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## Himalayan Linguistics

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*Issues in Bahing orthography development*

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### ABSTRACT

Section 1 of this paper summarizes the community-based process of Bahing orthography development. Section 2 introduces the criteria used by the Bahing community members in deciding how Bahing sounds should be represented in the proposed Bahing orthography with Devanagari used as the script. This is followed by several sub-sections which present some of the issues involved in decision-making, the decisions made, and the rationale for these decisions for the proposed Bahing Devanagari orthography: Section 2.1 mentions the deletion of redundant Nepali Devanagari letters for the Bahing orthography; Section 2.2 discusses the introduction of new letters to represent Bahing sounds that do not exist in Nepali or are not distinctively represented in the Nepali Alphabet; Section 2.3 discusses the omission of certain dialectal Bahing sounds in the proposed Bahing orthography; and Section 2.4 discusses various length related issues.

### KEYWORDS

Kiranti, Bahing language, Bahing orthography, orthography development, community-based orthography development

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# *Issues in Bahing orthography development*

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## **1 Introduction**

### ***1.1 The Bahing language and speakers***

Bahing (Bayung) is a Tibeto-Burman Western Kirati language, with the traditional homelands of their speakers spanning the hilly terrains of the southern tip of Solumkhumbu District and the eastern part of Okhaldhunga District in eastern Nepal.

The Bahing language has relatively strong oral vitality in comparison to other Kiranti languages without a written tradition (Lee, 2005). Although there have been several published descriptions of the Bahing language (Hodgson 1880; Van Driem 2001; Michailovski 1975, 1988; Lee 2005), the Bahing people lacked a community-based working orthography for text writers (as opposed to word-list collectors) from among themselves until quite recently. It was only in December 2009 that the Bahing people were able to use a community-based functional orthography, using the Devanagari script, to write stories in their own language for publication (Lee and Hang 2009a).

### ***1.2 Community-based Orthography Development***

Orthography development would ideally not be based on just a few people's decision to make it "official", but is a process that needs to be owned by the whole language community, and needs constant feedback, evaluations and revision over time. It is therefore a complex, time-consuming process in which the ultimate goal is for the orthography to become widely and easily used.

In 2005, a team from the Central Department of Linguistics at Tribhuvan University conducted a documentation of the Bahing Language (Yadava et al. 2005)<sup>1</sup>. Through the documentation process, as well as the team's orthography-related discussions with some Bahing leaders from Bahing Kirat Mulukhim<sup>2</sup> (including the language resource persons, Mekh Raj Bahing and Bishow Ram Bahing), the researchers and professors of the Central Department of Linguistics at Tribhuvan University have provided the groundwork in helping these Bahing leaders to become more aware of orthography issues for their mother-tongue.

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1 The documentation team was sponsored by NFDIN, and coordinated by Yogendra Yadava, with Madhav Pokharel and Bhabendra Bhandari serving as consultants, and Rajendra Thokar and Him P. Phuyal as research assistants.

2 Bahing Kirat Mulukhim is an indigenous NGO launched in 2005 with the goals of promoting the Bahing people's identity, and preserving Bahing culture, language and ecology.

Further observations on the Bahing language and orthography issues arose from a sociolinguistic survey that included comparisons of the Bahing dialects and varieties (Lee 2005), as well as ongoing research and Bahing language development involvement through my affiliation with the Center for Nepal and Asian Studies. Such observations are mentioned in this paper in places where they are pertinent to the discussion below of selected issues related to the community-based Bahing Devanagari orthography development process.

In January 2008, Bahing Kirat Mulukhim was encouraged to involve a wider cross-section of the Bahing community in the Bahing Devanagari orthography development process. As a result, the organization held an “Orthography and Creative Writing Workshop” in Goru Mare Bhanjiang, Okhaldunga. During the 15-day workshop, I facilitated the full-time participation of 17 representatives from different villages, with ages ranging from 19 to 63, and educational levels ranging from the equivalents of class 10 to Master’s Degree. Among them, 13 were men, and 4 were women. The Bahing language was the medium of communication for this workshop.

The first goal of this workshop was for the participants from different Bahing dialect and speech variety areas to come to a consensus in negotiating a functional Bahing orthography that could be owned by the community. The second goal of this workshop was for the participants to learn to write short stories in order to use and test the new writing system.

For the first goal of this workshop, my role was that of a linguistic advisor and facilitator. Responsibility for decision-making belonged to the participants. For the second goal of the workshop, I had the additional role of being a short story-writing instructor.

The participants were whole-heartedly engaged, and had many lively (at times fiery) discussions, in sub-groups and as a whole group, to reach a consensus for a functional writing system and alphabet. They were also diligent in coming up with example words for the letters of the new Bahing alphabet. More significantly, they learned how to write short stories using the newly agreed upon orthography.

In September 2008, many of the same participants attended a follow-up workshop. During this second workshop, the participants learnt how to improve on their printed out written stories, and also discussed some of the more challenging orthography-related issues arising from the writing of the stories. They also learnt how to conduct field-testing surveys of their own stories and the new alphabet, and spent one to two weeks sharing these with their fellow-villagers to gather feedback for improvement.

Much effort in editing and proofreading has been done on the stories before their publication. The participants self-edited their own stories and also helped to edit one another’s stories during the two workshops. My assistant, Tara Hang (Bahing), and I also edited and proofread the stories repeatedly during the period between the end of the first workshop in January 2008 and just before sending the manuscripts for publication in November 2009. The process of editing the stories had yielded further insights into the orthography-related problems encountered by the writers.

### ***1.3 Mother-Tongue Publications***

The result of the two workshops and the editing process was Bahing Kirat Mulukhim’s publication of two books, *Ikke Kotha* (Lee and Hang 2009) and *Bayung Barnamala Nung Rekdum Trikake Sendom Loda* (Lee and Hang 2009).

*Ikke kotha (Our stories)* is a volume of 22 selected stories out of 25 stories that were written by the 17 Bahing participants during the first workshop. In the volume, each Bahing story is followed by its translation into Nepali, so that a wider audience can enjoy the stories.

The second book introduces a tentative working Bahing Devanagari orthography and the letters of a proposed Bahing Alphabet, with illustrated words and pictures for each letter.

The target readership for these two books is for those who have had more than 6 years of formal education in Nepali. Their main purpose is to introduce the Bahing orthography to Nepalese, particularly Bahing people, who are already literate in Nepali. It is only after many relatively well-educated Bahing people are able to read and write using the Bahing orthography, that Bahing literacy classes will have more chance of being successfully implemented for the uneducated.

The two published books have aroused interest and are being read. Plans are in process for wider distribution of the books and to gather more feedback. It is hoped that these publications will serve as a starting point for inviting wider involvement from the whole Bahing community for their ongoing orthography development.

## **2 Bahing orthography issues and rationale for decision-making**

During the workshops, the basic criteria used for coming up with the proposed Bahing Devanagari writing system were that it should be:

- a) Simple
- b) Consistent
- c) Easy for transfer later to the Nepali language for new literates
- d) Compatible with Unicode

The workshop participants were encouraged to be intentional about making the Bahing orthography as simple and consistent as possible for the sake of young children and illiterate Bahing adults who will be learning how to read and write in their mother-tongue. In recent years, the indigenous communities within Nepal have become more aware of the desirability of mother-tongue education. Likewise, it is the wish of the Bahing leaders to make mother-tongue education possible for their own people eventually.

