

PROPOSING A FUNCTIONAL ORTHOGRAPHY FOR LHOWA: ISSUES, CHALLENGES AND STRATEGIES

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This paper proposes a functional and pedagogically easing orthography for Lhowa, a preliterate Tibeto-Burman language of Nepal. Both Devanagari and Tibetan Lama scripts proposed in the past, with a little understanding of phonological, cultural and pedagogical factors, have not yet been fully accepted and satisfactorily employed in writing. Holding up transformative worldview, this study has employed qualitative research design in collecting and analyzing data on major issues and challenges of orthography development and suggesting practical strategies to meet those challenges. The findings reveal a tension between maintaining the socio-cultural identity and easing educational efforts in the choice of orthography for languages like Lhowa in Nepal. Indeed, Tibetan Lama script may better support cultural identity of Lhowa than Devanagari script; however, literacy goals are more effectively achieved by adapting the latter. Such orthography is indispensable for literacy and multilingual education for the empowerment of the speech community like Lhowa in Nepal.

Keywords: Preliterate, phonological factor, voiced murmured, tone, literacy

1. Introduction

This paper attempts to propose a functional and pedagogically easing orthography for Lhowa, a preliterate language of Nepal, by considering phonological, cultural and pedagogical factors in the light of multilingual context of Nepal. Lhowa is one of the members of the Central Bodish (viz., Tibetan) of the Bodish section of the Bodic (viz., Western Tibeto-Burman) branch of the Tibeto-Burman language family (Regmi, 2021). Tournadre (2014, p. 18) has classified Lhowa as a member of South-Western section. Alternatively known as Loke (viz., *lo* meaning ‘south’ and *ke* meaning ‘language’), this language is spoken by one set of northern border ethnicity referred to as Lhowa (viz., *lho* meaning ‘south’ and *wa* meaning ‘resident’) residing along the upper Kali Gandaki River in the upper part of Mustang district in Gandaki Province of Nepal. In 2021 Census, this language has been counted in two different designations, viz., Lhopa and Lowa. As Lhopa, it is used as mother tongue by 2348 speakers whereas, as Lowa, it is spoken as mother tongue

by 624 people (NSO, 2023). Lhowa, spoken by the communities following Tibetan Buddhism, has been characterized by distinct socio-linguistic and linguistic features, most of them resulting from a long and constant contact with Nepali and other Tibeto-Burman languages. A functional and accepted orthography is indispensable for literacy and multilingual education for the empowerment of the speech community and language development itself. There have been made some preliminary attempts to determine the basic sounds and provide a set of symbols for representing them in Devanagari and Tibetan Lama scripts in writing. They include Gurung Lhowa & Gurung Lhowa (2068 BS/2011), Dhoka Lhowa et al. (2014), Lhomi & Lhomi (2010) and Regmi et al. (2023). However, none of them has conclusively justified for the scripts proposed for Lhowa for literacy and multilingual education for the empowerment of the speech community. However, proposing such orthography for Lhowa is not an easy job in the present context of Nepal. It requires, first and foremost, identifying the

basic sounds and analyzing them systematically. Secondly, it demands considerations of cultural identity and literacy goals. Robinson & Gadeli (2003) regard orthography as a linguistic as well as a social reality. A preliterate language like Lhowa has three scripts choices: Roman, Tibetan and Devanagari. However, such choosing is a serious decision making/multifaceted job. There are a few works dealing with issues and challenges of orthography for unwritten languages. They include Hari (2000), Chamberlain (2001), Glover (2002), Noonan (2005), Regmi (2011) and Anderson and Evans (2024). However, a functional and pedagogically suitable orthography has to be proposed for an unwritten language like Lhowa.

This paper is organized into seven sections. Section 1 has provides a background for the study. Section 2 presents the methodology used in the study whereas in Section 3 we look at the major factors to be considered while proposing orthography for Lhowa. Section 4 explores the issues and challenges of current adaptations of Tibetan Lama and Devanagari scripts in Lhowa. In Section 5, we suggest strategies for addressing the challenges for representing the basic sounds in Lhowa. Section 6 examines the rationales for adapting Devanagari scripts for a preliterate language like Lhowa. Section 7 presents a summary of the paper with a conclusion.

2. Methodology

This paper, holding up the philosophical assumptions of transformative worldview, has employed qualitative research design to collect and analyze the data on major issues and challenges of orthography and suggest strategies for addressing those challenges and explain the rationale for adapting Devanagari Scripts for Lhowa. It has used both primary and secondary data. The primary data were elicited from Jamyang Gelek Lhowa (from Ghiling) and Mr. Tamding Gurung (from Lo Manthang), the native speakers of Lhowa, during 2020-2021. The secondary data were gleaned from Lhomi and Lhomi (2010), Gurung Lhowa and Gurung Lhowa (2068/2011), Dhoka Lhowa et al. (2014) and Lhowa (Gurung) & Lhomi (2015). Some published materials in Devanagari scripts have

also been taken as secondary sources of data. While analyzing the data, basic insights from Robinson & Gadeli (2003) have been taken into consideration. This paper focuses on addressing three research questions.

- (a) What are the major considering issues for proposing a functional orthography and present practices of orthography in Lhowa?
- (b) How are the issues and challenges of present practices of orthographies addressed in Lhowa?
- (c) Why is a more functional and supporting orthography (viz., Devanagari-based) for literacy required for a preliterate language like Lhowa in Nepal?

