Proposal to Encode the Newar Script in ISO/IEC 10646

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1 Introduction

This is a proposal to encode the Newar script in the Universal Character Set (ISO/IEC 10646). Feedback is requested from experts and the user community regarding the character repertoire, the representative character glyphs, and other attested characters that are not yet proposed for encoding.

Script Name The proposed name for the script block is 'Newar'. It is a tentative assignment and may change based upon feedback from the user community.

Allocation The block is allocated to the Supplementary Multilingual Plane (SMP) at U+11400.

Character Names Character names follow the convention used in the UCS for characters of other Brahmibased scripts. In some cases, the character names differ from indigenous Newar names. Where possible, Newar names have been provided as aliases in the names list.

Character Repertoire The proposed repertoire consists of 91 characters (see the code chart and names list in figures 1 and 2). The intent is to enable the broadest representation of the Newar script, from the historical forms of Old Newar manuscripts to the present style of 'Prachalit' known as 'Nepal Lipi'. The repertoire contains characters that may not be in current use, but which are nonetheless historically attested. The representative character glyphs are based upon the letterforms in *Pracalita Lipiyā Varņamālā* (Nepal Lipi Guthi, 1992). Characters not yet proposed for encoding are identified in Section 5.

Justification for Independent Encoding Although the Newar script has structural and graphical similarities to Devanagari, it is proposed for independent encoding on account of its rendering requirements. These include, but are not limited to, the combining and shaping behaviors of dependent vowel signs; the shaping of consonant-letter headstrokes in certain environments; and the contextual shaping of consonants in conjuncts. These are regular features of the Newar script and must be properly represented in plain text.

Font The Newar glyphs used here are based upon the 'Rabison' typeface developed by Rabison Shakya in 2002 for his *Nepala Lipi Varnamala: Alphabet of the Nepalese Script*. The present author has modified several of Shakya's original designs and added several new glyphs.

2 Background

Newar is a Brahmi-based script used for writing Newar (ISO 639-3: new), a Tibeto-Burman language spoken by 825,000 people in Nepal, predominantly in the Kathmandu Valley. The Newar language is known indigenously as नवाश लाय्/ नेवा: भाय् 'Newa Bhay' and in the Nepali language as नेपाल लाया/ नेपाल भाषा 'Nepal Bhasa'. Although it is called 'Nepal Bhasa', Newar is distinct from the Indo-Aryan language Nepali (ISO 639-3: nep), the official language of the Federal Democratic Republic of Nepal, which is known also as 'Gorkhali' and 'Khaskura'. Newar is the fifth most-spoken language in Nepal. It is also spoken by 14,000 people in the Indian state of Sikkim, where it is recognized by the Government of Sikkim as an official language of the state. The Newar language is currently written in Devanagari; however, the Newar script is being promoted as the written standard by various Newar organizations. The script is also used for writing Sanskrit and Nepali. It was used historically for writing Maithili, Bengali, and Hindi.

The Newar script is a descendent of Brahmi through the northern Gupta script. It related to Devanagari and has affinity to the Bengali and Tirhuta scripts. Tables that illustrate the evolution of Newar characters from Brahmi are shown in Figure 35. The Newar script is the modern and current form of the "even-headed" or "flat-headed" (पाचुमोल *pācumola*) script, which is one of three writing systems traditionally associated with Newar linguistic culture since the 10th century.

The script is known by several names: 'Nepal', 'Newar', 'Newari', 'Prachalit'. The first proper reference appears in the 1654 inscription of Pratap Malla (r. 1641–74) at Hanuman Dhoka in Durbar Square, Kathmandu (see figure 7), where it is referred to as नेवार आखर *nevāra ākhara* "Newar Script". The term नेवारी 'Nevari' / 'Newari' is first used in the 18th century by Capuchin monks and it enters into common usage in English in the early 19th century. Both 'Newar' and 'Newari' are derived from the Newar self-designation नेवा: *nevāḥ*. The first use of 'Nepal' for the name of the script was by Pannāprasāda Jośī in *Nepāla Deśyā Akṣarabodha* (1950), who called it नेपालाक्षर 'Nepal Akshar'. The epigraphist Hemarāja Śākyavamśa identified the script as थोंकन्हे प्रचलित लिपि 'Thaunkanhe Prachalit Akha' in *Nepāla Lipi Samgraha* (1953) and in *Nepāla Lipi-Prakāśa* (1973) he called it प्रचलित नेवारी लिपि 'Prachalit Newari Lipi', giving rise to 'Prachalit Lipi' or the "Current Script", which is name by which the script is most commonly known. The more indigenous name 'गवाश जाख? / नेवा: आख: 'Newa Akha' is also found. At present, the names प्रचलित नेपाल लिपि 'Prachalit Nepal Lipi' are promoted by Newar organizations. Both 'Newari' and 'Newar' are used in English, but the latter is the current scholarly designation for the language and script.

The Newar script has been used since its emergence in the 10th century. The first recorded use of the script is a manuscript of the *Lankāvatāra Sūtra*, which is dated 908 CE (see Figure 3). The script was actively used until the latter half of the 18th century, when Gorkha rule ended the reign of Newar dynasties in 1769. After that time, use of the Newar language and script began to decline. In 1905, the Rana government banned the use of both the Newar script and language. It imposed harsh discriminatory policies against the Newar language, including imprisonment and exile for those who studied the language and published in it. The ban was lifted in 1951 when Rana rule was brought to an end. However, the effects of the policies against the Newar language and Newar scholarship, in general, linger in the present.

In the latter half of the 20th century, several efforts were undertaken to revive and promote Newar linguistic traditions. Organizations were established for the preservation and study of the Newar script and manuscripts. The Nepal-German Manuscript Preservation Project (NGMPP) was a joint effort initiated in 1970 between His Majesty's Government of Nepal and the German Research Council (Deutsche Forschungsgemeinschaft). It operated until 2002 and produced nearly 180,000 manuscripts on microfilm. NGMPP was succeeded by the Nepalese-German Manuscript Cataloguing Project (NGMCP) in 2002 and continues to operate at the Nepal Research Centre in Kathmandu. Other efforts for the preservation of Newar manuscripts were launched by Asa Safu Kuthi, a private library in Kathmandu, who goal is to digitize Newar manuscripts. In the 1980s, Newars formed organizations to promote scholarship in the language and to revive usage of the script. Two organizations dedicated to the study, preservation, and promotion of the Newar script, as well as Ranjana, are the Nepal Lipi Guthi (Kathmandu) and Lipi Thapu Guthi (Lalitpur). Nepal Lipi Guthi has most actively promoted the script. It developed a standard for it in September 1989 under the advisement of leading Newar scholars. In March 2010, it convened the Nepal Lipi Encoding Committee in order to study approaches to encoding the Newar and Ranjana scripts in the UCS.

Some of the historical and current applications of the script are:

- 1. *Inscriptions* Nearly all inscriptions on stone, copper plates, and other materials from the 10th century until the establishment of the Shah regime in 1769 were produced in the Newar script (Kamal P. Malla, personal correspondence, 2011). See figures 4 and 7 for examples of Newar inscriptions.
- 2. *Coinage* The script appears on coins issued by Malla rulers until 1768 (see figures 5 and 6.
- 3. *Manuscripts* Nearly 30,000 manuscripts are written in the Newar script (Malla 1981: 23). The majority of these are manuscripts containing Sanskrit texts.
- 4. *Books* The first books were published in the Newar script by the Nepal Printing Press in the 1960s. Printing was performed using metal types commissioned by Pushpa Ratna Sagar.
- 5. Metal Fonts Printing technology for the script was first introduced in 1952 by Pushpa Ratna Sagar (Tuladhar 2009). Sagar commissioned Gyan Ratna Bajracharya to design the glyphs and sent the drawings to the Eastern Type Foundry in Kolkata, India. The first Newar typewriter was produced by Sagar in 1986. The glyphs were designed by Keshav Ratna Bajracharya and taken by Sagar to Allahabad, India where typebars were developed by the Characters Types foundry and fitted to a Remington typewriter.
- 6. *Literary Periodicals* Several literary journals and periodicals have been published in the Newar script during the past decade. The *Paubha* is a quarterly journal published by the Nepal Lipi Guthi, Kathmandu. The *Lipi Pau* is a monthly periodical (edited by Naresh Bir Shakya) published by Elohan Publications, Kathmandu (see figure 14). The *Thapu* is a literary annual (edited by Rajit Bahadur Shrestha) published by Lipi Thapu Guthi, Lalitpur.
- 7. *Government Publications* The script is used in official government publications. In Sikkim, it is used for the Newar-language edition of the government bulletin titled *Sikkim Herald* (sub-editor Meena Pradhan), published by the Department of Information and Public Relations, Government of Sikkim.
- 8. *Ephemera* The script is used on cover pages of books, the masts of newspapers, greeting cards, invitations, banners, and in signage.
- 9. Digital Publications Activities aimed at the use and preservation of the Newar script and language are currently conducted in digital media. "Nepal Lipi Online" নিম নলাইল publishes an annual supplement in the script, which is distributed in Portable Document Format (PDF).
- 10. Digitized Typefaces Several digitized Newar typefaces are used for print and digital publications (see tables 2–5 for a comparison). The first was developed by Sunil Maharjan in 1994 for Navin Press. Subhash Printing Press produced "Newa Regular" in 1999. A third font was designed in 2000 by Rabindra Pachhai for Nepal Lipi Guthi. Also in 2000, 'Rabison Nepal Lipi' was produced by Rabison Shakya. These were followed by the 'Kumari' font, designed by Rajendra Shrestha, and 'Swati' by Samir Karmacharya. All fonts are based upon legacy encodings. The most recent is 'Aakha', developed by Suwarn Vajracharya and a team of designers.

Although Newar users have adapted the script for use in digital platforms, the solutions do not allow for the representation of the Newar script in plain text. The lack of a Unicode standard for Newar impedes its use in basic computing activities, such as writing e-mails, creating websites, and in digital publishing, as well as in larger scale efforts such as localization and internationalization. There are several organizations dedicated to the preservation of Newar manuscripts and to the promotion of the Newar language and scripts. An encoding for Newar in the UCS will provide the foundation for developing the necessary resources to support such efforts and to meet the needs of the Newar community in Nepal, Sikkim, and around the globe.