In order to enable new mother-tongue literates to transfer easily to literacy in Nepali, the Devanagari script was chosen for the proposed working Bahing Orthography. It is inevitable that certain Nepali letters have been deleted, while certain new symbols have been added, and certain ways of Bahing writing have to differ from Nepali writing. However, efforts were made to minimize these differences as much as possible, such that for everything added or proposed, it was done with the goal of simplicity and consistency to promote learning ease.

It is always logical, when learning any new skills, to go from the simpler to the more complicated. In comparison with the proposed Bahing orthography, Nepali orthography has features that seem slightly more complicated because of some inconsistencies resulting from influences from sources including Sanskrit (Noonan 2005). Due to many years of exposure to Nepali texts through formal education, most well-educated Nepalese have mastered reading in Nepali Devanagari. However, it is hoped that illiterate Bahings who wish to become literate will

not need many years before they will be able to read for enjoyment and new information, and be able to write freely in expressing their own thoughts. Once the new literates have mastered a simpler and more consistent writing system in their own language, it will be less overwhelming for them to transition to acquiring literacy using a writing system that is slightly more complicated.<sup>3</sup>

Presented below are some selected issues that had arisen during the community-based orthography discussions and story-writing process.

### ***2.1 Deletion of Redundant Nepali Devanagari Letters***

The proposed Bahing Alphabet omits the following superfluous Devanagari consonant graphemes shown in (1):

(1) ज; ण; ष; श; क्ष

Such omission is based on the fact that the sounds represented by ज and ण do not exist in the Bahing language, while ष and श are indistinguishable from स in the speech of many Bahing speakers. ([s] and [ʃ] seem to be in free variation in many Bahing varieties, while some speakers from Mamkha Jukepani pronounce [ʃ] before [t] in place of [s] or [ʃ].) Furthermore, क्ष [ks] can simply be written as two consonants, क्स.

The above situation also reflects Noonan's (2005) observation that: "The Devanagari script contains more graphemes than are strictly necessary for a perfect phoneme-to-grapheme representation of Nepali. This results from the fact that the standard spelling is largely etymological and the alphabet is identical to the one used for writing Sanskrit."

As for the vowel graphemes, the following letters shown in (2) have been omitted:

(2) इ; ऊ; ऐ; औ

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3 Another type of challenge seems to have risen for some Bahings in their efforts to transition from Nepali Devanagari to Bahing Devanagari – it is a challenge of having been so ingrained in what has been first acquired in formal education that it becomes hard to adapt to any deviation from this. Although some highly motivated literate Bahings who did not participate in the workshops have commented, after reading the two published books, that the Bahing orthography is easy to read, there has also been feedback from some literate Bahings, that the Bahing orthography is difficult for them because of the new letters in the proposed alphabet. Whereas it has taken well-educated Bahings many years to gain fluency in Nepali Devanagari literacy, there seems to be an expectation from those who provided the latter feedback, that if fluency in Bahing Devanagari literacy is not instantaneous for them, then the newly proposed Bahing orthography is considered to be "difficult".

Such a challenge reflects Noonan's (2005:6) observation that literate bilingual speakers of the six minority languages under consideration in his paper achieve literacy first in Nepali, and that this has a considerable influence on the way that the Devanagari script has been used for their languages.

A possible way to overcome the challenge mentioned may be to have transitional literacy classes for those already literate in Nepali. While such transitional classes will be significantly shorter than classes for those who are completely illiterate, the success of these classes will depend on the motivation and mindsets of the class participants. Moreover, it will be the local community's responsibility to decide whether to implement such classes, and whether to partner with those who are able to provide specialized assistance and consultation.

The rationale for the omission of ङ and ञ will be discussed in Section 2.4.3, under the general topic of *Length* in Section 2.4. As for the diphthong vowels, ऐ and औ, the workshop participants have agreed that it would be simpler to spell out the diphthong sounds with two vowels, rather than tax non-literates with two more letters to learn in the Bahing Alphabet.

## 2.2 Introduction of new letters

### 2.2.1 The bilabial implosive

Similar to Wambule, a neighboring Kirati language (cf. Opgenort 2004: 79-82), the bilabial implosive is a distinctive feature of the Bahing language. As this sound does not exist in Nepali, a new symbol had to be devised for the Bahing alphabet.

The recommended Unicode symbols for depicting the bilabial implosive in Devanagari are the symbols for [p] or [b] with either a subscript line or subscript dot as shown in (3):

(3) प् ; प̣ ; ब् ; ब̣

The Devanagari voiced bilabial stop with a subscript line, ब्, was the symbol originally recommended by the documentation team from Tribhuvan University's Central Department of Linguistics in their orthography-related discussions with leaders from Bahing Kirat Mulukhim. However, for ease of typing in the Preeti font for which they were already familiar, these Bahing leaders had preferred a symbol that they had created themselves. Their preferred symbol, ष, combined the left side of the Devanagari voiced bilabial stop symbol, ब [b], and the right side of the Devanagari voiceless aspirated bilabial stop symbol, फ [p<sup>h</sup>]. (Mekh Raj Bahing p.c., 2007)

During the first orthography workshop held in Okhaldhunga in 2008, the participants became convinced about the importance of having an orthography that was supported by Unicode. Because the symbol originally favored by the leaders of the Bahing Kirat Mulukhim was not supported in Unicode, an alternative had to be chosen.

However, a major challenge for the Bahing participants' consensus in decision-making was that the bilabial implosive only occurs as voiced, [β], in some Bahing varieties (mainly those from Moli and Sobru), and only occurs as devoiced, [β̥]<sup>4</sup>, in some Bahing varieties (mainly those from Jukepani in Mamkha and Anderi in Naransthan). The participants with the voiced version, [β], in their speech variety had strongly proposed depicting the bilabial implosive with a Devanagari voiced bilabial stop symbol with a subscript line: ब्. However, those with the devoiced version, [β̥], in their speech variety had strongly proposed depicting it with a Devanagari voiceless bilabial stop symbol with a subscript line added: प्. (All of them did not favor using the bilabial stop with a subscript dot, as labials with subscript dots can be found in Hindi loan words in some Nepali texts.) Each group felt strongly that using the chosen symbol of the other group would be confusing for readers from their own group.

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4 The IPA symbol for the devoiced bilabial implosive, [β̥], used to be written as [β̥]. Gogoi (2007) mentions that voiceless implosives are usually more marked sounds than voiced implosives, and that certain languages have been verified to show voicelessness in their implosives. These languages include Pulaar (Gogoi 2007), Seereer-siin (McLaughlin 2005), Lendu (Demolin 1995), and Owerri Igbo (Ladefoged and Maddieson 1996).

An IPA glottal stop symbol with a line on top,  $\bar{ɔ}$ , was further proposed. This symbol is supported in Devanagari Unicode, and its neutrality from close resemblance to either  $\bar{ब}$  or  $\bar{प}$  made it acceptable for both the “voiced” and “voiceless” groups. However, when it was later verified<sup>5</sup> that this symbol could not function as a consonant to be combined with half vowels while typing in Devanagari Unicode, the idea was abandoned.

Based on a majority vote, the Devanagari voiceless bilabial stop symbol with a subscript line,  $\bar{ब}_s$ , was temporarily chosen for use in the participants’ story-writing. However, the situation was still highly unsatisfactory for the group that preferred to use the Devanagari voiced bilabial stop symbol with a subscript line,  $\bar{ब}_v$ .

