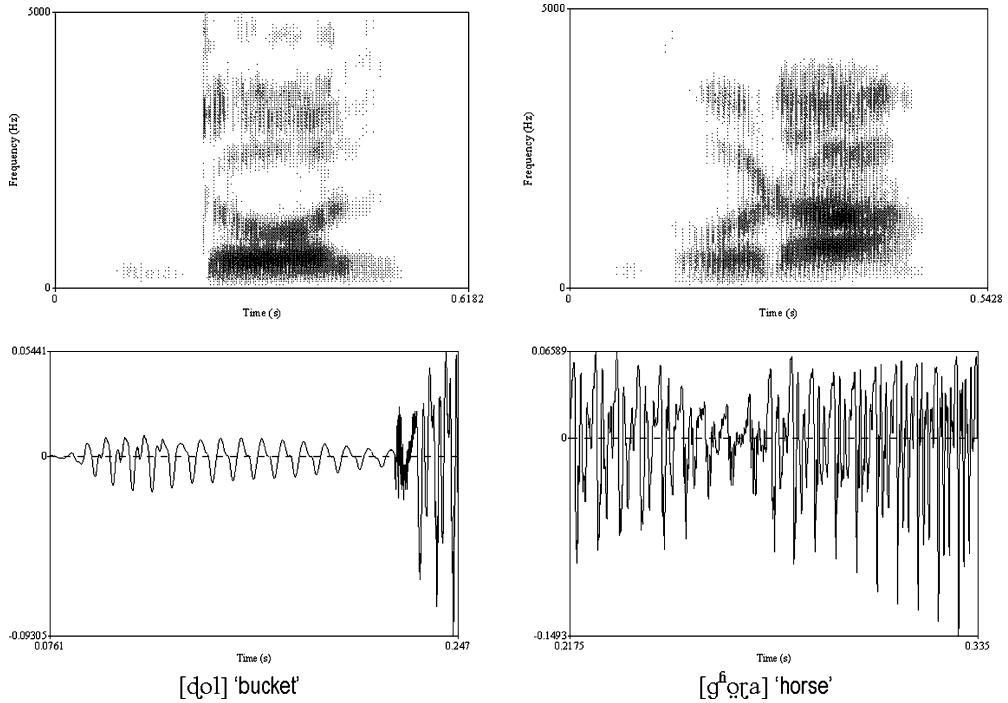
## Obstruents

### Retroflex

The Nepali retroflexes are produced in the region posterior to the alveolar ridge. They show a lesser degree of retroflexion than those in other languages of the Indian subcontinent such as Marathi, Gujarati and Tamil (Ladefoged & Bhaskararao 1983). Due to this lesser degree of retroflexion or its complete absence in some cases, some authors do not use this term (see Pokharel 1989). A recent palatographic study (Khatiwada 2007) shows that the tongue tip is curled back for some speakers after /a/ and /u/; for others, these sounds are apical. Following this former articulatory study, the term retroflex is used in this Illustration. When preceded by a vowel, a voiced retroflex is produced as a retroflex flap [ɾ] (see figure 1 for the two allophones of voiced retroflex /ɖ/). The retroflex stop articulation [ɖ] is maintained in geminates (see an example in the section on gemination).

<sup>2</sup> Pokharel (1989: 34) observed that the Nepali /fi/ was spectrographically breathy in the speech of his subjects. The speaker used in this illustration regularly produced voiceless [h]. Both types of /fi/ – voiceless and voiced – are found in our different recordings.

<sup>3</sup> [r] and [ɾ] are two allophones of /r/ (see the subsection on rhotics below).



**Figure 1** The above spectrograms and amplitude waveforms show the voiced retroflex /dʱ/ in two different positions in the word. This phoneme is produced as a plosive retroflex [dʱ] at the beginning of the word (left), whereas it is produced as a flap retroflex [ɾ] in intervocalic position (right). We can observe vocal fold vibration over a longer closure duration followed by a visible burst in the voiced retroflex [dʱ], whereas there is no closure duration or burst in the flap [ɾ].

/odʱne/	→	[oɾne]	‘blanket’
/gʱodʱa/	→	[gʱoɾa]	‘horse’
/tsʰodʱnu/	→	[tsʰoɾnu]	‘to leave’
/ʌdʱa/	→	[ʌɾa]	‘Stop!’