3 Description of the Encoding

3.1 Structure

The general structure (phonetic order, *mātrā* reordering, use of *virāma*, etc.) of Newar is similar to that of Devanagari. It is written from left-to-right. Certain consonant-vowel combinations are written as ligatures; certain vowel signs modify the graphical structure of the consonants with which they combine. Consonant clusters are represented as conjuncts and independent ligatures.

3.2 Virāma

The Newar \bigcirc VIRAMA is identical to the Devanagari VIRAMA. It is used for silencing the inherent vowel of a consonant and for producing conjuncts. The default rendering of VIRAMA is as a visible sign.

3.3 Vowels

There are 14 vowel letters proposed for encoding:

স্	Α	उ	U	C	VOCALIC L	31	0
স্	AA	স	UU	q	VOCALIC LL	ॲॊ	AU
<u>.</u>	I	¥	VOCALIC R	1	Е		
જી	II	¥	VOCALIC RR	শ	AI		

Except for $\overline{\mathfrak{A}}$, each vowel letter is written as a dependent sign when it is not initial.

3.4 Vowel Signs

There are 13 dependent vowel signs proposed for encoding:

া	VOWEL SIGN AA	ূ	VOWEL SIGN VOCALIC R	्र	VOWEL SIGN AI
િ	VOWEL SIGN I	ૣ	VOWEL SIGN VOCALIC RR	শ	VOWEL SIGN O
ါ	VOWEL SIGN II	ৢ	VOWEL SIGN VOCALIC L	ৗ	VOWEL SIGN AU
্	VOWEL SIGN U	ৢ	VOWEL SIGN VOCALIC LL		
ু	VOWEL SIGN UU	~	VOWEL SIGN E		

Vowel length Vowel length is typically indicated using dependent vowel signs. However, the sign *visarga* is also used for marking vowel length (see Section 3.9).

Shaping behavior The i vowel sign e, i vowel sign AI, i vowel sign o, i vowel sign AU replace the headstroke of consonants with which they combine.

Contextual forms The I vowel sign as $\tilde{\circ}$ vowel sign e, $\tilde{\circ}$ vowel sign ai, $\tilde{\circ}$ vowel sign o, $\tilde{\circ}$ vowel sign au are written using contextual forms when combined with the consonants \mathfrak{I} GA, \mathfrak{B} NYA, \mathfrak{O} TTHA, \mathfrak{I} NNA, \mathfrak{P} THA, \mathfrak{P} DHA, \mathfrak{P} SHA. The shaping behavior is described in Section 3.6.

Category values General category and Indic matra category values are based upon the regular vowel signs, not the contextual forms (see Section 6.4).

3.5 Consonants

There are 33 consonant letters proposed for encoding:

ক	KA	R	NYA	ध	DHA	ल	LA
ख	KHA	र	ТТА	ন	NA	व	VA
ગ	GA	0	TTHA	य	PA	শ	SHA
ঘ	GHA	ত	DDA	रू	PHA	ष	SSA
	NGA	ਫ	DDHA	व	BA	स	SA
च	СА	ଣ	NNA	হ	BHA	ह	HA
क्ष	СНА	ባ	ТА	म	МА		
ব	JA	થ	THA	य	YA		
म	JHA	द	DA	ন	RA		

Each consonant letter bears the inherent vowel /a/, represented by 河 А, which is silenced using ् VIRAMA.

'Headed' and 'headless' letters Consonants are classified into two categories based upon their graphical structure: those with a headstroke (भालय moladu 'headed') and those without (भालमय molamadu 'headless'). There are 7 letters without a head-stroke: 키GA, अNYA, OTTHA, 키NNA, 키THA, 키DHA, 키SHA. When these letters are combined with certain vowel signs, the signs are written using contextual forms (see Section 3.6).

Consonant conjuncts Consonant clusters are written as conjuncts (see Section 3.7).

Contextual forms Two letters have contextual forms when they occur in certain consonant-vowel combinations: $\overline{0}$ BHA $\rightarrow \overline{1}$; $\overline{5}$ HA $\rightarrow \overline{5}$ (see Section 3.6).

Variant forms Several letters have glyphic variants, which are to be managed through fonts: $\Im = \Im_{GA}$; $\overline{\Im} = \Im_{HA}$; $\overline{\Im} = \Im_{NYA}$; $\overline{\Im} = \Im_{RA}$; $\Im = \Im_{SHA}$.

'Resonant breathy' consonants The glyphs \overline{a} , $\overline{a$

breathy' sounds of Newar. Thus, while the base letter of \overline{a} hna is \overline{b} HA, it may be parsed as either /hna/ or /nha/ depending on its lexical environment. These glyphs are to be treated as conjuncts and are to be represented with \overline{b} HA as the initial consonant. The tables below show the correct sequences for conjuncts with HA in initial and non-initial positions:

Initial на			Non-initial HA			
<ह _{HA} , ्, ढ _{NGA} >	ୟ	hňa	<ढ _{NGA,} ्, ह _{HA} >	Se	'nha	
<ह на, ्, ३ NYA>	ፍ	hña	< ३ NYA, ्, ह HA>	રૂ	ñha	
<ह _{HA} , ्, १ _{NNA} >	ନ୍ଥ	hṇa	<ध NNA, ्, ह HA>	ព្	hṇa	
<ह _{НА,} ्, न _{NA} >	দ্ধ	hna	<ग _{NA,} ्, ह _{HA} >	नू	nha	
<ह _{НА,} ्, म _{МА} >	ፋ	hma	<म MA, ्, ह HA>	मू	mha	
<ह на, ्, 7 ra>	ፍ	hra	<न _{RA,} ्, ह _{HA} >	ॠ	rha	
<ह HA, ्, ल LA>	দ্ধ	hla	<ल LA, ्, ह HA>	लू	lha	

The use of HA-initial conjuncts for writing 'resonant breathy' consonants distorts the original meaning of these glyphs. If users intend to write such letters using HA-initial conjuncts, then the font must render both HA-initial and HA-non-initial clusters using identical conjunct glyphs.

3.6 Consonant-Vowel Combinations

Consonant-vowel (CV) combinations are produced by attaching a dependent-vowel sign to a consonant letter. Combinations involving certain consonants have additional rendering requirements, as do those involving certain vowel signs. The cases described below are normal behaviors for the script.

'Wavy-headed' signs The $\tilde{\circ}$ vowel sign E, $\tilde{\circ}$ vowel sign AI, $\tilde{\circ}$ vowel sign O, $\tilde{\circ}$ vowel sign AU have wavy headstrokes. When they combine with a 'headed' consonant, the consonant's headstroke is removed: $\langle \overline{\mathfrak{T}} | KA, \tilde{\circ} \rangle$ vowel sign $E > \rightarrow \langle (\overline{\mathfrak{T}} \rightarrow \mathfrak{T}), \tilde{\circ} \rangle \rightarrow \mathfrak{T} ke$. These signs are to be rendered in a font using a glyph substitution rule for the consonant glyph that specifies the following vowel as a contextual constraint.

Contextual forms for 'headless' consonants When a 'wavy-headed' vowel sign or vowel SIGN AA is combined with a 'headless' consonant, the vowel sign is written using a contextual form. The contextual forms of vowel SIGN AI, vowel SIGN O, and vowel SIGN AU are two-part vowel signs.

	Regular	Contextual	Occurs with
VOWEL SIGN AA	া	া	গ GA, अ NYA, O TTHA, १ NNA, थ THA, ४ DHA, भ SHA
VOWEL SIGN E	\sim	ে	গ GA, 33 NYA, O TTHA, গ NNA, থ THA, ધ DHA, শ SHA
VOWEL SIGN AI	्र	े	গ GA, 33 NYA, O TTHA, গ NNA, ધ THA, ધ DHA, শ SHA
VOWEL SIGN O	শ	(া	গ GA, 33 NYA, O TTHA, গ NNA, ધ THA, ધ DHA, শ SHA
VOWEL SIGN AU	ল	ৌ	গ GA, স NYA, O TTHA, গ NNA, থ THA, ધ DHA, শ SHA

Examples: $\langle \mathfrak{I} | \operatorname{GA}, \mathfrak{I} | \operatorname{VOWEL SIGN AA} \rangle \rightarrow \langle \mathfrak{I}, (\mathfrak{I} \rightarrow \mathfrak{I}) \rangle \rightarrow \mathfrak{I} | g\bar{a}; \langle \mathfrak{I} | \operatorname{GA}, \mathfrak{I} | \operatorname{VOWEL SIGN E} \rangle \rightarrow \langle \mathfrak{I}, (\mathfrak{I} \rightarrow \mathfrak{I}) \rangle \rightarrow \langle \mathfrak{I} | ge.$

Contextual forms of other signs The following vowel signs change shape when they occur in CVs with particular consonants:

	Regular	Contextual	Occurs with
VOWEL SIGN U	৾৻	ु	গ GA, T TA, ए BHA, भ SHA

Contextual forms of consonant letters In addition to the above, the shapes of some consonant letters are modified before combining with certain vowel signs:

	Regular	Contextual	Occurs with
BHA	হ	ग	ੂ vowel sign u, ੍ਰ vowel sign uu, ੍ਰ vowel sign vocalic r,
			ू VOWEL SIGN VOCALIC RR ू VOWEL SIGN VOCALIC L,
			ू VOWEL SIGN VOCALIC LL
HA	ह	ন্ধ	੍ vowel sign u, ੍ਰ vowel sign uu, ੍ਰ vowel sign vocalic r,
			္ vowel sign vocalic RR ္ vowel sign vocalic l,
			ू VOWEL SIGN VOCALIC LL

Ligatures The following CV combinations are written as ligatures:

LigatureEncoded Representation $\overline{\mathfrak{A}}ju$ $<\overline{\mathfrak{A}}$ JA, \bigcirc VOWEL SIGN U> $\overline{\mathfrak{A}}ju$ $<\overline{\mathfrak{A}}$ JA, \bigcirc VOWEL SIGN UU> $\overline{\mathfrak{A}}ru$ $<\overline{\mathfrak{A}}$ RA, \bigcirc VOWEL SIGN U> $\overline{\mathfrak{R}}ru$ $<\overline{\mathfrak{A}}$ RA, \bigcirc VOWEL SIGN U>

3.7 Consonant Conjuncts

Consonant clusters are written as conjuncts. Conjuncts are represented using VIRAMA, which is written after each consonant in a cluster. Newar conjuncts are written vertically, horizonally, and as independent ligatures.