During the second workshop, a Devanagari retroflexed lateral approximant symbol,  $\bar{ळ}$ ,<sup>6</sup> was proposed for representing the Bahing bilabial implosive. This was unanimously favored by all the participants present based on the following rationale:

1. The retroflexed lateral approximant sound neither exists in Nepali nor Bahing. As the symbol,  $\bar{ळ}$ , is not used in Nepali Devanagari, it would not pose a problem for new literates to transition from reading in Bahing to reading in Nepali;
2. It is a neutral symbol for both the “voiced” and “devoiced” groups;
3. It can easily be combined with half vowels when typing in Devanagari Unicode, as shown in the example in (4):

(4) चुकळे  
[ˈtsukʌe] / [ˈtsukʌ̠e]  
‘flea’

4. The rounded curves of  $\bar{ळ}$  slightly resemble those of the combined symbols of  $\bar{ब}$  with  $\bar{फ}$  ( $\bar{फ़}$ ) originally created and favored by leaders of Bahing Kirat Mulukhim.

### 2.2.2 The glottal stop

The bilabial implosive only occurs at the onset of a syllable in Bahing, in either word-initial or word-medial positions. Whenever it occurs in word-medial position, such as at the onset of the second or third syllable, and is preceded by a vowel in the previous syllable, the glottal closure begins before the bilabial closure, as shown in the following examples of IPA transcriptions in (5):

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5 I am grateful to Stephen Watters and Steve Smith (pc2008) for verifying this from a distance while the workshop was in progress in the remote area of Okhaldhunga.

6 This symbol represents the retroflexed lateral approximant in the Marathi orthography. Marathi is an Indo-Aryan language spoken by the Maharashtrians, and serves as the official language of the state of Maharashtra in Western India.

- (5) [ʔbluʔba] ; [ʔjoʔba]  
 ‘fallen’      ‘long’

Because the onset of the glottal closure before the bilabial closure in word-medial position is phonologically predictable, it is unnecessary to represent the IPA transcription of the earlier glottal closure in the Bahing orthography. Examples of words with word-medial bilabial implosives written in Bahing Devanagari are shown in (6) below:

- (6) भ्लुळा ;                      भोळा  
 [ʔbluʔba]                      [ʔjoʔba]  
 ‘fallen’                              ‘long’

Furthermore, in most of the Bahing varieties, there is a tendency for the bilabial implosives in word-medial position to become contracted, such that only the glottal closure occurs without any lip-rounding. Such a contraction can occur regardless of whether the bilabial implosive is preceded by a vowel or consonant, as shown in (7) below:

- (7) **Uncontracted version:** [ʔbluʔba] ; [ʔjoʔba] ; [ʔhelʔba] ; [ʔmiŋʔba]  
**Contracted version:** [ʔbluʔa] [ʔjoʔa] [ʔhelʔa] [ʔmiŋʔa]  
 ‘fallen’                      ‘long’                      ‘heavy’                      ‘cooked’

Several options for depicting glottal stops were considered, including a raised comma, an IPA syllable break dot, and an IPA Glottal Stop symbol with a superscript line, ʔ, which is used in the Limbu Devanagari orthography (Webster 2000, Noonan 2008). The workshop participants decided that a raised comma (ʔ) would be the most appropriate symbol to depict the glottal stop, as it resembles a contraction symbol. They also decided that the vowel following the raised comma should be in its full-form. The examples in (8) show pairs of words written in Bahing Devanagari, in which one word has the bilabial implosive with an earlier glottal closure (indicated by “ळ”), while another word has only the glottal stop (indicated by “ ’ ”).

- (8) **Uncontracted version:** भ्लुळा ;      भोळा ;      हेळ्ळा ;      मीङ्ळा  
 [ʔbluʔba] ;      [ʔjoʔba] ;      [ʔhelʔba] ;      [ʔmiŋʔba]  
**Contracted version:** भ्लु’आ ;      भो’आ ;      हेल्’आ ;      मीङ्’आ  
 [ʔbluʔa] ;      [ʔjoʔa] ;      [ʔhelʔa] ;      [ʔmiŋʔa]  
 ‘fallen’                      ‘long’                      ‘heavy’                      ‘cooked’

Although both forms - the bilabial implosive in word-medial position and its contracted counterpart, the glottal stop - can be distinctively heard in the speech of Bahing speakers, the uncontracted version seems to be in the process of being lost.

Moreover, Bahing words which can vary in this manner tend to be verb-derived modifiers, as seen in the table in (9) below.

(9) Verb Roots Plus Grammatical Endings

Infinitive verbs with ROOTS plus infinitive marker, “चो”			Verb-derived modifiers with ROOTS plus modifier marker, “ळा”			Verb-derived modifiers with ROOTS plus modifier marker, “’आ”		
Bahing	IPA	English Gloss	Bahing	IPA	English Gloss	Bahing	IPA	English Gloss
हेल्चो	hɛltso	to be heavy	हेल्ळा	hɛlʃa	heavy	हेल्’आ	hɛlʃa	heavy
भ्लुचो	ɓlutso	to fall	भ्लुळा	ɓluʃa	fallen	भ्लु’आ	ɓluʃa	fallen
दार्चो	dartso	to suit	दार्ळा	darʃa	suitable	दार्’आ	darʃa	suitable
मीड्चो	miɳtso	to be cooked	मीड्ळा	miɳʃa	cooked	मीड्’आ	miɳʃa	cooked

During the workshop, there were heated debates as to whether consonants before the glottal stop symbol, “ ’ ”, should take half forms or full forms. It was finally agreed that the raised comma should be treated like a consonant, and therefore consonants preceding it would take half forms when half forms are available. They would take full forms with halants only when half forms are unavailable.

The above decision was supported by the rationale that the use of half forms would preserve the written appearance of the same *root* in different words. One could argue that when the written shape of a root looks the same in different words with different endings, it would be much easier for new literates to learn to recognize them quickly. So for example, in the table in (8) above, the three Devanagari words in each row have different looking endings, but the written shapes of their similar roots are easily recognizable because they all look similar.

However, there still seems to be a potential for confusion based on the inconsistency of treating the raised comma like a consonant with a preceding letter, but not treating it as such with the letter that follows. It is true that the raised comma, as well as the ways in which it should be combined with preceding and following letters, has been carefully considered, proposed and used in the two recently published Bahing books (mentioned in 1.2.3). It is also a valid argument that consistency in the representation of similar root-morphemes in different words could make it easier for new literates to learn how to read words as whole items by identifying the shapes of the root-morphemes. Yet, in hindsight, the ambivalence of not treating the raised comma consistently as a consonant, seems to violate the criteria for simplicity, consistency, and ease of transfer mentioned at the beginning of Section 2. Furthermore, such inconsistency is augmented by the varied forms (ळा vs. ’आ) of the verb-derived modifier marker-morpheme as shown in the table in (9) above.

In the need to discuss further solutions, one possibility for consideration would be to adopt what has been done in a Thangmi dictionary (Turin and Thami 2003), which “uses the novel technique of employing the halant, ordinarily used to negate the inherent vowel, to indicate the

glottal stop. In this use, the halant is appended to vowel characters.” (Noonan 2005: 15) An example of the Thangmi convention for indicating the glottal stop is shown in (10):

(10) को

An advantage of using the halant to indicate glottal stops is that it is already an accepted part of Nepali Devanagari. Furthermore, its occurrence in the form of a halant would negate the need for debating whether it should be treated like a consonant, with its preceding consonant having to take a half form.