3. Major considering factors

Robinson & Gadeli (2003) provides a framework for proposing orthography for unwritten languages like Lhowa. It beautifully indicates the processes including analyzing the identified phonemes, developing a set of symbols to represent them, and considering cultural and practical factors to create a functional and accepted writing system. Pittayaporn and Choemprayong (2024), based on Robinson & Gadeli (2003) has sketched the framework consisting of factors (viz., social relations, political context, cultural heritage and language structure), processes and outcome. Figure 1 presents the framework for developing orthography for unwritten languages sketched in Pittayaporn and Choemprayong (2024).

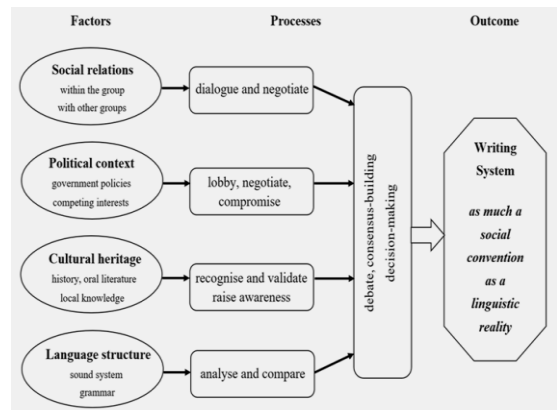


Figure 1: Framework for developing orthography for unwritten languages

Following the framework in Figure 1, some specific phonological, socio-cultural, sociolinguistic features of Lhowa as well as the government policy of education in mother tongue and protection of scripts have to be honestly considered while proposing an orthography (i.e., a system of symbols to represent the basic sounds) in Lhowa. They are briefly discussed as follows:

3.1 Phonological features

Lhowa exhibits distinct phonological features, viz., specific vowels and consonant sounds, syllable structure and tone. The orthography should accurately capture all these features in Lhowa.

3.1.1 Phonemic inventory

Lhowa exhibits a large inventory of 50 segmental consonant and 12 vowel phonemes. Lhowa has alveo-palatal plosives, nasals, affricates and fricatives. It has also voiceless murmured lateral. The vowels present a contrast in length and there exist /y/(high-front rounded) and /ø/ (mid-front rounded) vowels (Bhote Lama, 2021; Regmi & Regmi, 2024). Table 1 presents a phonemic inventory of consonant and vowel phonemes in Lhowa (Regmi et al., 2023).

Table 1: Phonemic inventory of consonant and vowel phonemes in Lhowa

Consonants

p	t	t̪	c	k	
ph	th	t̪h	ch	kh	
b	d	d̪	ɟ	g	
pʰ	tʰ	t̪ʰ		kʰ	
m	n		ɲ	ŋ	
mʱ	nʱ		ɲʱ	ŋʱ	
	ts		tɕ		
	tsh		tɕh		
	dz		dʑ		
	tsʰ		tɕʰ		
	s	ʃ	ɕ		h
	sʰ		ɕʰ		ʰ
	r				

	rʰ				
	l				
	lʰ				
	l̪ʰ				
w			j		
			jʰ		

Vowels

i	i:	y		u	u:
e	e:	ø		o	o:
		a	a:		

3.1.2 Syllable structure

Lhowa is characterized with a distinct syllable structure formalized as (C_i) V (C_f) with an obligatory vowel nucleus and other optional constituents (C_i, initial consonant) and (C_f, final consonant). Lhowa admits only four types of syllable patterns, viz., V, VC, CV, CVC. The proposed orthography is highly expected to have effectively represented these patterns in Lhowa.

3.1.3 Tones

Lhowa, like Lhasa Tibetan (DeLancey, 2003, p. 272), exhibits a word-level tone system distinguishing high vs. low tone only on the first syllable of a word to distinguish lexical meaning. In Lhowa, high vs. low tone is highly predictable. As rule of thumb, for instance, a low tone is expected for the words beginning with the murmured and voiceless lateral phonemes (See Regmi et al., 2023, p. 21 for details). The compound words show specific tone melodies (like HH, LH, LL, HL). The orthography needs to incorporate a method for marking all of these tonal features in Lhowa.

3.2 Socio-cultural features

Lhowa, which follows Tibetan Buddhism, is an underprivileged ethnic community in Nepal. This community is, indeed, closely related to Lhasa Tibetan. Bista (2004:212) presents a social hierarchy of Kutak (highest class), Shelva (middle class) and Righin (common). The community depends on agriculture (viz., farming and animal husbandry) for livelihoods. For centuries, they were the middlemen between peoples of the Tibetan plateau and the lowlands (Japola et al., 2003). Seasonal migration to low lands, especially

in winter season, has fostered a number of contact induced changes in the phonology and grammar of Lhowa. The cultural life is primarily guided by the basic principles of Tibetan Buddhism documented in Sambhota scripts. Of two sects, viz., the Kargyupa and the Sakyapa, the community dominantly follows the Sakyapa. The rites and rituals from birth to death are performed by Lamas. In the local monasteries, monks and nuns are taught the scriptures maintained in Sambhota scripts. These features which reflect the social reality and identity must be satisfactorily considered for social consensus while proposing orthography in Lhowa.