3.7.1 Rendering Rules

Conjuncts are rendered using condensed, half, post-base, and full forms of letters, as well as independent ligatures (see Table 1). Condensed forms are used for writing vertical conjuncts. A condensed form is produced by reducing the size of a letter's body. If present, the right descender may also be adjusted vertically

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		Init	ial	Non-i	nitial			Ini	tial	Non-i	nitial
		Cond	Half	Cond	Post			Cond	Half	Cond	Post
KA	ক	क		ণ		DA	द	द	_	પ	_
КНА	ख	ख	रू	ख		DHA	ધ	ધ	JU	ग्र	_
GA	ป	গ	2	গ		NA	ন	ন	<u> </u>	ન	_
GHA	घ	घ	र	ਜ਼		РА	प	प	τ	ਹ	_
NGA	2	2		6		РНА	रू	रू	_	to	_
CA	च	ব	ट	ঘ		BA	व	व	<u>c</u>	ব	_
СНА	ऋ	ऊ		R		BHA	হ	ſ	4	Q	_
JA	ব	শ	_	ა		МА	म	म	Ł	ᆔ	_
JHA	म	म	र	거		YA	य	य	र	고	_
NYA	<u> </u>	ગર	_	ગર		RA	ন	_	<u>~</u> , °	শ	_
TTA	र	ट	_	હ		LA	ल	ल	$\overline{\gamma}$	ন্দ	_
TTHA	0	0	_	٥		VA	व	व	<u>c</u>	ব	_
DDA	ত	ত	_	٥		SHA	ъĄ	М	8	ъ	_
DDHA	ਫ	ढ	_	ч		SSA	ष	ष	रु	٦	_
NNA	શ	ମ	હ		c	SA	स	स	रू	t 1	_
ТА	ባ	ন	C	_	า	НА	ह	ব		٤	_
THA	થ	થ	શ	—	Ф						

Table 1: Forms of consonant letters used in initial and non-initial positions in conjuncts. 'Cond' = condensed form; 'Half' = half-form; 'Post' = post-base form.

depending upon the position of the letter in the cluster. Half-forms are used for writing horizontal conjuncts. Half-forms are generally used only for consonants with right descenders. A half-form is produced by removing the right descender. Post-base forms are contextual forms of letters that are used only when the letter occurs in a non-initial position.

The shape of a consonant in a conjunct is determined by its structure, namely the presence of a headstroke and the number of edges that touch the head height.

General conjunct formation Below are the general rules for conjunct formation. Ligatures and exceptions are noted in the next paragraph.

- 1. Single edge with descender This group includes the 'headed' letters $\overline{\P}$ KA, $\overline{\eta}$ GA, $\overline{\P}$ CA, $\overline{\eta}$ TA, $\overline{\P}$ NA, $\overline{\P}$ BA, $\overline{\overline{\P}}$ PHA, $\overline{\overline{\P}}$ RA, $\overline{\overline{\eta}}$ LA, $\overline{\overline{\P}}$ VA and the 'headless' letters $\overline{\overline{\P}}$ NNA, $\overline{\overline{\P}}$ SHA.
 - Join at the top and bottom terminals of the descender: $\langle \overline{\eta} | KA, \overline{\langle}, \overline{q} | VA \rangle \rightarrow \overline{\mathfrak{n}} | kva; \langle \overline{\eta} | KA, \overline{\langle}, \overline{c} | TTA \rangle \rightarrow \overline{\mathfrak{N}} | kta; \langle \overline{\eta} | GA, \overline{\langle}, \overline{\eta} | RA \rangle \rightarrow \mathfrak{N} | gra; \langle \overline{\eta} | SHA, \overline{\langle}, \overline{q} | CA \rangle \rightarrow \mathfrak{N} | sca; \langle \overline{\eta} | LA, \overline{\langle}, \overline{\eta} | LA \rangle \rightarrow \overline{\mathfrak{n}} | la.$
 - The letters KA, NNA, TA, RA have exceptional behaviors.
- 2. Single edge without descender This group includes the 'headed' letters Z NGA, Z CHA, J JA, Z TTA, J DDA, Z DDHA, Z DDHA, F HA and the 'headless' letters R NYA, O TTHA,
 - Join to following letters at bottom center: $\langle \overline{a} CHA, \mathbb{Q}, \overline{\exists} RA \rangle \rightarrow \overline{a} chra; \langle \mathfrak{B} NYA, \mathbb{Q}, \overline{\exists} CA \rangle \rightarrow \mathfrak{F}$ *ñca*.
 - Join to preceding letters at the top-most edge: $\langle \overline{4} \text{ DA}, \langle, \overline{4} \text{ DA} \rangle \rightarrow \overline{\underline{3}} dda$.
 - The letters JA and HA have exceptional behavior.
- 3. *Multiple edges* This group includes the 'headed' letters 적 кна, 되 GHA, 키 JHA, 키 PA, 키 MA, 키 YA, 키 ssa, 치 sa and the 'headless' letters 키 THA, 비 DHA
 - Join to following letters at the bottom terminal of the right descender: $\langle \overline{\P} MA, \mathbb{Q}, \overline{\P} BA \rangle \rightarrow \overline{\P} mba$, $\langle \overline{\P} MA, \mathbb{Q}, \mathfrak{B} NYA \rangle \rightarrow \overline{\P}, m\tilde{n}a. \langle \overline{\P} SA, \mathbb{Q}, \overline{\P} KA \rangle \rightarrow \overline{\P}, ska.$
 - Join to preceding letters at the top edge of the lowered left descender: $\langle \overline{n} | LA, \langle, \overline{4} | MA \rangle \rightarrow \overline{\mathbb{T}} | LMA; \langle \overline{n} | LA, \langle, \overline{4} | YA \rangle \rightarrow \overline{\mathbb{T}} | lya; \langle \mathfrak{R} | NYA, \langle, \overline{4} | JHA \rangle \rightarrow \Re \tilde{n}jha; \langle \overline{4} | MA, \langle, \overline{4} | YA \rangle \rightarrow \overline{\mathbb{T}} mya; \langle \overline{\mathfrak{T}} | SA, \langle, \overline{4} | PA \rangle \rightarrow \overline{\mathbb{T}} spa; \langle \overline{\mathfrak{T}} | SA, \langle, \overline{4} | MA \rangle \rightarrow \overline{\mathbb{T}} sma.$
 - The letter THA has exceptional behavior.
 - When a 'headless' letter is followed by a multiple-edged 'headed' letter (য় KHA, য় GHA, য় JHA, য় PA, য় MA, য় SA, য় SSA, য় YA), the head-stroke of the latter is removed and replaced by a short diagonal stroke (*svāphuti*) that connects the two letters. This stroke originates at the right top edge of the 'headless' letter and extends through the body of the 'headed' letter and connects to its right descender at 3/4 of the stem height. For example, <য় GA, Q, য় YA> → য় gya; <য় DHA, Q, য় MA> → য় dhma. The use of contextual forms of vowel signs with 'headless' letters is discussed in Section 3.6. The same rules for these signs pertain to 'headless' letters when they appear as the base letter in conjuncts.

Independent ligatures The clusters ksa and $j\tilde{n}a$ are rendered as distinct ligatures: $\langle \mathfrak{T} | KA, \mathbb{Q}, \mathfrak{T} | SSA \rangle \rightarrow \mathfrak{F}$ $ksa; \langle \mathfrak{T} | JA, \mathbb{Q}, \mathfrak{R} | NYA \rangle \rightarrow \mathfrak{F} j\tilde{n}a.$ *Exceptions* Certain consonants have other shaping behaviors when they occur in conjuncts:

- 1. $\overline{\mathfrak{h}}$ KA When initial, KA takes the shape $\overline{\mathfrak{h}}$. When followed by a consonant with two descenders, KA is written 'around' the condensed form of the letter, with its right 'arm' extending through the following letter: $\langle \overline{\mathfrak{h}} | KA, \mathbb{Q}, \overline{\mathfrak{h}} | MA \rangle \rightarrow (\overline{\mathfrak{h}}, \mathbb{Q}, \overline{\mathfrak{h}}) \rightarrow \overline{\mathfrak{h}} kma$.
- 2. $\overline{\mathfrak{A}}$ JA When initial, JA is written as $\overline{\mathfrak{A}}$: $\overline{\mathfrak{A}}$ JA, \mathbb{Q} , $\overline{\mathfrak{A}}$ vA $\rightarrow \overline{\mathfrak{A}}$ *jva*. When followed by a consonant with two descenders, JA is written 'around' the condensed form of the letter, with its right 'arm' extending through the following letter: $\langle \overline{\mathfrak{A}} \rangle \mathcal{A}, \mathbb{Q}, \overline{\mathfrak{A}} \rangle \rightarrow (\overline{\mathfrak{A}}, \mathbb{Q}, \overline{\mathfrak{A}}) \rightarrow \overline{\mathfrak{A}}$ *jma*.
- 3. \forall NNA When non-initial, NNA is rendered as \mathfrak{g} , eg. $\langle \overline{\mathfrak{q}} \rangle$ SSA, \mathfrak{g} , ϑ NNA> $\rightarrow \overline{\mathfrak{q}}$, $\mathfrak{g} \mathfrak{g} \mathfrak{g} \mathfrak{g} \mathfrak{g} \mathfrak{g}$.
- 4. \P TA When initial TA is followed by \P KA or \P SA it is written as \bigcirc , eg. $<\P$ TA, \bigcirc , \P SA> = \P tsa. When non-initial, it is written as $<\bigcirc$: \P NA, \bigcirc , \P TA> = \P nta. When written as a geminate, a VIRAMA is added to the glyph: $<\P$ TA, \bigcirc , \P TA> $\rightarrow \P$ tta.
- 5. \forall THA When THA is non-initial, it is rendered as \oplus , eg. \forall SA, \bigcirc , \forall THA $\rightarrow \forall$ stha.
- 6. ∃ RA The default shape when initial is the half form ¬. When initial in non-Newar words, it is written as *repha* <∃ RA, *virama*, *wist* zwj>. The behavior of initial RA is similar to Devanagari ₹ RA, but the rendering is opposite: the default shape corresponds to the 'eyelash repha', while the representation with zwj corresponds to the normal Devanagari *repha*. Non-initial RA is rendered as *g*: ∃*pra*, *g thra*; there are no *vattu* variants.
- 7. \mathfrak{F} HA When initial, HA is written as \mathfrak{F} . Non-initial letters are written within the lower left curve. When followed by a consonant with two descenders, the right 'arm' of HA is extended through the non-initial letter: \mathfrak{F} HA, \mathfrak{Q} , \mathfrak{P} MA $\rightarrow (\mathfrak{F}, \mathfrak{Q}, \mathfrak{A}) \rightarrow \mathfrak{F}$ hma. See also the discussion of 'resonant breathy' letters using HA-initial conjuncts in Section 3.5.