However, the use of a halant after a vowel gives the halant two different functions – firstly to negate inherent vowels in a consonant, and secondly, to indicate the presence of a glottal stop. It becomes problematic when there is a need to represent a consonant with an inherent vowel followed by a glottal stop, as shown in the example in (11), in which [ʌ] is depicted as an inherent vowel of ल [l] in Devanagari:

(11) IPA:	[ʌʔa]
Current Bahing Devanagari:	ल'आ
Adoption of Thangmi convention:	लूआ *
Gloss:	'younger sibling'/'the younger one'

Another possibility for consideration may be to dispense with the glottal stop symbol altogether. Since the glottal stop in a Bahing word is normally followed by an आ [a] at the end of a word, it seems that the occurrence of a full-form आ [a] at word-final position, without being part of a lengthened vowel or being attached to the preceding consonant, may be enough to suggest the presence of a glottal stop. In other words, the combination of Devanagari letters shown in the examples in (12) below (without any overt glottal stop symbol) may be phonemically adequate to elicit a glottal stop at the phonetic level for the majority of Bahing speakers.

(12) (a) inherent vowel + full form आ [a]:

लआ ;	हआ
[ʌʔa] ;	[hʌʔa]
'younger sibling'	'itching in the throat'

(b) half vowel + full form आ [a]:

भूआ ;	भोआ ;	लाआ
[ʌ̃luʔa] ;	[joʔa] ;	[laʔa]
'fallen'	'long'	'tall'

(c) consonant + halant + full form आ [a]:

हेल्आ ;	मीङ्आ
[hɛlʔa] ;	[miŋʔa]
'heavy'	'cooked'

The above solution supports the criterion of simplicity, and would eliminate the need for those grappling with the new orthography to learn yet another symbol with its set of relatively complex rules.

However, there is a flip side of the above solution: Without an overt glottal stop symbol in the orthography to depict this distinctive feature of the Bahing language, there is a possibility that the Bahing glottal stop sound may become extinct more quickly as more people become literate in the Bahing orthography. There are already evidences of synchronic weakening and leveling processes in sound changes (including the loss of the glottal stop) in the speech varieties of some Bahing speakers who did not grow up in areas strongly populated by Bahing mother tongue speakers. While one of the local community's purposes in developing a written tradition is to preserve the language, it would be ironical if literacy in the language also has the potential of speeding up the loss of some distinctive sound features of the language.

Nevertheless, sound changes in each language will be inevitable regardless of whether the language has a written tradition, and whether certain features are preserved in the orthography. Preservation versus functionality are factors that will need to be considered in the discussion among the community for improving the orthography. Further field-testing, feedback and discussions are needed for members of the Bahing community to decide on another solution (if desired) that will be most functional and acceptable for representing (or not representing) the glottal stop in the Bahing orthography.

### 2.2.3 The unrounded open-mid front vowel

Based on the criterion of consistency and simplicity, the workshop participants have unanimously decided that in the Bahing Devanagari orthography, the sounds for [ja] and [ɛ] should be distinctly represented.

This is in contrast to the Nepali Devanagari orthography in which the written symbols, या, are pronounced in 2 different ways: In some Nepali words, the letters या represent the IPA pronunciation of [ja]. In some Nepali words, the letters या represent the IPA pronunciation of [ɛ]. Some Nepali examples of [ja] sounds are shown in (13), and some Nepali examples of [ɛ] sounds are shown in (14) below:

(13) **Examples of Nepali words with [ja] sounds:**

समस्या ;	यात्रा ;	ल्याउनु ;	उज्यालो ;	च्याउ
[sɑmɑsja] ;	[jɑtrɑ] ;	[ljɑunu] ;	[udʒɑlo] ;	[tʃjɑu]
'problem'	'journey'	'to take'	'bright'	'mushroom'

(14) **Examples of Nepali words with [ɛ] sounds:**

ब्यापारी ;	ब्यावसाय ;	स्याल ;	भ्याल ;
[bɛpɑri] ;	[bɛwɑsɑjɑ] ;	[sɛl] ;	[jhɛl] ;
'business'	'industry'	'jackal'	'window'

The Bahing letters chosen for representing [ja] are या, as in Nepali. However, based on the criterion of simplicity, the Bahing letter chosen for representing [ɛ] is the Devanagari unrounded close-mid front vowel with a subscript dot: “ ए̣ ”. When the half form of ए̣ is combined with a consonant, the lower dot occurs below the stem of the consonant, as shown in (15) below:

- (15) ब्लेम् ;      बेक्चो ;      सुपेल्  
          [blɛm] ;      ['bɛktsɔ] ;      ['supɛl]  
          'palm'      'to die'      'mosquito'

As shown in (16) below, the contrast between the elegance of using ए̣ to represent [ɛ] versus the awkwardness of using या becomes more evident when one writes Bahing words with [ɛ] sounds occurring in vowel harmony.

- (16) (a) केङ्गेले ;      सेकेलेले  
       (b) क्याङ्ग्याल्या      स्याक्याल्याल्या  
          ['kɛŋgɛ,ɛ] ;      ['sɛkɛ,ɛɛɛ]  
          'soya bean'      'sound of marbles scattering' (onomatopoeic)

The Bahing participants' decision to use the Devanagari unrounded close-mid front vowel and a subscript dot, ए̣ , to represent the sound [ɛ], is similar to the decision made by the Limbus and certain sectors of the Khaling community<sup>7</sup>. It is also consistent with the recommendation made by the documentation team at the Department of Linguistics at Tribhuvan University in their discussions with leaders from the Bahing community (Phuyal 2006; Mekh Raj Bahing p.c. 2007).

#### 2.2.4 Back vowels

The unrounded back vowels, [ɯ] and [ʌ], exist in many of the Bahing speech varieties (especially those from Anderi Naransthan, Jukepani Mamkha, and Ratmate in the central region of the Bahing people's traditional homeland, and Necha Batase in the north). For the speech varieties of such speakers, [u] and [ɯ] are contrastive phonemes as shown in (17) below, and [o] and [ʌ] are contrastive phonemes, as shown in (18) below:

- (17) [gu] ;      [gɯ]  
       'I' / 'me'      'hand' / 'arm'
- (18) ['glo:ʔa] ;      ['glʌ:ʔa]  
       'guilty'      'burnt'

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7 (Jeff Webster, Simon Khaling, Sueyoshi Toba and Ingrid Toba p.c., 2007)

For these speakers, it would seem obvious that the Bahing Alphabet needs to have separate letters to differentiate the sounds in each of the above pairs of phonemes.

However, the Bahing varieties spoken in Moli and Ketuke (in the southern region) do not have the distinctions of [u] versus [u], as shown in (19b):

(19)

<u>Regions of Bahing Traditional Homeland:</u>	<u>Examples</u>	
(a) Central and Northern Varieties:	[gu] ;	[gu]
(b) Southern (Moli and Ketuke) Varieties:	[gu] ;	[gu]
	‘I’/‘me’	‘hand’/‘arm’

It seems that the absence of the rounded vs. unrounded close back vowel distinctions ([u] vs. [u]) in the second groups’ speech varieties may have been caused by the historical phenomena of leveling. After considering this hypothetical explanation at the workshop, all the participants, including representatives from Moli, agreed that for the purpose of preserving older traits of Bahing words from extinction, it was important to have separate letters in the Bahing Alphabet to differentiate the rounded vs. unrounded close back vowels. This was in addition to the fact that among the Bahing community as a whole, speakers who make the rounded vs. unrounded distinctions are in the majority.