3.3 Sociolinguistic features

Lhowa has been categorized as 6a (Vigorous) in Epele et al. (2012). It means that this language is used orally by all generations in most of the general domains of language use at home and community and is being learnt by children as their first language. A vast majority of the people are highly proficient in the use of language in oral form. It is true that this language as it is spoken has not yet been used in written form throughout the community. In the local monasteries, monks and nuns are taught the scriptures maintained in standard Sambhota scripts. The speech community has a dream of implementing mother tongue education at the primary school level so that the knowledge essential to their lives may be best imparted to youth (Regmi et al., 2017; Regmi, 2021). Lhowa has somewhat diverged into social or geographical dialects. However, there exists mutual intelligibility among the forms of speech spoken in different points to a great extent (Regmi et al., 2017; Regmi, 2021, p., 16). Moreover, due to the long and constant contact with Nepali, an Indo-Aryan language and Thakali, a Tibeto-Burman language, Lhowa has innovated a number of phonological and grammatical features deviated from the ancestral language, viz., Lhasa Tibetan (Regmi et al., 2023). Innovated grammatical features are visible even in the simplex verbal morphology and versatile use of nominalization in Lhowa.

3.4 Government policy

A formal multilingual language policy has not yet been framed in Nepal. However, some

fundamental aspects of language policy documented in the constitution are incongruently reflected in framing laws for operating local bodies and education policy. Despite the fact that all the languages spoken as mother tongues are constitutionally the languages of the nations and all communities are allowed to provide the basic education in their mother tongue, promote language and develop scripts, outcomes are disappointing due to the lack of regulatory frameworks. There are some provisions to motivate local and provincial government may frame policy for helping the speech communities to make a choice of a suitable orthography which is crucial for creating literacy programs. Such policy does not only promote teaching and learning, it helps to reverse language shift and revitalize endangered languages in Nepal. Some local governments have been reported supporting the community to develop a new orthographical system in Nepal. Besides, there have been some arguments for interoperable orthographies that benefit different language communities (Regmi, 2008). In Nepal, Language Commission is constituted to support the governments to guide orthographic standards and manage language diversity within a country. Due to a strong societal preference for Nepali English, the local governments are not focused on framing policies for orthography development compatible with preservation policies as articulated in the constitution.

4. Issues and challenges of current adaptations

With a view to uplifting from Level 6a (Vigorous) to 5 (Developing), in the process of attaining sustainable literacy, some attempts have been made to introduce written functions by employing some specific activities/strategies compatible with the socio-cultural settings of the speech community.

Till the date, two programs have been carried on, viz., developing writing system and primers and socializing language through local literature. Thus, with the consent of the community, a practical writing guide in Devanagiri script has been developed along with primers for the acquisition of literacy (Lowa Gurung & Lowa Gurung, 2011). The local teachers have been

trained for literacy classes. In collaboration with the language experts and the community members, the people have been encouraged to start writing in their mother tongues. The local literature consisting of old proverbs and traditional stories have been collected and recorded in written forms in Lhowa (Regmi et al., 2023, pp. 199-200)

Along with Devanagari Script, regarding the socio-cultural heritage of the speech community, Tibetan Lama Script referred to as U-chän script was proposed more than a decade ago for Lhowa. This script has been predicted as a better choice than the adapted Devanagari script arguing that this scripts has been used for centuries in teaching traditional Buddhist scriptures in the monasteries in the entire Himalayan region in Nepal.

However, neither Tibetan Lama Scripts nor Devanagari Scripts adapted for the basic sounds identified in Lhomi and Lhomi (2010), Gurung Lhowa and Gurung Lhowa (2068BS/2011) and Dhoka Lhowa et al. (2014) have adequately represented all the basic sounds of the language. Moreover, the basic sounds have not been adequately identified. Some phonological features like length and tones cannot be fully accommodated by conventional symbols of Tibetan Lama script. The Lhowa community has also proposed simplified Sambhota and Himalayan Devanagari script (See Annex 1). There are some issues and challenges which required to be addressed with strategies framed based on linguistic and sociolinguistic reality.

4.1 Tibetan Lama script

Tibetan Lama Script has been slightly adapted to accommodate the phonological features of Lhowa (Dhoka Lhowa et al., 2014).

4.1.1 Accommodation of vowels

Regarding primacy of speech, the seven vowels as identified in Dhoka Lhowa et al. (2014) have been accommodated in Tibetan Lama script (TLS). Table 2 presents the accommodation of seven vowels in Tibetan Lama script with examples in phonemic transcription.

Table 2: Accommodation of seven vowels in Tibetan Lama script

	TLS	Phonemic trans	TLS
/a/	ཨ	/ale/ 'money'	ཨ་ལ་
/i/	ཨི	/ibi/ 'grandmother'	ཨི་བུ་
/y/	ཨིལ	/yŋa/ 'hair'	ཨིལ་གྱ་
/u/	ཨུ	/utu/ 'umbrella'	ཨུ་ཏུ་
/e/	ཨེ	/erma/ 'type of spice'	ཨེ་ར་མ་
/o/	ཨོ	/odok/ 'necklace'	ཨོ་དོག་
/ø/	ཨོལ	/tshø/ 'colour'	ཨོལ་

Though the seven vowels are represented by using conventional and non-conventional symbols, Tibetan Lama Script has to be fully revised to accommodate some specific phonological features in Lhowa.

- There are not any conventional symbols to represent length counterparts of the original five vowels, viz., *a*, *i*, *e*, *o* and *u* of Lhowa in terms of length in Tibetan Lama Script.
- There are not any dedicated symbols for representing high and low tone in Tibetan Lama Script.

4.1.2 Accommodation of consonants

Dhoka Lhowa et al. (2014) has identified forty-four consonants. They have been accommodated in conventional graphemes or alphabets of Tibetan Lama script. Table 3 presents the accommodation of consonants in Tibetan Lama script.