Orientation The current preference is for producing vertical conjuncts; however, manuscript sources show a variety of orientations, such as horizontal and cascading. Variations in orientation generally occur with letters that possess right descenders, eg. $\langle \overline{1} \rangle NA$, \Diamond , $\overline{4} \rangle DA \rangle$ may be written as $\overline{3}$ and $\overline{4}$. Conjuncts may also be written horizontally when clusters contain more than two consonants, eg. $\langle \overline{1} \rangle NA$, \Diamond , $\overline{4} \rangle DA$, \Diamond , $\overline{7} \rangle DA$, $\overline{7}$

Explicit half forms Explicit half forms may be produced by writing $\boxed{2}$ U+200D ZERO WIDTH JOINER after VIRAMA, eg. \lhd NA, \diamondsuit , $\boxed{2}$ ZWJ> $\rightarrow \overline{c}$.

Font requirements for the rendering of conjuncts It is expected that a basic Newar font will contain the necessary glyphs for representing conjuncts. A consonant cluster is depicted with the appropriate conjunct glyph only if such a glyph is available in the font. If the conjunct glyph is unavailable, the bare consonants in the cluster are depicted using their full forms combined with a visible VIRAMA. While such rendering of conjuncts may not be typical, they are necessary for the representation of the script in plain text.

3.8 Digits

Newar has a full set of decimal digits: \circ ZERO, ? ONE, ? TWO, ? THREE, ? FOUR, \Im FIVE, \$ SIX, \Im SEVEN, \pounds EIGHT, ? NINE. The following glyphic variants are attested: ? = ? THREE; ? = ? FOUR; $\$ = \Im$ FIVE. These variants are to be managed through fonts.

3.9 Various signs

The following 6 signs proposed for encoding:

- 1. ČCANDRABINDU The *candrabindu* is used for indicating nasalization. The variant form is attested.
- 2. [°] ANUSVARA The *anusvāra* is used for indicating nasalization. The variant form [°] is also attested. The ANUSVARA is placed at the right edge of the character with which it is combined.
- 3. \$ vISARGA This sign represents post-vocalic aspiration (/h/). The variant forms \because and \textdegree are attested. The vISARGA is also used for marking vowel length (see Section 3.4).
- 4. NUKTA This sign is used for transcribing sounds for which distinct characters do not exist, such as those in loanwords. See figure 44 for example of use.
- 5. 4 AVAGRAHA This sign is used for marking the elision of word-initial $\overline{\Im} a$ in Sanskrit as a result of sandhi. An example of use is given in figure 48. The Devanagari-like variant form \Im is attested.
- 6. ; FINAL ANUSVARA The FINAL ANUSVARA sign has various uses (see figures 37 and 38). In some manuscripts it represents nasalization; it corresponds graphically to $\Im U+0982$ BENGALI SIGN ANUSVARA. In other sources, it is used as a form of punctuation. It has the variant forms ; and \Im .

3.10 Punctuation

The following punctuation characters are proposed for encoding. See Section 5 for questions regarding the encoding of additional punctuation marks.

- 2. COMMA and COUBLE COMMA The Newar COMMA is used as a phrase separator, while the DOUBLE COMMA is used for marking the end of sentences.
- GAP FILLER This sign is used for marking breaks and filling gaps in a line at a margin (see figure 47). It has several variant forms: ², ³, ², ², ², ², ³, ⁵ (see also figure 50). Examples of use of variant forms are given in figures 42 and 43.
- 4. HIGH SPACING DOT This sign is used for inter-word and intra-word spacing.
- 5. ABBREVIATION SIGN CIRCLE This sign is used for indicating abbreviation (see figure 46).
- 6. × ABBREVIATION SIGN CROSS This sign is used for indicating abbreviation.

The following punctuation character is not proposed for encoding:

1. • The • middle dot is often used in manuscripts for marking word and other boundaties (see figure 45). This character may be written using the generic \cdot U+00B7 MIDDLE DOT.

3.11 Invocation Signs

The following 3 invocation signs are proposed for encoding:

- 1. รั้ ом This sign represents the sacred syllable *om*. It is also written literally using the sequence < ั o, ் CANDRABINDU> as ปี้.
- 2. \$ SIDDHI This sign represents the Sanskrit invocation सिद्धिरस्तु *siddhirastu* "may there be success". It is written at the beginning of a text, often with \$ OM, eg. \$\$. It corresponds to the sign $\P \ \bar{a}\tilde{n}j\bar{i}$ in related scripts such as Bengali.
- 3. svASTI This sign represents the Sanskrit benediction स्वस्ति *svasti* "may it be auspicious". It has several glyphic variants, eg. •.

3.12 Ornamental Marks

The following ornamental marks are proposed for encoding:

- 1. \bigotimes FLOWER This sign is used for marking the end of text sections (see figures 40 and 41).
- 2. ENG VAJRA This sign is used for marking the end of text sections.
- 3. ••• PLACEHOLDER MARK This sign is used for filling gaps in a line and as a mark for end of text.

The following space-filling character is not proposed for encoding:

1. Э. This sign is used for marking ends of sections and as a space-filling mark (see figure 41). It corresponds to © U+A8F8 DEVANAGARI SIGN PUSHPIKA. It may be represented using the Devanagari character.

3.13 Collation

The primary sort order for Newar is as follows:

The following have secondary weights: CANDRABINDU, ANUSVARA, VISARGA, NUKTA.

4 Other Details

Kūtākṣara Kūtākṣara-s, or monograms, are calligraphic presentations of words or consonant sequences that written as a single ligature (see figures 9 and 10). These are presentation forms of text sequences. They are out of scope for character encoding and representation in plain text.

Headstrokes and Headlines The headstrokes of Newar letters do not connect to preceding or following letters. Connection of headstrokes of characters that form a syllable may occur, such as in the combination of a consonant letter and a dependent vowel sign. The majority of Newar manuscripts attest this behavior. However, there is no particular rule that describes the joining properties of headstrokes. Variations in the writing of headstrokes are to be attributed to scribal preferences. In modern digitized typefaces the headstrokes of glyphs connect, but this feature may be an influence of modern Devanagari typography.

5 Characters Not Proposed

Several characters attested in Newar manuscripts are not yet proposed for encoding. Some of these characters are described below, along with the rationale for excluding them from the proposed encoding.

- 1. *Punctuation* The characters **I** and **I** are used in some manuscripts for marking the ends of passage, section, or larger blocks of text. They are used alongside **I** DOUBLE DANDA (see figure 39). They are also used at the end of section in conjunction with the [∞] FLOWER as **I** [∞] [∞] **I** (see figure 40). These 'arrow' *dandā*-s have the glyphic variants *I*, **I** and *I*, *I*.
- 2. 'Letter-Numerals' A numeration system using letter-like characters instead of regular digits is used in several Old Newar manuscripts (see figure Figure 52). There are at least 27 such Newar 'letternumerals': units (1–9), tens (10–90), and the hundreds up to 400. In many cases, the number forms are used alongside digits; see the Kāranḍavyūha published by Lokesh Chandra (1981). There are several variant forms and many letter-numbers resemble those of other scripts, such as Brahmi. It may be possible to unify Newar letter-numbers with corresponding Brahmi characters.
- 3. *Editorial Marks* Various editorial marks are used in manuscripts for indicating the addition (, ,) and deletion () of text, as well as omissions, eg. * *kākapada*. Several such characters are shown in Figure 50. Should editorial marks be encoded on a per script basis or would be it reasonable to unify such marks in a pan-Indic block?
- 4. *Additional Ornaments* There are several characters similar to the proposed \approx FLOWER (see figure 51). Should these be encoded separately or unified with NEWAR FLOWER, where applicable?
- Musical Symbols Several symbols are used in Bajanbol manuscripts for music notation (see figure 11). Marks used for indicating rests of various lengths for drums include ○, ⊕, ⊕, ⊙, ⊙, Ô (Lienhard 1988: 142–143). Other symbols are ⁶, ⁹, ², ¹. Additional research is required in order to determine the number of such marks, their meanings, and the status of their usage.
- 6. *Newly-Created Vowel Signs* The sign ⁷ has been promoted by some Newar users as a new addition for representing the vowel /æ/ (see Figure 53). The vowel exists in the Newar language, but it is not distinctly represented in the script or in Devanagari orthography for the language.