As for the unrounded close-mid back vowel, [ɤ], found in the speech varieties of those from the central and northern regions, this sound also does not exist in the speech varieties of those from Moli and Ketuke in the southern region. In places where speakers from the first group pronounce [ɤ] for certain words, speakers from the second group of speakers tend to pronounce [e] in the same words, as shown in (20b) below:

(20)

<u>Regions of Bahing Traditional Homeland:</u>	<u>Examples</u>		
(a) North and Central Varieties:	[‘glɤ:ʔa] ;	[nɤ] ;	[sɤ]
(b) Southern (Moli and Ketuke) Varieties:	[‘gle:ʔa] ;	[ne] ;	[se]
	‘burnt’	‘nose’	‘mouth’

The examples in (21) below show that it is not just a matter of choosing [ɤ] or [e] to be represented in the orthography, as the first group of speakers do use the [e] sound in their speech varieties in certain words where the second group of speakers also use the [e] sound.

(21)

<u>Regions of Bahing Traditional Homeland:</u>	<u>Examples</u>		
(a) North and Central Varieties:	[se] ;	[‘kokte] ;	[‘beba,tsa]
(b) Southern (Moli and Ketuke) Varieties:	[se] ;	[‘kokte] ;	[‘beba,tsa]
	‘meat’	‘skin’	‘child’

Again, for the purpose of preserving a distinctive trait of the Bahing language from extinction, and because the speakers who have the [ɿ] sound in their speech varieties are in the majority, all the participants agreed that this sound needs to be represented in the Bahing Alphabet.

The Bahing letter chosen to depict [ɿ] is the Devanagari symbol for the rounded close back sound with an underscript dot: “उ̣”. When the half form of उ̣ is combined with a consonant, the lower dot is snuggled inside the half form of उ, as shown in the Devanagari examples in (22).

(22)

गु ;	खुली ;	रुचो ;	बकु ;	चुले
[gɿ] ;	['k <sup>h</sup> ɿli] ;	['ru:tsɿ] ;	['bʌkɿ] ;	['tʃɿle]
'hand'	'leg'	'to be ill'	'water'	'nettle'

The Bahing letter chosen to depict [ɻ] is the Devanagari for the rounded close-mid back vowel with an underdot: “ओ̣”. Examples of Bahing Devanagari words containing the half forms of [ओ̣] are shown in [23] below.

(23)

ग्लोः'आ ;	सोपोरो ;	सोता ;	सोगोलो ;
['glɻ:ʔa] ;	['sɻpɻ,rɻ] ;	['sɻta] ;	['sɻgɻ,lɻ] ;
'burnt'	'lung'	'dried'	'dried'

The above choices made by the participants were also congruous with the recommendation made by the documentation team at Tribhuvan University's Department of Linguistics in their discussions with the leaders from Bahing Kirat Mulukhim. (Phuyal 2006; Mekh Raj Bahing pc., 2007).

It seems that Bahing speakers who do not have the [ɿ] and [ɻ] sounds in their speech varieties are able to recognize these sounds in the speech varieties of those who do. Thus *reading* Bahing texts that have the underscript dotted letters, उ̣ and ओ̣, will probably not be too difficult for most Bahing speakers who are familiar with the proposed Bahing Alphabet.

However, having to make such distinctions when *writing* in Bahing may be problematic for Bahing speakers who do not have the [ɿ] and [ɻ] sounds in their speech varieties. It would be an added burden for them to try to put themselves in the shoes of speakers from other varieties, and to remember whether a back vowel was supposed to have an underscript dot.

Moreover, among those who have the [ɿ] and [ɻ] sounds in their speech varieties, there is a substantial group, namely speakers from the largest pure Bahing settlement, Anderi Naranthan, who pronounce the infinitive marker, a high frequency grammatical morpheme, as [tsɻ]. In contrast, others who have [ɻ] in their speech varieties pronounce this marker as [tso]. Examples of such contrasts are shown in (24) below:

(24)

<u>Regions of Bahing Traditional Homeland:</u>	<u>Examples</u>	
(a) Most of the Bahing Varieties:	[p <sup>h</sup> litso] ;	[ʔzatso]
(b) Anderi Naransthan's Variety:	[p <sup>h</sup> litsʋ] ;	[ʔzatsʋ]
	‘to send’	‘to eat’

A tentative compromise for the above challenges in orthography decision-making was the participants’ agreement that a main goal of the orthography part of the first 2008 Workshop was merely to come up with a standard set of letters for the Bahing Alphabet, and to agree on the ways to write combinations of these letters. Such a goal would not include decisions about spelling standardization (for minor vowel differences), which would necessitate the choice of a dialect or variety to base it upon. The workshop’s objective was to devise an adequate system for any Bahing mother-tongue speakers (of any dialect or speech variety) who wish to express themselves in writing.

The above goal could be better understood in view of other languages in which a standard set of letters of the alphabet exists for each language, regardless of how the words are spelled. So for example, even though the spelling of some words in British English and American English are slightly different (e.g. *colour* vs. *color*, and *cheque* vs. *check*), both English varieties share the same 26 letters of the English Alphabet.

Because the focus was on the standardization of the Bahing Alphabet, and not the standardization of the dialects, the writers’ dialectal traits have been preserved to some extent in the publication of *Ikke kotha* (*Our stories* - the volume of short stories that they wrote). Certain words are spelled differently according to the pronunciations from the almost similar, but nevertheless different dialects of the writers. For this first publication of a Bahing book of stories written by mother-tongue writers, the varieties of spellings not only lend local flavors to the stories, but also serve as a documentation of words from various speech dialects and varieties. However, a few writers have purposely spelled their words based on the pronunciation of a dialect that was not their own, but which they felt might be more widely understood.

The volume, *Ikke kotha*, has an appendix that compares the most common set of Bahing words that have been spelled differently due to consistent vowel differences across speech varieties. The Bahing community has been invited to give their feedback regarding their recommendation for the ones that should be used as the standard spelling.

From a sociolinguistic viewpoint, one could argue that spelling standardization should be based on the variety that is most widely understood, and has the greatest number of speakers.<sup>8</sup> However, in order for the orthography to be owned by the community, it is crucial that the input of community members from all dialect groups is heard and considered. It is hoped that the spelling of many Bahing words could be standardized in the near future after more input from more members of the Bahing community. Spelling standardization cannot be enforced, and requires time to evolve after the new Alphabet becomes more widely used throughout the mother-tongue community.

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<sup>8</sup> A sociolinguistic survey of Bahing (Lee, 2005) suggests that Rumdali (a loosely defined umbrella dialect comprising speech varieties spoken in the central region) would be a reasonable starting point for standardization.

### 2.3 Rounded front vowels not represented in the proposed Bahing alphabet

The rounded front vowels, [y] and [ø], also exist in the speech varieties of some Bahing speakers, but these are not included in the proposed Bahing Alphabet.