### Affricates

Palatograms of the Nepali affricates /ts tsʰ dz dzʱ/ by Pokharel (1989) and palatograms and linguograms of several speakers by the present writer (reported in Clements & Khatiwada 2007) have shown that these sounds are produced with laminal contact in the alveolar region. Auditorily, however, they often sound rather like palato-alveolar sounds to English and French speakers.

### Aspiration

Nepali has a phonological opposition between aspirated and unaspirated consonants in both voiced and voiceless obstruents. The voiced and voiceless aspirated sounds are produced with greater glottal opening than in the case of the unaspirated sounds. In the present Illustration, the term ‘aspiration’ is used as a cover term for both voiced and voiceless stops (see Dixit 1987 for more information on this subject, and also Masica 1991 for the use of aspiration in Indo-Aryan languages). The voiced aspirated sounds are also called breathy voiced (see e.g. Ladefoged & Maddieson 1996).

A recent study has shown that voiced aspirated sounds induce both breathy voice and lowered F0 on the following vowel, especially at its beginning, so that a syllable like /dʱa/ could

be more narrowly transcribed [d<sup>h</sup>ᵛᵛ̄]. This study also found that for the speakers examined, breathy-voiced vowels occur after voiceless aspirates as well (Clements & Khatiwada 2007).

Often in spontaneous speech, the voiced aspirates lose their aspiration intervocalically and word-finally, where they are realized with looser occlusion. However, it has been noticed that some speakers keep aspiration in dentals, affricates and velars in this context. Both realizations, aspirated and unaspirated, are frequent in Nepali.

/sʌb <sup>h</sup> a/	[sʌb <sup>h</sup> ᵛᵛ̄] or [sʌβa]	‘meeting’
/sadz <sup>h</sup> a/	[sadz <sup>h</sup> ᵛᵛ̄] or [sɑḏza]	‘common’
/sad <sup>h</sup> a/	[sad <sup>h</sup> ᵛᵛ̄] or [saḏa]	‘simple’
/baɡ <sup>h</sup> /	[baɡ <sup>h</sup> ᵛᵛ̄] or [baɡ]	‘tiger’

### Fricativization

As shown in the consonant chart above, Nepali has only two contrastive fricatives, /s/ and /f/, but in spontaneous speech the voiced and voiceless aspirated labials and velars can also be realized as the corresponding homorganic fricatives.

/sʌp <sup>h</sup> a/	[sʌφa]	‘clean’
/sʌb <sup>h</sup> a/	[sʌβa]	‘meeting’
/sak <sup>h</sup> a/	[saxa]	‘branch’
/ʌɡ <sup>h</sup> ɑdʒi/	[ʌɣɑɾi]	‘before’

### Geminates

Except for the glottal fricative and the approximants, all consonants have geminate counterparts. Geminates occur only medially. The contrast between simple and geminated consonants is shown in the following list. Geminate consonants do not undergo the lenition processes described above.

/sʌman/	‘equal’	/sʌmman/	‘honour’
/tsʌla/	‘Move!’	/tsʌlla/	‘chicks’
/sʌta/	‘Disturb!’	/sʌtta/	‘authority’
/tsʌpʌl/	‘impatient’	/tsʌppʌl/	‘slipper’
/ʌḏa/	‘Stop!’	/ʌḏḏa/	‘office’
/pʌka/	‘Cook!’	/pʌkka/	‘sure, strong’

### Initial clusters

Word-initial clusters are allowed under the condition that the second consonant is a rhotic /r/ or a glide [j w]. However, the sequence of a consonant followed by a rhotic is subject to sociocultural conditioning in that educated Nepali speakers may produce clusters, whilst the majority of the population uses an epenthetic vowel.

/praḏ <sup>h</sup> an/	[praḏ <sup>h</sup> ᵛᵛ̄an] vs. [paḏ <sup>h</sup> ᵛᵛ̄an]	‘chief’
/pual/	[pwal]	‘whole’
/piadz/	[pjadz]	‘onion’

### Sonorants

Nepali has 5 sonorants – /m n ŋ l r/. In this section we will observe some characteristics of the nasals and the rhotic.

### Nasals

Though the Nepali orthographic system represents five nasals, <m n ŋ ŋ̃ ɲ>, only the first three are phonologically pertinent. Of these, the velar nasal /ŋ/ occurs only as a word-final except in some onomatopoeic words. A retroflex nasal flap realization [ɳ̠] of the retroflex nasal <ɲ> is found phonetically before homorganic consonants and in spelling pronunciations of some Sanskrit loanwords.