6 Character Data

6.1 Character Properties

The properties for Newar in the Unicode Character Database format are:

```
11400; NEWAR LETTER A; Lo; 0; L;;;;; N;;;;;
11401; NEWAR LETTER AA; Lo; 0; L;;;;; N;;;;;
11402; NEWAR LETTER I; Lo; 0; L;;;;; N;;;;;
11403; NEWAR LETTER II; Lo; 0; L;;;;; N;;;;;
11404; NEWAR LETTER U; Lo; 0; L;;;;; N;;;;;
11405; NEWAR LETTER UU; Lo; 0; L;;;;; N;;;;;
11406; NEWAR LETTER VOCALIC R; Lo; 0; L;;;;; N;;;;;
11407; NEWAR LETTER VOCALIC RR; Lo; 0; L;;;;; N;;;;;
11408; NEWAR LETTER VOCALIC L; Lo; 0; L;;;;; N;;;;;
11409; NEWAR LETTER VOCALIC LL; Lo; 0; L;;;;; N;;;;;
1140A; NEWAR LETTER E; Lo; 0; L;;;;; N;;;;;
1140B; NEWAR LETTER AI; Lo; 0; L;;;;; N;;;;;
1140C; NEWAR LETTER 0; Lo; 0; L; ;; ;; N; ;; ;;
1140D; NEWAR LETTER AU; Lo; 0; L;;;;; N;;;;;
1140E; NEWAR LETTER KA; Lo; 0; L;;;;; N;;;;;
1140F; NEWAR LETTER KHA; Lo; 0; L;;;;; N;;;;;
11410; NEWAR LETTER GA; Lo; 0; L;;;;; N;;;;;
11411; NEWAR LETTER GHA; Lo; 0; L;;;;; N;;;;;
11412; NEWAR LETTER NGA; Lo; 0; L;;;;; N;;;;;
11413; NEWAR LETTER CA; Lo; 0; L;;;;; N;;;;;
11414; NEWAR LETTER CHA; Lo; 0; L;;;;; N;;;;;
11415;NEWAR LETTER JA;Lo;0;L;;;;;N;;;;;
11416; NEWAR LETTER JHA; Lo; 0; L;;;;; N;;;;;
11417; NEWAR LETTER NYA; Lo; 0; L;;;;; N;;;;;
11418; NEWAR LETTER TTA; Lo; 0; L;;;;; N;;;;;
11419; NEWAR LETTER TTHA; Lo; 0; L;;;;; N;;;;;
1141A; NEWAR LETTER DDA; Lo; 0; L;;;;; N;;;;;
1141B; NEWAR LETTER DDHA; Lo; 0; L;;;;; N;;;;;
1141C; NEWAR LETTER NNA; Lo; 0; L;;;;; N;;;;;
1141D; NEWAR LETTER TA; Lo; 0; L;;;;; N;;;;;
1141E; NEWAR LETTER THA; Lo; 0; L;;;;; N;;;;;
1141F; NEWAR LETTER DA; Lo; 0; L;;;;; N;;;;;
11420; NEWAR LETTER DHA; Lo; 0; L;;;;; N;;;;;
11421; NEWAR LETTER NA; Lo; 0; L;;;;; N;;;;;
11422;NEWAR LETTER PA;Lo;0;L;;;;;N;;;;;
11423; NEWAR LETTER PHA; Lo; 0; L;;;;; N;;;;;
11424; NEWAR LETTER BA; Lo; 0; L;;;;; N;;;;;
11425; NEWAR LETTER BHA; Lo; 0; L;;;;; N;;;;;
11426; NEWAR LETTER MA; Lo; 0; L;;;;; N;;;;;
11427; NEWAR LETTER YA; Lo; 0; L;;;;; N;;;;;
11428; NEWAR LETTER RA; Lo; 0; L;;;;; N;;;;;
11429; NEWAR LETTER LA; Lo; 0; L;;;;; N;;;;;
1142A; NEWAR LETTER VA; Lo; 0; L;;;;; N;;;;;
1142B; NEWAR LETTER SHA; Lo; 0; L;;;;; N;;;;;
1142C; NEWAR LETTER SSA; Lo; 0; L;;;;; N;;;;;
1142D; NEWAR LETTER SA; Lo; 0; L;;;;; N;;;;;
1142E; NEWAR LETTER HA; Lo; 0; L;;;;; N;;;;;
1142F;NEWAR VOWEL SIGN AA;Mc;0;L;;;;;N;;;;;
11430; NEWAR VOWEL SIGN I; Mc; 0; L;;;;; N;;;;;
11431; NEWAR VOWEL SIGN II; Mc; 0; L;;;;; N;;;;;
11432; NEWAR VOWEL SIGN U; Mn; 0; NSM; ;; ;; N; ;; ;;
11433; NEWAR VOWEL SIGN UU; Mn; 0; NSM;;;;; N;;;;
11434; NEWAR VOWEL SIGN VOCALIC R; Mn; 0; NSM; ;; ;; N; ;; ;;
11435; NEWAR VOWEL SIGN VOCALIC RR; Mn; 0; NSM; ;; ;; N; ;; ;;
```

```
11436; NEWAR VOWEL SIGN VOCALIC L; Mn; 0; NSM; ;; ;; N; ;; ;;
11437; NEWAR VOWEL SIGN VOCALIC LL; Mn; 0; NSM; ;; ;; ; N; ;; ;
11438; NEWAR VOWEL SIGN E; Mn; 0; NSM; ;; ;; N; ;; ;;
11439; NEWAR VOWEL SIGN AI; Mn; 0; NSM; ;;;; N; ;;;
1143A; NEWAR VOWEL SIGN O; Mc; 0; L;;;;; N;;;;;
1143B; NEWAR VOWEL SIGN AU; Mc; 0; L;;;;; N;;;;;
1143C; NEWAR SIGN VIRAMA; Mn; 9; NSM; ;; ;; N; ;; ;;
1143D; NEWAR SIGN CANDRABINDU; Mn; 0; NSM; ;; ;; N; ;; ;;
1143E; NEWAR SIGN ANUSVARA; Mn; 0; NSM; ;; ;; N; ;; ;;
1143F;NEWAR SIGN VISARGA;Mc;0;L;;;;;N;;;;;
11440; NEWAR SIGN NUKTA; Mn; 7; NSM; ;; ;; N; ;; ;;
11441;NEWAR SIGN AVAGRAHA;Lo;0;L;;;;;N;;;;;
11442; NEWAR SIGN FINAL ANUSVARA; Lo; 0; L;;;;; N;;;;;
11443;NEWAR OM;Lo;0;L;;;;;N;;;;;
11444; NEWAR SIDDHI; So; 0; L;;;;; N;;;;;
11445; NEWAR SVASTI; So; 0; L;;;;; N;;;;;
11446; NEWAR DANDA; Po; 0; L;;;;; N;;;;;
11447; NEWAR DOUBLE DANDA; Po; 0; L;;;;; N;;;;;
11448;NEWAR COMMA;Po;0;L;;;;;N;;;;;
11449; NEWAR DOUBLE COMMA; Po; 0; L;;;;; N;;;;;
1144A; NEWAR GAP FILLER; Po; 0; L;;;;; N;;;;;
1144B; NEWAR HIGH SPACING DOT; Po; 0; L;;;;; N;;;;;
1144C; NEWAR ABBREVIATION SIGN CIRCLE; Po; 0; L;;;;; N;;;;;
1144D; NEWAR ABBREVIATION SIGN CROSS; Po; 0; L;;;;; N;;;;;
1144E;<reserved>
1144F;<reserved>
11450;NEWAR DIGIT ZERO;Nd;0;L;;0;0;0;N;;;;;
11451; NEWAR DIGIT ONE; Nd; 0; L;; 1; 1; 1; 1; N;;;;;
11452; NEWAR DIGIT TWO; Nd; 0; L;; 2; 2; 2; N;;;;;
11453; NEWAR DIGIT THREE; Nd; 0; L;; 3; 3; 3; N;;;;;
11454; NEWAR DIGIT FOUR; Nd; 0; L;; 4; 4; 4; N;;;;;
11455; NEWAR DIGIT FIVE; Nd; 0; L;; 5; 5; 5; N;;;;;
11456;NEWAR DIGIT SIX;Nd;0;L;;6;6;6;N;;;;;
11457; NEWAR DIGIT SEVEN; Nd; 0; L;; 7; 7; 7; N;;;;;
11458; NEWAR DIGIT EIGHT; Nd; 0; L;; 8; 8; 8; N;;;;;
11459;NEWAR DIGIT NINE;Nd;0;L;;9;9;9;N;;;;;
1145A; NEWAR FLOWER; So; 0; L;;;;; N;;;;;
1145B;NEWAR VAJRA;So;0;L;;;;;N;;;;;
1145C;NEWAR PLACEHOLDER MARK;So;0;L;;;;;N;;;;
```

6.2 Linebreaking

Linebreaking properties given in the data format of LineBreak.txt:

6.3 Syllabic Categories

Syllabic categories given in the data format of IndicSyllabicCategory.txt:

```
# Indic_Syllabic_Category=Bindu
1143D..1143E ; Bindu  # Mn [2] SIGN CANDRABINDU .. SIGN ANUSVARA
```

Indic Syllabic Category=Visarga 1143F ; Visarga # Mc SIGN VISARGA # Indic Syllabic Category=Avagraha 11441 SIGN AVAGRAHA # Indic Syllabic Category=Nukta 11440 ; Nukta # Mn SIGN NUKTA # Indic Syllabic Category=Virama 1143F ; Virama # Mn SIGN VIRAMA # Indic Syllabic Category=Vowel Independent 11400..1140D ; Vowel Independent # Lo [14] LETTER A .. LETTER AU # Indic Syllabic Category=Vowel Dependent 1142F..11431 ; Vowel_Dependent # Mc[3] VOWEL SIGN AA .. VOWEL SIGN II11432..11439 ; Vowel_Dependent # Mn[8] VOWEL SIGN U .. VOWEL SIGN AI1143A..1143B ; Vowel_Dependent # Mc[2] VOWEL SIGN O .. VOWEL SIGN AU # Indic Syllabic Category=Consonant 1140E..1142E ; Consonant # Lo [33] LETTER KA .. LETTER HA