For many words which has the high rounded back vowel, [u], in the speech varieties of Bahings from the central region (especially those from Mamkha, Naransthan, Bigutar, Baruneswor, and Ratmate), other speakers (especially those from Moli and Ketuke) tend to pronounce the counterpart of [u] with the high unrounded front vowel, [i]. Examples of such words are contrasted in (25) below:

(25)

<u>Regions of Bahing Traditional Homeland:</u>	<u>Examples</u>
(a) Central Varieties:	[ˈdumtso]/[ˈdumtsʏ] ; [ˈtutta]
(b) Southern (Moli and Ketuke)Varieties:	[ˈdimtso] ; [ˈtitta]
	‘to happen’ ‘known’

It’s interesting to note that the Bahing speakers of the speech varieties in (25a) above are the ones who have the [u] vs. [ʉ], and [o] vs. [ɤ] distinctions in their speech [as exemplified in (17) and (18) earlier]. Furthermore, those of the speech varieties in (25b) are also the ones who do not have the [ʉ] and [ɤ] vowels. Based on the agreement, mentioned in the previous section, for Bahing writers in the initial use of the Bahing Alphabet to spell words according to the pronunciation of their own dialects or varieties, the above situation would not pose a problem for the time being, as the Bahing Devanagari letters for [u], [i], [ʉ], [o], and [ɤ] clearly exist in the proposed Bahing Alphabet.

However, in the speech varieties of some Bahing speakers, the rounded close front vowel, [y], is used in place of [u] or [i] by other speakers of the same word. Such contrasts are exemplified in [26]:

(26)

<u>Regions of Bahing Traditional Homeland:</u>	<u>Examples</u>
(a) Central Varieties:	[ˈdumtso]/[ˈdumtsʏ] ; [ˈtutta]
(b) Southern (Moli and Ketuke)Varieties:	[ˈdimtso] ; [ˈtitta]
(c) Other Varieties:	[ˈdymtso] ; [ˈtytta]
	‘to happen’ ‘known’

The majority of the workshop participants could not easily discern the [y] sound, even though there was at least one representative<sup>9</sup> among them who had this sound in his speech variety. The consensus among the participants was that it was unnecessary to tax the Bahing Alphabet with yet another letter - especially a letter for a sound that is less familiar to many

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9 Among the participants was a 62 year-old man, raised in Ripa (in Mamkha), but settled in Gorumare Bhanjiang (in Okhaldhunga), whose [y] vowel in his speech variety is quite distinct. Neither his wife nor his grown up children have this vowel in their speech varieties. (There are currently very few Bahing households in Ripa.)

other Bahing speakers. Until the spelling is standardized, the speakers with the [y] sound in their speech would need to choose the Devanagari equivalents of [u] or [i] when they write words with such a sound. Thus even though the documentation team from Tribhuvan University's Central Department of Linguistics, in their discussions with the Bahing leaders, had recommended the use of the Devanagari unrounded close front vowel with an underscript dot to represent [y]: ढ (Phuyal 2006; Mekh Raj Bahing p.c., 2007), this symbol is, for the time being, not included as part of the working Bahing Alphabet proposed by the workshop participants.

Likewise, in the speech of some Bahing speakers, the rounded close-mid front vowel, [ø], is used in place of the [ɤ] sound in many of the speech varieties in the central region, and in place of the [e] sound in the speech varieties of Moli and Ketuke speakers in the southern region. Examples of similar meaning words which contrast these vowels are shown in [27] below:

(27)

<u>Regions of Bahing Traditional Homeland:</u>	<u>Examples</u>		
(a) Central Varieties:	['glɤ:ʔa];	[nɤ] ;	[sɤ]
(b) Southern (Moli and Ketuke)Varieties:	['gle:ʔa] ;	[ne] ;	[se]
(c) Other Varieties:	['glø :ʔa] ;	[nø] ;	[sø]
	'burnt'	'nose'	'mouth'

Again, the workshop participants' consensus was that it was unnecessary to tax the Bahing Alphabet with yet another letter that is less familiar to many other Bahing speakers. Thus even though the documentation team from Tribhuvan University's Central Department of Linguistic had recommended the use of the Devanagari unrounded close-mid front vowel with an underscript dot to represent [ø]: ॠ (Phuyal 2006; Mekh Raj Bahing pc, 2007), this symbol is, for the time being, also not included as part of the working Bahing Alphabet proposed by the workshop participants.

## 2.4 Lengths

### 2.4.1 Contrastive short versus long vowels

Long and short vowels can occur as minimal pairs in Bahing. Except for the unrounded open-mid front vowel, [ɛ], all the short (or default length) Bahing vowels have been observed to have their lengthened counterparts, as shown in the table in (28) below:

(28) Words with Contrastive Short and Long Vowels

VOWELS		WORDS		
Bahing	IPA	Bahing	IPA	English Gloss
अ	[ʌ]	हचो	['hʌtso]	to itch in the throat
अः	[ʌ:]	हःचो	['hʌ:tso]	to joke with
आ	[a]	राचो	['ratso]	to come
आः	[a:]	राःचो	['ra:tso]	to bring
ई	[i]	सीचो	['sitso]	to hold
ईः	[i:]	सीःचो	['si:tso]	to throw
उ	[u]	घलुन्चो	['gluntso]	to take out
उः	[u:]	घलुःचो	['glu:tso]	to emerge
उ़	[ʊ]	कुचो	['kʊtso]	to come up
उ़ः	[ʊ:]	कुःचो	['kʊ:tso]	to bring up
ए	[e]	लेचो	['letso]	to honor / to venerate
एः	[e:]	लेःचो	['le:tso]	to sell / to return
ओ	[o]	होचो	['hotso]	to catch fire
ओः	[o:]	होःचो	['ho:tso]	to poke
ओ़	[ɔ]	सोचो	['sɔtso]	to be dried
ओ़ः	[ɔ:]	सोःचो	['sɔ:tso]	to lose / to say

During the first orthography workshop in Okhaldhunga, the participants had decided to use the virsaga – the double dot symbol, [ː] – to depict length in Bahing Devanagari.

However, after the participants saw the first printed drafts of their stories during the second orthography workshop, and from the feedback of those on whom they did field-testing, many of

them felt dissatisfied with the fact that the double dot seems to break up a word, making it seem like two words, as exemplified in (29) below:

- (29)            **ले:चो ;**            **हो:चो**  
                  [**l̥e:tso**]            [**h̥o:tso**]  
                  ‘to sell’            ‘to poke’

Many of those who provided feedback during the participants' field-testing had suggested that it would be much better to have a line above the double dot, so that the whole Devanagari word could be joined together under one line. The result of this<sup>10</sup> can be seen in the third column of the table in (28) above.

#### 2.4.2 Lengthening in possessive pronominal prefixes

In Bahing, vowel lengths in single syllable possessive pronominal prefixes are conditioned by the number of syllables in the noun stems to which the prefixes are attached. The vowels in such prefixes are short by default when they precede attached noun stems with two or more syllables. They are lengthened when they precede attached noun stems with only one syllable. Examples of such phonological conditioning are shown in (30) below.

- (30)
- |     |  |   |
|-----|--|---|
| (a) | [ <b>tawa</b> ] ;<br>“son”               | [ <b>a'tawa</b> ]<br>[ <b>a - tawa</b> ]<br>“3.SG.POSS-son”                 |
| (b) | [ <b>khim</b> ] ;<br>“house”             | [ <b>a:khim</b> ]<br>[ <b>a: - khim</b> ]<br>“3.SG.POSS-house”              |
| (c) | [ <b>sala<sub>1</sub>ma</b> ] ;<br>“bag” | [ <b>ʌ'sala<sub>1</sub>ma</b> ]<br>[ <b>ʌ - salama</b> ]<br>“1.SG.POSS-bag” |
| (d) | [ <b>gu</b> ] ;<br>“hand”                | [ <b>ʌ:gu</b> ]<br>[ <b>ʌ: - gu</b> ]<br>“1.SG.POSS-hand”                   |

The examples in (30) above show that the meaning of a possessive pronominal prefix with a lengthened vowel remains the same as that of its counterpart with an unlengthened vowel. Such phonologically conditioned lengthening is different from the lengthened vowels in the minimal pair lexemes with their contrastive meanings shown in the table in (28) above.