[nam]	‘name’
[sʌman]	‘equal’
[bʰaŋ]	‘hemp leaf’
[ŋittsʌ]	‘to be disappointed’ (onomatopoeic)
[baɽ]	‘arrow’ (Sanskrit loanword)

### Rhotics

Nepali /r/ has been described as a tap [ɾ] in intervocalic position and as a trill [r] elsewhere (Pokharel 1989). In our data, it is realized as a short (two- or three-tap) trill [r] or sometimes as a single tap [ɾ] at the beginning of the word, but as a single tap or flap when intervocalic or at the end of the word. These differences may reflect inter-speaker variation. We take the word-initial trill variant [r] as the basic variant of this phoneme, consistent with our practice elsewhere, but it should be kept in mind that the Nepali trills are weaker than Spanish or Italian trills. Geminate /r/ is fully trilled and, in this case, the trill is quite strong.

/rato/	‘red’	/tir/	‘arrow’
/tara/	‘star’	/sar/	‘move’
/tʌrro/	‘bitter’		

A retroflex flap [ɽ] also occurs as a postvocalic variant of /d/ as described above.

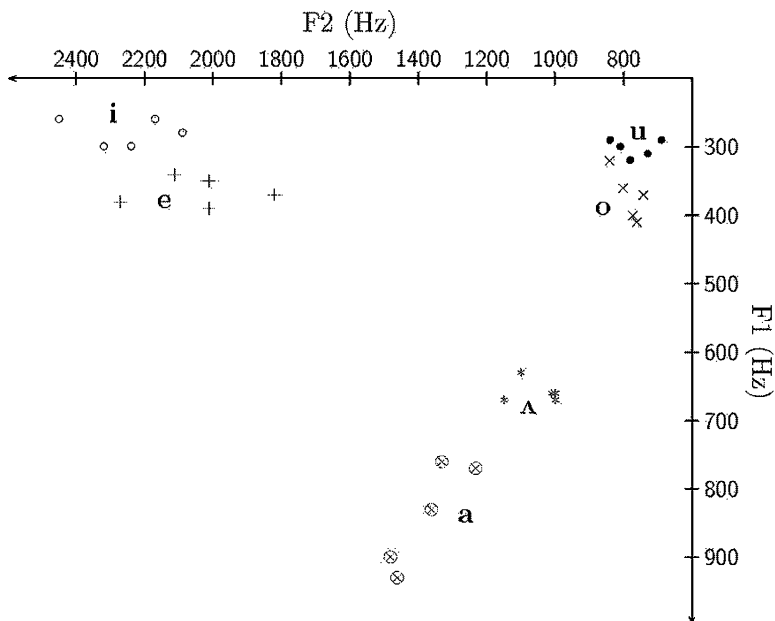
### Vowels

Nepali has eleven contrastive vowels in its sound inventory. Nasalization is distinctive in Nepali, but any vowel can become slightly nasalized in contact with a nasal.

The quadrilateral presented in figure 2 is based on isolated vowel productions by five male Nepali speakers. They grew up in a wide range of geographical areas but all belong to the same eastern dialect mentioned earlier. Nepali vowels are exemplified as follows:

i	sir	‘head’	ĩ	tĩ	‘there’
u	sur	‘mood’	ũ	fiũ	‘(I) am’
e	ser	‘lion’	ẽ	garẽ	‘(I) did’
o	sor	‘noise’			
ʌ	sar	‘Move!’	ã	ã	‘yes’ (informal)
a	sar	‘Move!’ (causative)	ã	ãp	‘mango’

/a/ is a central vowel in Nepali. The phonetic symbol [ʌ] used here replaces the so-called ‘schwa’ classically represented as [ə] (Bandhu et al. 1971, Dahal 1974). In isolation, this sound is slightly rounded, and is acoustically lower and more back than a schwa, as we can see in figure 2. As this sound varies considerably according to consonantal contexts and speaker, it presents a more complex situation for foreign speakers. It seems to vary from [ɜ/ɝ] to [ʌ/ɔ]. In this Illustration, [ʌ] is proposed as the basic norm and all others are considered phonetic variants of this phoneme.



**Figure 2** The Nepali vowel chart based on isolated vowel productions of five male speakers.

All Nepali vowels except /o/ have distinctive nasal counterparts (see the examples above). The absence of a phonological / $\delta$ / (noted by Pokharel 1989: 34) is quite striking. There is some free variation between [o] and [ $\delta$ ], as in the case of [dz<sup>h</sup>o $\delta$ k] vs. [dz<sup>h</sup>o $\delta$ k] ‘irritate’ and [fi $\delta$ tso] vs. [fi $\delta$ tso] ‘short’, but there is no phonologically distinctive contrast. Also there may be nondistinctive nasalization after nasal consonants.