6.4 Matra Categories

Matra categories given in the data format of IndicMatraCategory.txt:

<pre># Indic_Matra_</pre>	Category=Right										
1142F	; Right	#	Mc		VOWEL	SIGN	AA				
11431	; Right	#	Mc		VOWEL	SIGN	II				
# Indic_Matra_	Category=Left										
11430	; Left	#	Mc		VOWEL	SIGN	I				
# Indic Matra	Category=Top										
1143811439	; Top	#	Mn	[2]	VOWEL	SIGN	Е	VOWEL	SIGN	AI	
# Indic Matra (Category=Top And Rid	ght	5								
1143A1143B	; Top_And_Right	#	Mc	[2]	VOWEL	SIGN	0	VOWEL	SIGN	AU	
# Indic Matra (Category=Bottom										
1143211437		#	Mn	[6]	VOWEL	SIGN	U	VOWEL	SIGN	VOCALIC	LL
1143C	; Bottom	#	Mn	-	SIGN V	VIRAM	A				

6.5 'Confusable' Characters

Several Newar characters are similar to those of Devanagari, Bengali, and other modern Indic scripts. 'Confusion' data for these similarities are provided below:

11400	NEWAR	LETTER	A	;	0985	BENGALI LETTER A
11401	NEWAR	LETTER	AA	;	0986	BENGALI LETTER AA
11404	NEWAR	LETTER	U	;	0909	DEVANAGARI LETTER U
11405	NEWAR	LETTER	UU	;	090A	DEVANAGARI LETTER UU
1140E	NEWAR	LETTER	KA	;	0915	DEVANAGARI LETTER KA
1140F	NEWAR	LETTER	КНА	;	0916	DEVANAGARI LETTER KHA
11410	NEWAR	LETTER	GA	;	0997	BENGALI LETTER GA
11411	NEWAR	LETTER	GHA	;	0918	DEVANAGARI LETTER GHA
11415	NEWAR	LETTER	JA	;	099C	BENGALI LETTER JA

11416 NEWAR LETTER JHA 11417 NEWAR LETTER NYA	;	11497 TIRHUTA LETTER JHA
11417 NEWAR LETTER NYA	;	099E BENGALI LETTER NYA
11419 NEWAR LETTER TTHA	;	1119C SHARADA LETTER TTHA
1141C NEWAR LETTER NNA	;	1149D TIRHUTA LETTER NNA
1141E NEWAR LETTER THA	;	0925 DEVANAGARI LETTER THA
1141F NEWAR LETTER DA	;	0926 DEVANAGARI LETTER DA
11420 NEWAR LETTER DHA	;	0927 DEVANAGARI LETTER DHA
11421 NEWAR LETTER NA	;	0928 DEVANAGARI LETTER NA
11422 NEWAR LETTER PA	'	092A DEVANAGARI LETTER PA
11424 NEWAR LETTER BA	;	0935 DEVANAGARI LETTER VA
11426 NEWAR LETTER MA		092E DEVANAGARI LETTER MA
11427 NEWAR LETTER YA	;	092F DEVANAGARI LETTER YA
11429 NEWAR LETTER LA		0932 DEVANAGARI LETTER LA
1142A NEWAR LETTER VA	;	0935 DEVANAGARI LETTER VA
1142C NEWAR LETTER SSA		0937 DEVANAGARI LETTER SSA
1142D NEWAR LETTER SA	;	0938 DEVANAGARI LETTER SA
1142E NEWAR LETTER HA		
1142F NEWAR VOWEL SIGN AA		
11430 NEWAR VOWEL SIGN I		
11431 NEWAR VOWEL SIGN II	•	
11432 NEWAR VOWEL SIGN U		
11433 NEWAR VOWEL SIGN UU		
		0943 DEVANAGARI VOWEL SIGN VOCALIC R
11435 NEWAR VOWEL SIGN VOCALIC RR	;	0944 DEVANAGARI VOWEL SIGN VOCALIC RR
11435 NEWAR VOWEL SIGN VOCALIC RR 1143C NEWAR SIGN VIRAMA	;	094D DEVANAGARI SIGN VIRAMA
1143D NEWAR SIGN CANDRABINDU	;	UF82 TIBETAN SIGN NYI ZLA NAA DA
1143E NEWAR SIGN ANUSVARA	;	114C0 TIRHUTA SIGN ANUSVARA
11441 NEWAR SIGN FINAL ANUSVARA		
1144C NEWAR ABBREVIATION SIGN CIRCLE	;	0970 DEVANAGARI ABBREVIATION SIGN
1144D NEWAR ABBREVIATION SIGN CROSS	;	0058 LATIN CAPITAL LETTER X

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Anshuman Pandey

Proposal to Encode the Newar Script in ISO/IEC 10646

	1140	1141	1142	1143	1144	1145	1146	1147
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	11400	11410	11420	11430	11440	11450		
1	ञ्	घ	ন	ါ	ई	१		
	11401	11411	11421	11431	11441	11451		
2	õõ	2	य	11432	ţ	2		
	11402	11412	11422		11442 ب	11452		
3	ðõ	च	रू	ୁ	Š	3		
	11403	11413	11423	11433	11443	11453		
4	उ	क्र	व	্	१	8		
	11404	11414	11424	11434	11444	11454		
5	ऊ 11405	<u>उ</u> 11415	र् 11425	<u>،</u> قر)	3 11455		
				11433	11445			
6	भृ	म	म	ৢ		દ્ધ		
Ū	11406	11416	11426	ی 11436	11446	11456		
7	Ŧ	R	य	ু	Ì	ſ		
	11407	11417	11427	11437	11447	11457		
	ე	ट	ন	ें		乞		
8	_		11428		11448			
	11408	11418		11438	11440	11458		
9	2 11409	0	ल	્ર	2	୧		
-	11409	11419	11429	11439	11449	11459		
	1	.		~~~	•	171		
А	1	ठ	व	র্ণ	č	談		
	1140A	1141A	1142A	1143A	1144A	1145A		
р	শ	ਫ	8	्रो	•	සංස		
В	1140B	1141B	1142B	1143B	1144B	1145B		
					11440	11430		
С	স	ମ	व	्	0	\sim		
	1140C	1141C	1142C	1143C	1144C	1145C		
D	ठॊ	ी	स	ँ	X			
	1140D	1141D	1142D	1143D	1144D			
Е	क	થ	ह	ံ				
	1140E	1141E	1142E	1143E				
F	ख	द	ा	ଃ				
	1140F	1141F	1142F	1143F				

Figure 1: Proposed code chart for Newar.

Anshuman Pandey

The script is also known as 'Nepal Lipi', 'Nepalakshar', 'Newah Akhah', 'Newari', 'Pachumol', and 'Prachalit'.

Inde	pe	ndent vowels
11400	স	NEWAR LETTER A
11400	স্	NEWAR LETTER AA
	ž	
11402	<u>.</u>	NEWAR LETTER I
11403		NEWAR LETTER II
11404	उ	NEWAR LETTER U
11405	স	NEWAR LETTER UU
11406	भृ	NEWAR LETTER VOCALIC R
11407	¥Į	NEWAR LETTER VOCALIC RR
11408	C	NEWAR LETTER VOCALIC L
11409	Q	NEWAR LETTER VOCALIC LL
1140A	1	NEWAR LETTER E
1140B	ী	NEWAR LETTER AI
1140C	হা	NEWAR LETTER O
1140D	ठॊ	NEWAR LETTER AU
Con	SO	nants
1140E	ক	NEWAR LETTER KA
1140F	ख	NEWAR LETTER KHA
11410	ฦ	NEWAR LETTER GA
	ঘ	
11411	•	NEWAR LETTER GHA
11412	ភ្ន	NEWAR LETTER NGA
11413	च ज	NEWAR LETTER CA
11414	क्र	NEWAR LETTER CHA
11415	জ	NEWAR LETTER JA
11416	म	NEWAR LETTER JHA
11417	R	NEWAR LETTER NYA
11418	ट	NEWAR LETTER TTA
11419	0	NEWAR LETTER TTHA
1141A	ত	NEWAR LETTER DDA
1141B	ਫ	NEWAR LETTER DDHA
1141C	ଣ	NEWAR LETTER NNA
1141D	ባ	NEWAR LETTER TA
1141E	થ	NEWAR LETTER THA
1141F	य	NEWAR LETTER DA
11420	ધ	NEWAR LETTER DHA
11421	ন	NEWAR LETTER NA
11422	प	NEWAR LETTER PA
11423	र्	NEWAR LETTER PHA
11424	वे	NEWAR LETTER BA
11425	तं	NEWAR LETTER BHA
11426	म	NEWAR LETTER MA
11420	ग	NEWAR LETTER YA
11427	य न	
	ल	NEWAR LETTER RA
11429		NEWAR LETTER LA
1142A	ব	NEWAR LETTER VA
1142B	¥م تع	NEWAR LETTER SHA
1142C	ष	NEWAR LETTER SSA
1142D	स	NEWAR LETTER SA
1142E	ह	NEWAR LETTER HA
Don		dent vowel signs
-		dent vowel signs
1142F	्रा	NEWAR VOWEL SIGN AA
11430	ि ी	NEWAR VOWEL SIGN I
11431	ો	NEWAR VOWEL SIGN II
11432	ূ	NEWAR VOWEL SIGN U
11433	্ ্	NEWAR VOWEL SIGN UU
11434	્રે	NEWAR VOWEL SIGN VOCALI
11435	૾ૄ	NEWAR VOWEL SIGN VOCALI
11/04	Ē	NEWAR VOWEL SIGN VOCAL

NEWAR SIGN CANDRABINDU
= milaphuti
NEWAR SIGN ANUSVARA
= sinhaphuti

- 1143F ⁸ NEWAR SIGN VISARGA = lyuphuti · Also used for marking vowel length
 - NEWAR SIGN NUKTA
- 11440 ្ રં NEWAR SIGN AVAGRAHA 11441