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10 I am deeply grateful to Steve Smith, an SIL member of the Unicode Team, for his technical assistance in making specific changes to the visarga font, and in sorting out many other font challenges.

The workshop participants had agreed that in written Bahing, lengthened vowels that are not phonologically conditioned would be marked by “̄”, as shown in the table in (28) above. Conversely, phonologically predictable long vowels in grammatical-function morphemes, such as possessive pronominal prefixes, would remain unmarked, as shown in the Devanagari examples in (31) below.

(31)

(a)	आतावा ; [a'tawa] [a - tawa] “3.SG.POSS-son”	असालामा [ʌ'sala,ma] [ʌ - salama] “1.SG.POSS-bag”
(b)	आखीम् ; [ʼa:khim] [a: - khim] “3.SG.POSS-house”	अगु [ʼʌ:gʊ] [ʌ: - gʊ] “1.SG.POSS-hand”

#### 2.4.3 Depicting short versus long close front and back vowels

The workshop participants had agreed to use the Bahing Devanagari symbols shown in (32) below to represent short and long high close vowels.

#### (32) Bahing Devanagari symbols for long and short high close vowels

Short vowels:	ई ; उ [i] [u]	Half forms with [k]:	की ; कु [ki] [ku]
Long vowels:	ई̄ ; उ̄ [i:] [u:]	Half forms with [k]:	की̄ ; कु̄ [ki:] [ku:]

In theory, the Nepali Devanagari symbols for short and long close vowels are shown in (33) below:

#### (33) Nepali Devanagari symbols for long and short high close vowels

Short vowels:	इ ; उ [i] [u]	Half forms with [k]:	कि ; कु [ki] [ku]
Long vowels:	ई ; ऊ [i:] [u:]	Half forms with [k]:	की ; कू [ki:] [ku:]

The choice of उ as the default symbol to represent the rounded close back vowel in Bahing Devanagari is based on the grounds that with all other factors being equal, the Bahing orthography should parallel that of Nepali Devanagari. In the Nepali orthography, उ is more commonly used than ऊ. Thus उ was chosen over ऊ for the Bahing orthography.

For the purpose of consistency with the other Bahing lengthened vowels, including the [i] vowel, उ also takes the visarga with a superscript line when it needs to be lengthened.

As for the unrounded close front vowel, [i], listed in (34) below are the rationale for the choice of ई as the default symbol, for the decision to dispense with इ altogether, and for having ई take the visarga with a superscript line when it needs to be lengthened:

(34)

- i) Even for many literate Nepalese, it is hard for them to tell whether इ vs ई, and उ vs ऊ are short or long vowels in Nepali – mainly because length in Nepali is not contrastive. The use of इ vs ई, and उ vs ऊ, is simply based on a rule of occurrence. According to Noonan, (2005; 6) the grapheme pair for इ vs ई, and उ vs ऊ “are superfluous in the sense that they represent potential phonological distinctions which are not made – or, in some cases, not normally made – when speaking Nepali.”
- ii) It is more consistent to depict **all** lengthened vowels with the **same** visarga symbol, “ः”. There will also be less new components for new literates to learn, as they will only need to learn the length symbol once, and then apply it to all lengthened vowels.
- iii) When reading the half forms of ई instead of इ, the readers’ eyes are able to move forward in a linear direction, as shown in (35) below:

(35)

Use of ई symbol for [i]: सीचीलुक्ची

Use of इ symbol for [i]: सिचिलुक्चि

[ˈsitsi,luktsi]  
‘fruit’

For new literates, it is more logical and consistent for the eyes to move forward linearly, rather than to have to move forward and backwards as a result of a written vowel occurring before one or more consonant sounds preceding the pronunciation of this vowel. It may be true that linearity does not play a crucial role for many seasoned literates who read words as whole items. However, it has been observed that non-linearity in Nepali writing sometimes poses spelling challenges even for some educated Nepalese. Thus avoiding the need for such non-linearity will remove one more hurdle for new literates, including uneducated adults acquiring literacy for the first time.

- iv) It avoids, in the written text, a profusion of words ending with इ, depicted as a half form that turns backwards in the word, as in “कि”.

For written words ending in [i] in Nepali, there seems to be more words for which the Devanagari half form of the final [i] turns towards the right rather than the left of its preceding consonant's sound, as exemplified in (36) below:

(36)

दिदी ;	मेथी
[didi] ;	[methi]
'older sister'	'fenugreek'

However, in Bahing, short [i] vowels often occur at the end of words in postpositional high frequency grammatical function morphemes, as shown in the examples in (37) below:

(37)

(a)	खीम्दी	खापीदी	ईप्ती
	खीम्-दी	खापी-दी	ईप्-ती
	[k <sup>h</sup> im - di	'k <sup>h</sup> api - di	'ip - ti]
	[house - LOC	floor - LOC	Sleep - 1.SG.PST]
	'I slept on the floor at home.'		

(b)	अम्मी	गुमी	जाता
	अम-मी	गु-मी	जा-ता
	[am - mi	'gu - mi	'ɟa - ta]
	[3.SG.- ERG	hand - INS	eat - 3.SG.PST]
	'He ate with his hands.'		

Thus, the half form of ई, which turns towards the right side of the symbol representing its preceding consonant sound, has been chosen as the default form of [i], to be consistent with the tendency for half forms of [i] in Nepali to turn towards the right side of the symbol representing its preceding consonant sound at the end of words.

#### 2.4.4 Lengthened high front vowels in a triple vowel cluster

Some minor debate occurred among certain Bahing community members regarding the representation of [ii] or [i:] sounds that occur as part of a triple vowel cluster (VVV). Based on the decisions described in the above sub-sections, when a lengthened unrounded close front vowel, [i:], occurs immediately after a consonant in a lexeme, there was no dispute that this should be written

as a lengthened half form of [ई], as in ‘की:सी’ [ki:si] (‘deer’). However, when [ii] or [i:] occurs as part of a triple vowel cluster, the lengthened high front vowel can either be represented as [yi] or [i:]. Examples of both options are shown in (38) below:

(38)

(a) <b>गोयी</b> [gɤji] CV.CV 'go-1.PL.INC '	(b) <b>गोई:</b> [gɤi:] CVVV 'go-1.PL.INC '
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Based on the grounds that syllables with CVVV patterns are rare in Bahing, whereas syllables with CV and CVV patterns are common, it was eventually agreed that when a lengthened unrounded close front vowel, [ii] or [i:], occurs immediately after another vowel, this should be written as **यी [ji]**, with the first half of the vowel assuming the form of a consonant glide to form a CV syllabic pattern, as shown in (38a) above. Such a form would look less anomalous than the CVVV pattern shown in (38b).