Table 3: Accommodation of consonants in Tibetan Lama script

	DS	TL S	Phonemic trans	TLS
/k/	ཀ	ཀ	/ka/ 'command'	ཀ
/kh/	ཁ	ཁ	/kha/ 'mouth'	ཁ
/g/	ག	ག	/go/ 'head'	ག
/kʰ/	ཁ	ཀ	/kʰur/ 'tent'	ཀུར་
/ŋ/	ང	ང	/ŋo/ 'vegetables'	ངོ
/ŋʰ/	ཅ	ང	/ŋʰima/ 'sun'	ཇིམ་
/c/	ཅ	ཀ	/ca/ 'wall'	ཀ
/ch/	ཅ	ཅ	/chakwa/ 'cold'	ཅལ་
/j/	ཇ	ཅ	/jakwa/ 'strong'	ཅཱལ་
/ts/	ཅ	ཅ	/tsa/ 'grass'	ཅ

/tsh/	ཅ	ཅ	/tsha/ 'salt'	ཅ
/dz/	ཇ	ཇ	/dzu/ 'finger'	ཇ
/tsfi/	ཇ	ཇ	/tsha/ 'rock'	ཇ
/te/	ཅ	ཅ	/teak/ 'iron'	ཅ
/teh/	ཅ	ཅ	/tehakku/ 'bag'	ཅ
/t/	ཅ	ཅ	/tip/ 'monkey'	ཅ
/th/	ཅ	ཅ	/tha/ 'eagle'	ཅ
/d/	ཅ	ཅ	/di/ 'female yak'	ཅ
/tʃi/	ཅ	ཅ	/tʃa/ 'enemy'	ཅ
/t/	ཅ	ཅ	/ta/ 'horse'	ཅ
/th/	ཅ	ཅ	/tha:/ 'loom'	ཅ
/d/	ཅ	ཅ	/da/ 'bow'	ཅ
/tʃi/	ཅ	ཅ	/tʃigu/ 'basket'	ཅ
/n/	ཅ	ཅ	/nam/ 'sky'	ཅ
/nʃi/	ཅ	ཅ	/nʃiedzo/ 'parrot'	ཅ
/p/	ཅ	ཅ	/pa/ 'curry'	ཅ
/ph/	ཅ	ཅ	/phak/ 'pig'	ཅ
/b/	ཅ	ཅ	/ba/ 'confidence'	ཅ
/pʃi/	ཅ	ཅ	/pʃi/ 'calf'	ཅ
/m/	ཅ	ཅ	/ma/ 'wound'	ཅ
/mʃi/	ཅ	ཅ	/mʃia/ 'ghee'	ཅ
/j/	ཅ	ཅ	/ja/ 'rust'	ཅ
/r/	ཅ	ཅ	/ra/ 'goat'	ཅ
/rʃi/	ཅ	ཅ	/rʃan/ 'honey'	ཅ
/l/	ཅ	ཅ	/la/ 'wages'	ཅ
/lʃi/	ཅ	ཅ	/lʃok/ 'bulb'	ཅ
/lʃi/	ཅ	ཅ	/lʃa/ 'god'	ཅ
/w/	ཅ	ཅ	/wan/ 'blessing'	ཅ
/s/	ཅ	ཅ	/sa/ 'land'	ཅ
/ʃ/	ཅ	ཅ	/ʃomba/ 'shoes'	ཅ
/e/	ཅ	ཅ	/ea/ 'meat'	ཅ
/sʃi/	ཅ	ཅ	/sʃa/ 'nettle'	ཅ
/h/	ཅ	ཅ	/hup/ 'cup'	ཅ
/ʃi/	ཅ	ཅ	/ʃaba/ 'rice'	ཅ

Table 3 shows that 44 consonants are superbly accommodated in Tibetan Lama Script. However, a number of modifications have to be made in the use of alphabets or radicals of Tibetan Lama script to accommodate six more sounds recently identified, viz., palatal nasals (ɲ, ɲʰ), palatal affricates (dz, tʃi), murmured palatal

approximant (jʃi) and post-alveolar fricatives (ʃ). Such sounds are left to be accommodated in Tibetan Lama script. They can be represented in Tibetan Lama script.

4.2 Devanagari scripts

There is always a pressure between maintaining the writing of preliterate language in adapted Devanagari scripts and asserting the identity with distinctive indigenous writing system culturally preferable. However, with a view to overcoming practical challenges, Devanagari scripts have been proposed for unwritten languages (Noonan, 2005). In Nepal, bilingualism (in mother tongue and Nepali) is a common phenomenon. It directly or indirectly motivate literate bilingual to propose Devanagari for the mother tongue. In the Lhowa community, with a view to promoting literacy and basic education in the mother tongue, despite the loyalty towards Tibetan Lama Scripts, Devanagari Scripts have been adapted to accommodate basic sounds for writing. Devanagari scripts have been massively, but inconsistently, used in producing some social literature (viz., folk tales, proverbs, songs, etc.), literacy materials and a tri-lingual dictionary (Lhowa-Nepali-English dictionary).

4.2.1 Accommodation of vowels

There are eight oral vowels introduced in Lhomi and Lhomi (2010) and Gurung Lhowa and Gurung Lhowa (2011). Some of them have been accommodated in Devanagari script in some unconventional ways. Table 4 presents the accommodation of eight Lhowa vowels in Devanagari script.