1143C 🔍 NEWAR SIGN VIRAMA = tutipala, halant

- 11442 NEWAR SIGN FINAL ANUSVARA ;
 - Used for nasalization
 - = small m
 - · Also used for punctuation

Invocation signs

Various signs

ै

் 1143E

1143D

- 11443 Š NEWAR OM
- १ NEWAR SIDDHI 11444 • Written at the beginning of a text = bhin chin
- 11445 👒 NEWAR SVASTI • Written at the beginning of a text

Punctuation

11446	l	NEWAR DANDA
		= dipu chin
11447	-IL-	NEWAR DOUBLE DANDA
		= nidhvah dipu chin
11448	ς.	NEWAR COMMA
		Phrase separator
11449	٤	NEWAR DOUBLE COMMA
		Phrase separator
1144A	ć	NEWAR GAP FILLER
		• Used for filling gaps at end of line
		= thay jayke chin
		 Also used for hyphenation
		= khangva svapu chin
1144B	·	NEWAR HIGH SPACING DOT
1144C	0	NEWAR ABBREVIATION SIGN CIRCLE
1144D	Х	NEWAR ABBREVIATION SIGN CROSS
Digit	s	
•		
11450	0	NEWAR DIGIT ZERO

- NEWAR DIGI'I 11451 १ NEWAR DIGIT ONE
- 11452 २ NEWAR DIGIT TWO
- 11453 **3** NEWAR DIGIT THREE
- 11454 8 NEWAR DIGIT FOUR
- 11455 গ NEWAR DIGIT FIVE
- 11456 **§** NEWAR DIGIT SIX
- ŋ 11457 NEWAR DIGIT SEVEN
- 11458 乞 NEWAR DIGIT EIGHT
- 11459 ९ NEWAR DIGIT NINE

Various signs

1145A 💥 NEWAR FLOWER = pushpika 1145B ﷺ NEWAR VAJRA 1145C • NEWAR PLACEHOLDER MARK

1142F	ুা	NEWAR VOWEL SIGN AA
11430	्रि	NEWAR VOWEL SIGN I
11431	ါ	NEWAR VOWEL SIGN II
11432	্	NEWAR VOWEL SIGN U
11433	ু	NEWAR VOWEL SIGN UU
11434	્રે	NEWAR VOWEL SIGN VOCALIC R
11435	្ខ	NEWAR VOWEL SIGN VOCALIC RR
11436	્રૅ	NEWAR VOWEL SIGN VOCALIC L
11437	ूँ	NEWAR VOWEL SIGN VOCALIC LL
11438	ى دەرەرە مە	NEWAR VOWEL SIGN E
11439		NEWAR VOWEL SIGN AI
1143A	ূ	NEWAR VOWEL SIGN O
1143B	ী	NEWAR VOWEL SIGN AU

Figure 2: Proposed names list for Newar.

A Sample Newar Documents

ਧ-ਲਾਧੁੜਾਧਾਕ ਸਿੰਗ ਕਿ ਅੰਦਸ਼ ਕੇਸ ਕੇਸ ਅਸ ਅਮ ਅਮ ਵਾਂ ਅਿਨ ਕੇ ਕਾਲ ਕਾਲ ਸਿੰਦ ਕੇ ਕੇ ਜੋ ਨੇ ਦੇ ਕੇ ਜਾਂ ਵ ਸ ਨਹੀਂ ਮਿਲ ਕੀ ਕੋਟ ਕੀ ਨੇ ਸਾ। ਕਿ ਕਿ ਕੇ ਜੇ ਜੇ ਦੇ ਸੋ ਨ ਕੇ ਕੀ ਕਿ ਸ਼ੁਰੀ ਕੇ ਸਨ। ਜਿੱਕੀ ਕਿ ਸਾ ਕੇ ਪ੍ਰੋਡ ਨੇ ਸੋ ਨਿ ਸ਼ ਕਿ ਜੇ ਸਿਨ। ਜਿ ਕੀ ਕਿ ਜਿ ਕੇ ਪ੍ਰੋਡ ਨੇ ਸੋ	सन्तनास्त्र सिरुज्यन्तिनयास्तिरिः यदम्स् स्थानव मार्गनोड्ड वन्न सफास्त्र क्रि.से कटम्से प ति वर्मसाक्ष दक्षे ने पित्र प्रेया स्ते २४ कटम्से प ति वर्मसाक्ष दक्षे ने पित्र प्रेया स्ते २४ कटम्से प से वत्रे य साथि दिष भागां से ने हो त्र भाय य विम्म थ्या ग्री क्षे ने विष भागां से ने साथि साथि सि ने साथि दर्भ	of the Lankāvatāra Sūtra in the Newar script (from Lokesh Chandra 1977: 1).
भः वस्त्रा भः त्रमासवद्यासम्बत्ता स्वावसायां भाष्यां सम्बादन सिम् जायारा तभवे। सिम्मा रुगार्ख्य सम्बादन स्वपति मार्ग्र महत्ता रिक्रामधने साह महत्ता वांधिम सेम्मदा संस्वत्र ते समाधत समाह महत्	सर्वतद्या-धोतेविकतिविसंध्यव्यितिद्वरणात्वत्तय विस्ततति व्यक्तत्रतित्ता सत्त्रोत्र क्वत्यित् व्यक्तव्यित् व्यक्त अत्र तर्दिष्ठ स्वत्तेत्र स्वक्त्यप्रसिद्ध रक्षति र अत्र स्वत्य विस्तत्र त्यात् व्यक्तव्यित् त्या स्वर्ति र स्व बेवे सेता यत्र त्या कोटि तिः स्वक्तत्र र अत्र स्वत्य त्यात् विस्तत्र त्यात् व्यक्तवित्त या स्वर्ति र स्वर स्वर्ति ता पत्री (स्वर्गे तिस्तर स्वय् श्वास ने यभाव र संबोध स्वत्र त्र स्वर्ति क्वत् त्र ति त्या स्वर्ति र सि स्वर्ति ता पत्री (स्वर्गे तिस्तर स्वय् श्वास ने यभाव र संबोध स्वत्र त्र सित्र व्यक्तवित् या स्वर्ति र सि स्वर स्वर्णे यत्र त्या यति ति स्वर्त्त स्वय् श्वास च स्वत्र त्या स्वरित्र क्वा सित्र त्र स्वर्त्त त्या स्वर्ति स्वर स्वर्णे व त्या पत्र ति त्या यति त्यस स्वय् श्वास च स्वत्र त्या स्वर स्वर्त्त स्वर्त्त स्वर्त्त त्या स्वर्ति स्वर त्या या ते व न्या यति त्या यता स्वर्त्त स्वय् श्वा स्वर्त्त स्वर्त्त स्वर्ण्य वे व्यापत्र त्या स्वर्त्त स्वय् श्वास स्वर्त्त स्वर्त्त स्वर्त्त स्वर्त्त्य स्वर्त्त स्वर्त्र स्वर्त्त स्वर्य्त स्वर्त्त स्वर्त्त स्वर्त्त स्वर्त्त स्वर्त्त स्वर्त्त स्वर्त्त स्वर्त्त स्वर्त्त स्वर् स्वर्त्त्त्या त्र्या त्र्या स्वरत्त स्वय्त्र स्वरं त्वर्त्त स्वर्त्र स्वरत्त्र स्वर्त्र स्वर्त्त स्वत्त्	Figure 3: The first folio of the Lankavatara Sutra in the Newa

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Figure 4: An 18th century Newar inscription at Sunko Dhoka at Durbar Square, Bhaktapur. Photo courtesy of Adam Holloway.



Figure 5: A silver quarter *tanka* of Bhupatindra Malla from 1696 (Ns 816). The reverse reads, भी भी जग गूयगींड मज्ञ दव. It bears the date द१६ 816.



Figure 6: A silver half *mohar* of Jaya Prakash Malla from 1753 (NS 873). The observe reads, from clockwise, খ্রী? তায় ব্রদাশ मञ্च. It continues on the reverse: হ্রন. It bears the date হৃ ৫৭ ৪73.



४ मुखनमहा यहा न र मा बना तथा थ सहाम स लन्। हाह वर्श्व वता म 86445 44633 भ्रत्रक धोण स् न हो ना ग से प ना ह्वद्रांधेवनासेवाविसलन महा सलन **बिनग**री। स वर्डाहर्द्रसाम्हारिः हिवयमणसंद्रायवा દ્યીયમહેમદા 日本に にたちな **dHH** 30 Buddhist tantra. Nepal, 1801 MS 2096 GUNN গ্রহণ, দেবাথি গল্পনদার্গু নাম মব্য গাব নামবাধি মন্ত্র শব্দম শ্বি গাদ a and 14 4 M UTHIE 1001 EX 12 स्थात्रिम्हन्द्रिय् स्थित्रे वर्ताय वर्ताय वर्ता स्थापि मिने कि से धा सार्क से स्विड में से ब およる国際部長の **HEAT**61-425 에 문 것의 수 6 것 기 가 것 たたのなからであ ગોડેશેલગક્ષ 2124218 N I I I an han

Figure 8: Folios from a manuscript of the Guhyasamaja Tantra from Nepal dated 1801. The Newar script is written in gold ink on indigo paper (from The Schøyen Collection, Mss. 2096).



Figure 9: Examples of *kūtākṣara* "monogram" in the Newar script (from Rajbanshi 1974: Plate 80). These examples show two forms of CANDRABINDU.