Furthermore, writing **गोयी [gɤji]** instead of **गोई: [gɤi:]** would provide consistency in representing Bahing pronoun-verb agreements. As shown in the table in (39) below, the second consonant in the pronoun is often the same as the second consonant in the verb that accompanies the pronoun. Thus in the phrase on the fourth row: **गोयी लाया [gɤji laja]** (“we go-1.PL.INC”), the consonant **य [j]** is the second consonant in both the first word (the pronoun) and the second word (the verb), and fits in with the general Bahing Pronoun-Verb agreement pattern.

(39) **Pronouns and Verb Roots Plus Pronominal Agreement Clitics**

Pronouns (Bahing)	Verb roots + pronominal agreement clitics (Bahing)	Pronouns (IPA)	Verb roots + pronominal agreement clitics (IPA)	English Gloss
गु	लाडा	gu	'laɳa	I go
गोसी	लासा	'gɤsi	'lasa	we (DUAL INC) go
गुसु	लासु	'gusu	'lasu	we two (DUAL EXC) go
<b>गोयी</b>	<b>लाया</b>	<b>'gɤji</b>	<b>'laja</b>	we (PL INC) go
गुकु	लाका	'guku	'laka	we (PL EXC) go
गो	लाए	gɤ	'lae	you (SG) go

गोसी	लासी	'gɔsi	'lasi	you (DUAL) go
गोनी	लानी	'gɔni	'lani	you (PL/HON) go
आम्	ला	am	'la	he/she/it (SG) goes
आम्दसी	लासे	'amdʌ, si	'lase	he/she/it (DUAL) goes
आम्द	लामे	'amdʌ	'lame	they (PL/HON) go

### 3 Conclusions

The conclusions drawn from the discussions above are summarized in (40) below:

- (40)
1. Based on the criterion of simplicity, the Bahing community members have chosen to omit 9 redundant Nepali Devanagari letters (5 consonants: ज; ण; ष; श; क्ष, and 4 vowels: इ; ऊ; ऐ; औ) from the proposed Bahing Alphabet.
  2. After much discussion to accommodate dialectal differences and compatibility with Unicode, the symbol ʘ was finally chosen to represent the Bahing bilabial implosive.
  3. The Bahing glottal stop occurs as a contraction of the bilabial implosive in word-medial position. The proposed symbol for the Bahing glottal stop is a raised comma, [']. Yet this has the potential for confusion based on the inconsistency of treating the raised comma like a consonant with the preceding letter, but not treating it as such with the following letter. In hindsight, the ambivalence of not treating the raised comma consistently as a consonant violates the orthography decision-making criteria of simplicity, consistency, and ease of transfer.

On the one hand, eliminating the glottal stop symbol would support the criterion of simplicity. On the other hand, its elimination would cause this distinctive Bahing sound trait to remain unpreserved in written form, such that widespread Bahing literacy may quicken its extinction from Bahing speech. Preservation versus functionality are factors that will need to be considered in further improving the orthography.

4. Based on the criteria of consistency and simplicity, and unlike in the Nepali orthography, the sounds for [ja] and [ɛ] are distinctly represented in the Bahing orthography. The Bahing letters chosen to represent [ja] are या, as in Nepali, and the Bahing letter chosen to represent [ɛ] is ए. The elegance of using a single letter instead of two letters to represent a vowel sound becomes more evident in Bahing words with a series of vowel harmony [ɛ] sounds.

5. Due to dialectal differences in vowel sounds, challenges exist for spelling standardization in representing back vowels in the Bahing orthography. In the speech varieties of many speakers from the northern and central regions of the traditional Bahing homeland, [u] versus [ɯ], and [o] versus [ɤ] are contrastive phonemes. The Bahing letters chosen to depict the [ɯ] and [ɤ] sounds are [ᳵ] and [ᳶ] respectively. However, the Bahing varieties spoken in Moli and Ketuke in the southern region do not have the [ɯ] nor [ɤ] sounds. Moreover, Bahing speakers from the largest pure Bahing settlement, Anderi Naransthan in the central region, not only have the [ɯ] and [ɤ] sounds in their speech, but also pronounce the infinitive marker, a high frequency grammatical morpheme, as [tsɤ]. In contrast, others who have [ɤ] in their speech varieties pronounce this marker as [tso].

A tentative compromise for the above challenges in orthography decision-making was the agreement among the Bahing community members to focus merely on the decisions for a standard set of letters for the Bahing Alphabet, and on the ways to write combinations of these letters. The proposed Alphabet would be adequate for most potential Bahing writers to express themselves in their local dialects. Decisions about spelling standardization (for minor vowel differences) would be postponed until the community members are ready for such discussions after the proposed working orthography has become more widespread and has generated more feedback.

6. Although the rounded front vowels, [y] and [ø], exist in the speech varieties of some Bahing speakers, most of those involved in the orthography decision-making process felt that the pronunciations of these 2 sounds were less widespread and less discernable by speakers of other varieties. Consequently, these two sounds are not represented in the proposed Bahing orthography.
7. In the proposed Bahing orthography, length in phonologically unconditioned long vowels is marked by a virsaga with a superscript line: “ ᳶ̄ ”.
8. In Bahing, the vowel length of a single syllable possessive pronominal prefix is conditioned by the number of syllables in the noun stem that follows the prefix. The vowels in such prefixes are short by default when they precede attached noun stems with two or more syllables. They are lengthened when they precede attached noun stems with only one syllable.

In the proposed Bahing orthography, phonologically predictable long vowels (namely those in possessive pronominal prefixes) are unmarked.

9. The letters ᳵ̄ and ᳶ̄ have been chosen as the default symbols for representing short close front and back vowels. Based on the criterion of simplicity, consistency and ease of learning, when length in close front and back vowels needs to be represented, this is done so by the addition of the “ ᳶ̄ ” symbol on the right side of the default ᳵ̄ and ᳶ̄ letters.
10. When a lengthened unrounded close front vowel, [i] or [i:], occurs immediately after another vowel, this is written as ᳶ̄ [ji], with the first [i] assuming the form of a consonant glide to form a CV pattern for the syllable.

## 4 Reflections

The issues discussed in this paper highlights the complexities of orthography development, in that what may appear to be the best solution from one perspective may not necessarily be so from another. It may seem like a formidable task, to develop an orthography that meets the following needs: compatibility with current technology; acceptability to the educated; ease of learning for the uneducated; ease of transfer to a language of wider communication; optimality for depicting only what is necessary; and the preservation of distinctive language traits, with eventual spelling standardization that makes sense to speakers of all the language's varieties, yet validates the distinctiveness of those varieties!

However, an orthography does not have to be perfect to become widely used. Established orthographies, such as English, Nepali and Chinese, despite their idiosyncrasies, do have fluent readers and writers who hardly notice those “inconveniences”, as a result of the orthographies’ adequate exposure and use. Factors such as active community engagement, adequate availability of interesting reading material, and widely accessible literacy classes and education (formal or non-formal) in the desired language, are significant ones in promoting the use of the orthography.

The process of developing a new orthography is a dance between idealism and pragmatism. On the one hand, those involved in this process need to give careful consideration to developing an orthography that meets as many of the desired criteria mentioned above as possible. On the other hand, it is helpful for the community to not wait till all the quirks in the orthography are smoothed out before publishing further materials and implementing literacy programs and other orthography promoting programs. It is only through use that the Bahing community can continue to improve their orthography.

Thus the proposed Bahing orthography developed by participants of the “Orthography and Creative-writing Workshop” in 2008 is still in the infancy of its evolution. The extent of the Bahing community's sense of ownership and involvement, and the availability of technical assistance will determine the story of its progress.

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