Table 4: Accommodation of eight Lhowa vowels in Devanagari script

	DS	Phonemic transcription	DS
/a/	/आ/	/ale/ 'money'	आले
/i/	/ई/	/ibi/ 'grandmother'	ईबी
/y/	/ई/	/yʃa/ 'hair'	ईटा
/u/	/उ/	/utu/ 'umbrella'	उतु
/e/	/ए/	/erma/ 'type of spice'	एर्मा
/o/	/ओ/	/odok/ 'necklace'	ओदोक्
/ø/	/ओ/	/tshø/ 'colour'	छो

/a:/	/आ:/	/a:/ 'bad'	आ:
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Table 4 shows that the high-front rounded vowel transcribed as /y/ and mid-front rounded vowel /ø/ are accommodated with the unconventional Devanagari characters as /ई/ and /ओ/, respectively. These characters have been modified by placing Devanagari sign referred to as Nukta. The long low-back vowel /a:/ has been represented by using Devanagari character *visarga*.

However, in Devanagari scripts, there are not any conventional graphemes to represent the high-front rounded vowel transcribed as /y/ and mid-front rounded vowel /ø/ in Lhowa. Similarly, the high and low tones are not easily represented in Devanagari script. The long low-back vowel /a:/ and mid-back vowel /o:/ are difficult to be accommodated in Devanagari script.

4.2.2 Accommodation of consonants

Gurung Lhowa and Gurung Lhowa (2011) has identified thirty-eight consonants whereas Lhomi and Lhomi (2010) has introduced thirty-seven consonants in Lhowa. Dhoka Lhowa et al.(2014) has identified forty-four consonants. They may be represented in conventional graphemes or alphabets of Devanagari script in Lhowa. Table 5 presents the accommodation of forty-four Lhowa consonants in Devanagari script.

Table 5: Accommodation of forty-four Lhowa consonants in Devanagari script

	DS	Phonemic transcription	DS
/k/	क	/ka/ 'command'	का
/kh/	ख	/kha/ 'mouth'	खा
/g/	ग	/go/ 'head'	गो
/kfi/	घ	/kfiur/ 'tent'	घुर
/ŋ/	ङ	/ŋo/ 'green vegetables'	ङो
/ŋfi/	ड	/ŋfiima/ 'sun'	डो
/c/	क्य	/ca/ 'wall'	क्या
/ch/	ख्य	/chakwa/ 'cold'	ख्याक्वा
/ʒ/	रय	/ʒakwa/ 'strong'	रयाक्वा
/ts/	च	/tsa/ 'grass'	चा
/tsh/	छ	/tsha/ 'salt'	छा
/dz/	ज	/dzu/ 'finger'	जु

/tsfi/	झ	/tsfia/ 'rock'	झा
/te/	च्य	/teak/ 'iron'	च्याक्
/tch/	क्ष	/tehawa/ 'rainfall'	क्षावा
/t/	ट	/tip/ 'monkey'	टिप
/th/	ठ	/tha/ 'eagle'	ठा
/d/	ड	/di/ 'female yak'	डि
/tʃi/	ढ	/tʃia/ 'enemy'	ढा
/t/	त	/ta/ 'horse'	ता
/th/	थ	/tha:/ 'loom'	था:
/d/	द	/da/ 'bow'	दा
/tʃi/	ध	/tʃigu/ 'basket'	धि
/n/	न	/nam/ 'sky'	नाम
/nfi/	न	/nfiendo/ 'parrot'	नहेजो
/p/	प	/pau/ 'skin'	पाउ
/ph/	फ	/phak/ 'pig'	फाक
/b/	ब	/ba/ 'confidence'	बा
/pfi/	भ	/pfia:/ 'wool'	भा:
/m/	म	/ma/ 'wound'	मा
/mfi/	म	/mfia/ 'ghee'	म्हा
/j/	य	/ja/ 'rust'	या
/r/	र	/rema/ 'peas'	रेमा
/rfi/	रह	/rfia/ 'goat'	रहा
/l/	ल	/la/ 'wages'	ला
/lfi/	ल	/lfi/ 'uphill'	ल्हा
/lfi/	ल्ह	/lfi/ 'god'	ल्हा
/w/	व	/warj/ 'blessing'	वाड
/s/	स	/sa/ 'land'	सा
/ɕ/	स्य	/ɕa/ 'meat'	स्या
/sfi/	स्ह	/sfia/ 'nettle'	स्हा
/ɕfi/	स्ह्य	/ɕfia/ 'moisture'	स्ह्या
/h/	ह	/hup/ 'cup'	हुप्
/fi/	ह	/fiaba/ 'rice'	हाबा

Table 5 shows that many of the sounds have been accommodated in the unconventional graphemes or alphabets of Devanagari script in Lhowa. Moreover, high tone is indicated by a dot before the characters in Lhowa.

5. Strategies for addressing challenges

In Section 4, we have clearly stated that there have to be followed some specific strategies to

address the problems of current adaptations as well as the problems of recently identified basic sounds in Lhowa. Such strategies are discussed under two broad headings, viz. Tibetan Lama script and Devanagari script.

5.1 Tibetan Lama script

5.1.1 Strategies for accommodating long vowels

The long vowels may be represented in Tibetan Lama Scripts by using Devanagari character *visarga*. This is one of the strategies to be applied in the bilingual context of Lhowa. Table 6 presents the accommodation of long vowels in Tibetan Lama Script.