Though the written form of Nepali distinguishes long and short /i/ and /u/, there is no opposition of length in the spoken language. According to Pokharel (1989, p.c. 2007), due to intervocalic /fi/ deletion, there is an emergence of vowel length in limited data; for example, in some cases of spontaneous speech, /p $\delta$ hi $\delta$ i/ ‘of mountain’ can be pronounced as [pa:ri] (< [pa:ri] < [pa $\delta$ hi:ri]), creating a clear contrast with /pa $\delta$ i/ ‘female buffalo calf’.

Almost all vowel sequences, including identical vowels, can be analysed as vowel clusters (Bandhu et al. 1971).<sup>4</sup> It is not very easy to determine in many cases whether a given sequence is monosyllabic or dissyllabic.

## Stress and pitch

Stress and pitch are non-distinctive in Nepali.

<sup>4</sup> Pokharel (1989: 37–38) recognizes ten diphthongs in Nepali. They are shown in the following list:

ui	dui	‘two’	iu	dziu	‘body’
ei	s $\delta$ nei	‘trumpet’	eu	eu $\delta$ a	‘one’
oi	poi	‘husband’	ou	d <sup>h</sup> ou	‘Wash!’
$\delta$ i	k $\delta$ ile	‘when’	$\delta$ u	dz $\delta$ u	‘barley’
ai	b <sup>h</sup> ai	‘younger brother’	au	au	‘Come!’

### Transcription of the recorded passage

In this Illustration, a relatively narrow phonetic transcription was adopted, reflecting the pronunciation used in the recording of the passage

uttari batas ɾʌ surja

dzati kʰeɾʌ uttari batas ɾʌ surje ek apasmā ko balijo bʰiʌnnē kura lieɾʌ  
 baz°detʰje tʰetixeɾʌ jeuʃa bəʃuwo tarto oɾnē oɾɟeɾʌ ajo unifiɾle ke salla:  
 gʌreβʌnē dzasle pəile tʰo bəʃuʌko oɾne kʰʌsaliɟintsʌ ufinē: balijo maninētsʰʌ  
 tʰespatsi batas bes:kʌnʌ tsʌlnʌ tʰalʰo batas dzati ɟzoɾle tsʌltʰjo bəʃuʌ tʰetinē  
 ɟzoɾle ʔaɸnʌ sʌriɾ ori:pʌri ʔoɾnē kʌstʰo juttari batasʃe bʌɾwako oɾtē usʃo  
 sʌriɾbʌɾʌ kʰʌsʌnʌ nike pʰɾjas gʌɾjo tʌɾʌ ʌntʰema kei nʌlʌgi aɸno pʰɾjas tsʰarjo  
 tʰespatsi swija tsʌmkʌnʌ tʰaljo surjeko raple gʌɾda tjo mʌntsele ʔaɸno oɾnē  
 turʌntʌ pʰiʌljo esʌri uttari batas ʔapʰu bʰiʌnda surje balijo ɾʌetsʌ bʰiʌnnē kura  
 mʌnnʌ baddʰe bʰiʌjo

### Orthographic version

उत्तरी बतास र सूर्य

जतिखेर उत्तरी बतास र सूर्य एकआपसमा को बलियो भन्ने कुरा लिएर बाऊदै थिए, त्यतिखेर एउटा बटुवा तातो ओढ्ने ओढेर आयो। उनीहरूले के सल्लाह गरे भने जसले पहिले त्यो बटुवाको ओढ्ने खसालिदिन्छ, उही नै बलियो मानिनेछ। त्यसपछि बतास बेसकन चलन थाल्यो। बतास जति जोडले चल्थ्यो, बटुवा त्यति नै जोडले आफ्नो शरीर वरिपरि ओढ्ने कस्थ्यो। उत्तरी बतासले बटुवाको ओढ्ने उस्को शरीरबाट खसाल्न निकै प्रयास गर्‍यो, तर अन्त्यमा केही नलागी आफ्नो प्रयास छाड्यो। त्यसपछि सूर्य चम्कन थाल्यो। सूर्यको रापले गर्दा त्यो मान्छेले आफ्नो ओढ्ने तुरुन्त फाल्यो। यसरी उत्तरी बतास, आफूभन्दा सूर्य बलियो रहेछ भन्ने कुरा मान्न बाध्य भयो।

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