Table 6: Accommodation of long vowels in Tibetan Lama script

	TLS	Phonemic transcription	TLS
/a/	ཨ	/ale/ 'money'	ཨ་ལ་
/a:/	ཨ:	/ka:/ 'beautiful'	ཀ:
/i/	ཨི	/ibi/ 'grandmother'	ཨི་པ་
/i:/	ཨི:	/tsi:/ 'account'	ཨི:
/y/	ཨིལ་	/yɿ/ 'hair'	ཨིལ་ལྷ་
/u/	ཨུ	/utu/ 'umbrella'	ཨུ་ཏུ་
/u:/	ཨུ:	/lfu:/ 'water field'	ལུ:
/e/	ཨེ	/erma/ 'type of spice'	ཨེ་ར་མ་
/e:/	ཨེ:	/dɛ:/ 'rice'	དེ:
/o/	ཨོ	/odok/ 'necklace'	ཨོ་དོག་
/o:/	ཨོ:	/tso:/ 'search'	ཆོ:
/ø/	ཨོལ་	/tshø/ 'colour'	ཆོལ་ས་

It is to be noted that the long mid-back vowel has not been represented in Tibetan Lama Script in Dhoka Lhowa et al. (2014, pp.1-4).

5.1.2 Strategies for accommodating new six consonants

The new six sounds recently identified, viz., palatal nasals (ɲ, ɲh), palatal affricates (dz, tɕh), murmured palatal approximant (jɰ) and post-alveolar fricatives (ʂ) may be accommodated by making modifications in the use of alphabets or radicals of Tibetan Lama Script. Table 7 presents the accommodation of fifty Lhowa consonants including six new sounds in Tibetan Lama script.

Table 7: Accommodation of fifty Lhowa consonants in Tibetan Lama script

	DS	TLS	Phonemic transcription	TLS
/k/	ཀ	ཀ	/ka/ 'command'	ཀ
/kh/	ཁ	ཁ	/kha/ 'mouth'	ཁ
/g/	ག	ག	/go/ 'head'	ག
/kɰ/	ཁ/ཀ	ག	/kɰur/ 'tent'	གུར
/ŋ/	ཅ/ཇ	ང	/ŋo/ 'vegetables'	ཇ
/ŋh/	ཅ/ཇ	ང	/ŋhima/ 'sun'	ཇིམ་
/c/	ཅ	ཀ	/ca/ 'wall'	ཀ
/ch/	ཅ	ཅ	/chakwa/ 'cold'	ཅལ་
/j/	ཇ	ཅ	/jakwa/ 'strong'	ཅལ་པ་
/ɲ/	ཇ	ཇ	/ɲa/ 'upstairs'	ཇ
ɲh/	ཇ	ཇ	/ɲha/ 'fish'	ཇ
/ts/	ཅ	ཅ	/tsa/ 'grass'	ཅ
/tsh/	ཅ	ཅ	/tsha/ 'salt'	ཅ
/dz/	ཅ	ཅ	/dzu/ 'finger'	ཅ
/tɕh/	ཅ	ཅ	/tsha/ 'rock'	ཅ
/te/	ཅ	ཅ	/teak/ 'iron'	ཅལ་
/teh/	ཅ	ཅ	/tehakku/ 'bag'	ཅལ་ཁུ་
/dz /	ཅ	ཅ	/dze/ 'cow dung'	ཅ
/tɕh/	ཅ	ཅ	/tɕhabu/ 'feather'	ཅལ་པུ་
/t/	ཅ	ཅ	/tip/ 'monkey'	ཅིཔ་
/tʰ/	ཅ	ཅ	/tʰa/ 'eagle'	ཅ
/q/	ཅ	ཅ	/qi/ 'female yak'	ཅིཔ་
/tʃi/	ཅ	ཅ	/tʃia/ 'enemy'	ཅ
/t/	ཅ	ཅ	/ta/ 'horse'	ཅ
/th/	ཅ	ཅ	/tha/ 'loom'	ཅ
/d/	ཅ	ཅ	/da/ 'bow'	ཅ
/tʃi/	ཅ	ཅ	/tʃigu/ 'basket'	ཅིཁུ་
/n/	ཅ	ཅ	/nam/ 'sky'	ཅལ་
/nh/	ཅ	ཅ	/nhedzo/ 'parrot'	ཅལ་ཇོ་
/p/	ཅ	ཅ	/pa/ 'curry'	ཅ
/ph/	ཅ	ཅ	/phak/ 'pig'	ཅལ་
/b/	ཅ	ཅ	/ba/ 'confidence'	ཅ
/pʰi/	ཅ	ཅ	/pʰi/ 'calf'	ཅ
/m/	ཅ	ཅ	/ma/ 'wound'	ཅ
/mʰi/	ཅ	ཅ	/mʰia/ 'ghee'	ཅ
/j/	ཅ	ཅ	/ja/ 'rust'	ཅ

/jfi/	यह	झ	/jfiɳa/ 'light'	झ 'ल'
/r/	र/र	र	/ra/ 'goat'	र'अ'
/rfi/	र/रह	इ	/rfia/ 'honey'	इर
/l/	ल/ल	ल	/la/ 'wages'	ल
/lfi/	ल/लह	झ	/lok/ 'bulb'	झल
/lfi/	लह	झ	/lfi/ 'god'	झ
/w/	व	झ	/waŋ/ 'blessing'	दरव
/s/	स	ल	/sa/ 'land'	ल
/ʒ/	ष	व	/ʒomba/ 'shoes'	झष'ल'
/e/	स्य	ल	/ea/ 'meat'	ल
/sfi/	श्य	व	/sfi/ 'nettle'	व
/ɕfi/	स्था	व	/ɕfi/ 'moisture'	व
/h/	ह/ह	इ	/hup/ 'cup'	हुप
/fi/	ह	ल	/fiaba/ 'rice'	ल'ल'

5.2 Devanagari script

5.2.1 Strategies for accommodating vowels

Unlike in Tibetan Lama script, there are conventional graphemes to represent the long vowels in Devanagari script. However, in Devanagari script, there are not any conventional graphemes to represent the high-front rounded vowel transcribed as /y/ and mid-front rounded vowel /ø/ in Lhowa. Similarly, high and low tones are not easily represented in Devanagari script. The long low-back vowel /a:/ and mid-back vowel /o:/ are difficult to be accommodated in Devanagari script. The high-front rounded and mid-front rounded vowels may be represented by /यि/ and /ओ/, respectively. The long vowels may be represented by placing *visarga* after the character. Table 8 presents the accommodation of twelve vowels in Devanagari script.

Table 8: Accommodation of twelve Lhowa vowels in Devanagari script

	DS	Phonemic transcription	DS
/a/	/आ/	/aŋ/ 'power'	आइ
/a:/	/आ:/	/ka:/ 'command'	काः
/i/	/इ/	/idzi/ 'elder sister'	इजि
/i:/	/ई/	/tsi:/ 'account'	ची
/y/	/यि/	/yɳa/ 'hair'	यिटा
/u/	/उ/	/u/ 'uncle'	उ

/u:/	/ऊ/	/lfu:/ 'water field'	लू
/e/	/ए/	/enla/ 'in front of'	एन्ला
/e:/	/ए:/	/de:/ 'rice'	डेः
/o/	/ओ/	/tsho/ 'lake'	छो
/o:/	/ओ:/	/tso:/ 'search'	छोः
/ø/	/ओ/	/tshø/ 'colour'	छो

5.2.2 Strategies for accommodating vowels

In Devanagari script, there are not any conventional graphemes to represent murmured, palatal and voiceless lateral sounds. They have to be unconventionally accommodated in Devanagari script. With a view to maintaining consistency and phonological reality, the murmured consonants can be written with the character <ह> where necessary and high tone may be left unmarked. In other words, high tone is represented by the conventional graphemes. Similarly, murmured fricative glottal sound may be represented by placing a dot under the character. The palatal sounds may be represented as the consonant cluster of velar and palatal approximant. Devanagari script has already a character for the palatal affricate. Table 9 presents the accommodation of fifty Lhowa consonants in Devanagari script.

Table 9: Accommodation of fifty Lhowa consonants in Devanagari script

	DS	Phonemic transcription	DS
/k/	क	/ka/ 'command'	का
/kh/	ख	/kha/ 'mouth'	खा
/g/	ग	/go/ 'head'	गो
/kfi/	कह	/kfiur/ 'tent'	कहुर
/ŋ/	ङ	/ŋo/ 'vegetables'	ङो
/ŋfi/	ङह	/ŋfiima/ 'sun'	ङहो
/c/	क्य	/ca/ 'wall'	क्या
/ch/	छ्य	/chakwa/ 'cold'	छ्याक्वा
/j/	ग्य	/jakwa/ 'strong'	ग्याक्वा
/ɲ/	ज	/ɲa/ 'upstairs'	ज
/ɲfi/	जह	/ɲfi/ 'fish'	जहा
/ts/	च	/tsa/ 'grass'	चा
/tsh/	छ	/tsha/ 'salt'	छा

/dz/	ज	/dzu/ 'finger'	जु
/tsh/	चह	/tsha/ 'rock'	च्हा
/tc/	च्य	/teak/ 'iron'	च्याक्
/teh/	क्ष	/tehawa/ 'rainfall'	क्षावा
/dz/	ज्य	/dze/ 'cow dung'	ज्ये
/tʃi/	च्ह	/tʃiabu/ 'feather'	च्हाबु
/t/	ट	/tip/ 'monkey'	टिप्
/tʰ/	ठ	/tʰa/ 'eagle'	ठा
/q/	ड	/qi/ 'female yak'	डि
/tʃi/	दह	/tʃi/ 'enemy'	दहा
/t/	त	/ta/ 'horse'	ता
/th/	थ	/tha:/ 'loom'	थाः
/d/	द	/da/ 'bow'	दा
/tʃi/	तह	/tʃigu/ 'basket'	तहिगु
/n/	न	/nam/ 'sky'	नाम्
/nʃi/	न्ह	/nʃiedzo/ 'parrot'	न्हैजो
/p/	प	/pau/ 'skin'	पाउ
/ph/	फ	/phak/ 'pig'	फाक्
/b/	ब	/ba/ 'confidence'	बा
/pʃi/	प्ह	/pʃia:/ 'wool'	प्हाः
/m/	म	/ma/ 'wound'	मा
/mʃi/	म्ह	/mʃia/ 'ghee'	म्हा
/j/	य	/ja/ 'rust'	या
/jʃi/	य्ह	/jʃanja/ 'light'	यहाडा
/r/	र	/rema/ 'peas'	रेमा
/rʃi/	रह	/rʃia/ 'goat'	रहा
/l/	ल	/la/ 'wages'	ला
/lʃi/	ल्हा	/lʃia/ 'uphill'	ल्हा
/lʃi/	ल्ह	/lʃia/ 'god'	ल्हा
/w/	व	/wan/ 'blessing'	वाङ्
/s/	स	/sa/ 'land'	सा
/ʒ/	ष	/ʒa/ 'solid'	षा
/c/	स्य	/ca/ 'meat'	स्या
/ʃi/	सह	/ʃia/ 'nettle'	सहा
/cʃi/	सह्य	/cʃia/ 'moisture'	सह्या
/h/	ह	/hup/ 'cup'	हुप्
/ʃi/	ह	/ʃiba/ 'rice'	हाबा

6. Rationale for adapting Devanagari scripts

There is always a pressure between maintaining the socio-cultural identity and easing educational

efforts in the choice of orthography for languages like Lhowa in Nepal. There are indigenous scripts developed for some languages like Tamang, Gurung, Magar Dhut, Newar, Maithili, Limbu and Lapcha. However, they are mainly written in Devanagari Scripts. Some languages like Chepang, Bhujel, Tharu, Bhojpuri, Thakali, Rajbanshi, Awadhi and Dotyali are written in Devanagari. However, in the present socio-political context of Nepal, it is not easy to find consensus/common voice regarding script choice. Noonan (2005) notes Devanagari script has been remarkably adapted for Tibeto-Burman languages to overcome practical challenges.

Considering the socio-cultural factors, Tibetan Lama script, no doubt, is a suitable orthography. However, a few literate people who had opportunity to go to the local monasteries for study are acquainted with this script. In reality, a dominant number of people are literate in Nepali written in Devanagari scripts. Besides, in Tibetan Lama script, there are not any conventional graphemes to represent the long vowels and tones as identified in the language as it is spoken today. Again, there are not enough conventional symbols in Tibetan Lama Scripts to accommodate all the basic sounds in Lhowa. Unconventional symbols have to be devised for adapting the sounds which cannot be accommodated by conventional symbols. In other words, phonological features of Lhowa have been more practically accommodated by conventional symbols in Devanagari Script. Regarding socio-cultural factor may not always be rewarding for promoting literacy and adding in educational efforts in Nepal. Materials in Tamang, produced by Curriculum Development Center, for instance, prepared in Sambhota, have not been actively used in the basic education. There are additional reasons for adapting Devanagari Scripts for a preliterate language like Lhowa in Nepal. They are presented as follows:

- The adaptation of Devanagari scripts for Lhowa promotes national identity and instrumental positive attitude towards the mother tongue.
- Unique phonetic characteristics expected in the detail study of the language may flexibly be represented in Devanagari scripts.

- (c) The materials maintained in Devanagari script will receive a significant number of readers proficient in Nepali.
- (d) Devanagari script is more technology friendly than Tibetan Lama Scripts. It is highly adaptable to new media.
- (e) The design of the symbols in Devanagari reflects the relationship between forms and sounds. It is a practical and adaptable script for the unwritten Tibeto-Burman languages of Nepal.
- (f) The students with a little effort will start writing Lhowa in Devanagari script as they have to compulsorily study the textbooks prepared in Devanagari script.

7. Conclusion

This paper has examined the major guiding factors for the choice of orthography and explored the issues and challenges faced by the present adaptations of phonological features of Lhowa in Tibetan Lama and Devanagari Scripts and suggested some strategies for addressing those issues and challenges. Besides, functional and supporting orthography based on Devanagari system for literacy and multilingual education has been preferred for a preliterate language like Lhowa. The major factors that guide the community in choosing a functional orthography may include phonological, socio-cultural, sociolinguistic and governmental policy. Looking at socio-cultural reality of the Lhowa speech community, Tibetan Lama script has been put into practice in writing. However, this script does not any have conventional symbols for representing high and low tone as well the long vowels. Unconventional symbols have to be created or adapted for accommodating such features. Besides, following the strict systems of the Tibetan Lama script, it is not possible to represent the phonology of Lhowa as it is spoken. Moreover, this script does not qualify itself being able to be functionally used for literacy and multilingual education in Nepal. Many people are still illiterate in the Tibetan Lama script. Regarding the government policy of Nepal, Devanagari script has been adapted for Lhowa. Except murmured sounds and tones, the other sounds can be easily accommodated in

Devanagari script. The murmured sounds can be written by with the character <ॠ> where necessary. The tones can also be written by using additional diacritics which are easily adaptable in Devanagari script. Apart from this, Devanagari script is easy to follow for the literate in Nepali. The technical issues and challenges which were not easily accommodated in Tibetan Lama Scripts have been more easily accommodated in Devanagari scripts. Thus, this script is preferable to Tibetan Lama Scripts for a preliterate language like Lhowa in Nepal.

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- Annex 1: Proposed Lowa Orthographies: Simplified Sambhota and Himalayan Devanagari

CONSONANTS	HIGH TONE UNASPIRATED	HIGH TONE ASPIRATED	LOW TONE ASPIRATED	LOW TONE VOICED	HIGH TONE (other)	LOW TONE (other)
VELAR	क ka	ख kha	ग ga	घ ga	ङ nga	ञ nga
PALATAL	च ca	छ cha	ज ja	झ ja	ञ nya	ञ nya
DENTAL	ट ta	ठ tha	ड da	ड da	ण na	ण na
BILABIAL	प pa	फ pha	ब ba	भ ba	म ma	म ma
ALVEOLAR	त ta	थ tha	ड da	ड da	स sa	स sa
RETROFLEX	ट टa	ठ ठa	ड डa	ड डa	स सा	स सा
PALATAL-VELAR	क कya	ख खya	ग गya	घ घya		
POSTALVEOLAR					श sha	श sha
RHOTIC					र ra	र ra
SEMIVOWEL					य ya	य ya
LATERAL					ल la	ल la
VL LATERAL					ळ lha	
SEMIVOWEL					व va	व va
GLOTTAL					ह ha	ह ha
GL-RHOTIC					ह्र hra	

VOWELS	अ (a)	आ	इ	ई	उ	ऊ	ए	ऐ	ओ	औ	अं	अः	उं	उः
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