स्रिकवतायक्री सेन्द्र वियायत सर दिखसाय इराइति असे गामेश । कलपाउपूजी । ลาวสอายุภายมีอาสาเมืองความนิยายังการเรายี่งการเรายังการเรายังการเรายังการเรายทารทารเรายทารทารเรายทารทารเรายทารเรายทารทารเรายทารทารทายทารทารทายทารทารทายทารทารทายทารทารทายทารทาร सह तक रुषायधीमह तनागरा यति प्रयादयात् । सिर्धयाय प्रजा सिंधाय प्राप्त में सिंध ये दिन से सिंध के सिंध के सिंध में सिंध के सि ठ(अन। अयाहता दिगयानिम्हा । । इत्छद्वि दिले जिले सिंग् हो कि हो । । अस्मर्यगा मूलनवद्धनैनमेशामुद्धगामिद्धेयामूलनम्द्रजनमाहनीनमेशामूलनम्धानम् १ विद्धिय १३१ । तहालयसयूजा । अगेगायेनमधो अप्रतार्थन महोत्येन महो अन्तर्वित महो अन्तर्वित महो मर्मदायेनेमेशा छैगेठक्कीनमहा डँको लिक्की नमा डिं सदस मुडरेग नेमेश देग झा के सुदेख महा सनसमाहनसकलबीर्थमसुद्रवताकलातत्वतत्वाधियेमयखेकविग्रुत्र छात्र श्री प्रमासविग्रा लिवग्रायी किल्लाक्र किल्ला मेयू कि सनमे रिययाइ मा आ याहनादि। (अ धन्म्डी। ।

मवयअग्रमतमान । र्डअग्रादि। वास्त । डकार्यवाय्वी अत्यादि। इद्या । ययगाययरुष्वेवर्षा किश्वित्रियाग्वित्रियमादि व्यत्ममाग्रम् द्रेत्यादि किसियाग्रम्खानकिनामा दिसाखलाखलमतसहाबाइसादि। येत्राष्ट्रगया। तथायेत्री सांदि । असियान। श्री वत्यो। जीखन्त्रवस्यादि। यसनेतपिसादि। सिंहत्रा वात्रभ्रती सादि। सिंहतेतित दि।यद्वनाय्वतग्रंबयायादि। । दृष्ट्रि। धानदृष्टिविगालय् ललिगैवीयव द्यम् शा अमस्य प्रिक्रवने विगर्वनवनिर्मासं रजजमका यक्षायत्री गैसोदि । रजस्तेवान रानानावसविविधान् की मकार्मासतिर्मित्रेग्यता सरुवेदी एवरे रहानयत्रमध्वत्री विक्रमदी विक्रमदि सं रखेवड विरुं सिर्गागनम्लनयवग कहिमविकिर्तेळ्त । साना गानाये व्यस्री साथि। । येवयगाको । य ताकाय अञ्च स्त्री के स्ट्रेया श्य बिल दिनी भय अरु के तालि का येत्र, युद्ध ये की मनिर्मिता । कर्स्ट यता का ब

ปลเมื่อสุสญ์เก่นกาลาลาร์มีหลงที่เขตาสมสารากาสออลกต์มีเกากราใ เนกาลานก था ।यगवासनवीयाजायुजावायमालका। । अध्यवाद्वने। । जिनसनावया । कांआसनस มสเอเเด้ใสีมากสามสเอเเด้คิสกลิเมสเอเ เสมโนเชียมโนเสเลเลเลเล अम् देखे तस्यायतिलिवै समेत्र आदिमश्राविनानेरु असिरोयविरुमि । वस्त्री लादीयि ते हा साविगाविन मुर्खयता अस्तर वेयर छोष्य महामार्ह छेरें यहा अर्धन मेश पूर्वन मा देखी महा मार्ठछरेत्र वायनमेश । छन्नमसान्वरार्डसीधीखाँसाशगुखछमेछसातान्र गामय वानवना रेगतयरीयलिर्मयतगर्सेणे अन्वेतमंशा अन्रईका छन्विष अन्ययमद्धे प्रवस्थयम्बरुग त्स्रीधी उन्दन मधायत्र मधनूसाने मधायत्र मधायत्रसान मधायत्र मात्रा संय मात्रा संय मुखाने मधायति स। यसासनारायाद्भौ । धठक । कूम्मीसनायनमः १० वरवष्ठम । वंगसंख्यायरूट् । वंगवंद

रुट्वजयक्षत्रमाहा विवसमक्तक्तमत्रलेकीक्रूरुट्साहा। । अधवामसस्य खामरुट् अक्र त्राधनी स्विक्त निकायन मधा से अनो मिकायसाठे। से मधा मार्थवाय र प्रताक व्यायकी **दंग् अक्षायनमधोद्धे अस्रायरूट् । ज्लेतिक दीनामधा । सिंह्य देयायनमधा सं**णित्र से लाग सिंग संयितामर्। म्रेतव्यायक्रां स्ट्रेने रुर्ग्यायवयर्। संजुखीयरुर् । जूति असेवा सा। । यनगार शार्यमसायरूर्। ५१ मजलोधने श्वांक तिराय नेमरे। वीखनामिकोयन मराचूं मधामायनमेशव तर्क्र गायन मधावी अञ्चलायनमधावे युद्धायरूट ाङ्तिकर्वत्या संध । वोह्न द्योयनमधावी गि रमसाला। दंगिखायेवाघर विकेववायके विनिज्ययायवघर विकुसायकर । इतिकसया सः जिल्याययूजा जिल्लयाग्रमायया इकी विजन्मी यान्य शक्ति येवानये वीवाधियतय क्रिंस्ट्रा थी ज समाग रहा विकारी या कुकी रहत या य खीर थि। स्वाया ह नादि । सिन्म् डाँ ग

Figure 10: Folios of a manuscript showing the use of $k\bar{u}t\bar{a}ksara$ -s in running text (from Lienhard 1988: Plate IX).



Figure 11: Folios of a *bājanabol* manuscript written in Newar (from Lienhard 1988: Plate X). The musical notation symbols shown in the folios are discussed in Section 5, item #5.



Figure 12: Rendering of an inscription in the Newar script (from Shakyavansha 1973: 44).

Anshuman Pandey

TIBETO-BURMAN FAMILY. TIBETO-HIMALAYAN GROUP. NEWARI.

(NEPAL.)

क मान्याया कायमचा ती का दस्री का ता चिक्री के कार्य थड भव गया के लिगू अम् लग फाग वियादिस क्षता धाय गुनु बता के भंस्ता ग विजावनिक चाना दस्री लि थलागू दकां श्रंस ता गता माना पन द स् अभाराङा मार्ज चाराङा थडभग् मीपगिद्दभग्र ता सार्व जम् आ दे स. म. यात्र-भूतिकाल- श्रेशाङ्ग-तयमरवनाङ्ग कर्म्भश्रायाङ्ग मया कुझ दे म्वासि या धास आत अन् इत द म्वासित का जय कल सामाव्हीन की मुहिमभी धडांमू प्याच धर्ते मदयाड्य चान अ्धर्म आयात स्नान की मवियाड अ्निज्ञास्पंति च गय ज्ञा याडा मनने राज प्रते जिन्वता या- भाम- गांजे मनिक संइभक पनि स्त-यक्ष तयान लम्दु जिधालमा पिषा ताम मिळ्ट्री नाजा 31 कि ववाया-धरम् हा ता हा क् स्थन हा के मू हु हा म हि न- पाप यानाड्य-मार्ड्य-क्रत-कार्यधायक आव्य जिन्मज्ञ जन्मेंडाक कम

Figure 13: Specimen of 'Newari' from the Linguistic Survey of India (from Grierson 1909: 221).

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ञ्म, गारू बबया ज्मलिसं मूलूक संघीय लाकगाक्तिक गधनक धकांश धायधा बच्छे धुंकांश नं नयाश्या मोलिक संवतयात नावां जाधिकानिक संवत धका४ नालाकया४ ञ्चलावूलायु मरू8शुयान नाषु यनिया शंरीन जाधान

> मयाल संवतया आश्रानयात दुयया यमुख नाजनैतिक याटींगयुर्स थ आश्रालयनयु संलगन जयाद्वीयं मनुगयुगु मानसिक व रगवनासक लाग्रह याथंग का नं यानावंग खनद। मयाल संबंग नाष्ट्रया रू संबंग खंश्सां थकिया ञ्धिकानीक माचगा याकीया निगिं मना४ग वर्ड्सचक नूयं क्षविला चंगु द्। भया ४ दूम भवा ४ तर्यु मरूत्वयूर्ध र्गूमिका रूभक खलस दयावंशु दू। जार्थिक, सामाजिक नूसं भया ४ दशय भना ४ तरु जूमिका जरानूयं दयावंगु द्। थ नवाश्वयुग युरावित याथु नितिं नं नाजनीतिष्ट तयुसं र्यामका क्रिंगाचंगु जारगय जा8 जारून क्रजं नयाचंगु पू।

> वंशु नयाल संवतया क्रूपँ क्रूज़ नयाश्या यक्षनमजी यूष्ठयकमल दाहालं भयाल संवलयाल नाष्ट्रिय संवल ४का ४ ञ्धिकानीक नूयं धाय्रधा या 8गु दू। मन श्व कवल धाय्रधायु जक सिमिंग जया थूंकिं द्वं वा झाकारुश्व खनमंद्र। सन कानी रूनं झाकावया दंशु विक्रम संवलया वाभ द्घु निधंय याथन सहल इन्ट्रे महून। अल भयाल संननयान नाश्चिय संवग धकां धायशा यायधुंका श्र आश्व थुकिया स्तन व मार्गा, श्वलावूलाया वाभ नं द्वं निर्धय क्रे खनमन्। श्व ञ्)श्रीलनस् क्कानाचीयं मनूतस्तु रगवनायात कक हाकनं ळक४ वांमलाक क्रिगेश कुंगे४ जेश खनदग ।

नयाल संबत नयाश्या मोलिक संबत् थन रू यगियादन ज्ञु संवग, भयाश्या जाधिकानीक संवग कथं खलावूलायु वळ्ट्री खँयु भनं गंका मद्। रुवा झ वा रुवा लियाया ळीया खँ जक खंश। नाष्ट्रया चारिमानगए वलना वीये नयाश्रीमेणयुरुं विदशयु बलावुला जयावयु, विष्ठगं जायागित संवतयात क्वावलं गिनायन यानामतव्यु । खँय गंका मद। क्व नया श्रीनमधिया मुलय उगयी उनय लानावयिं सकल जादिवासी, जनजागि, रगमारगमिग थ8थ8शु क्रसीका न नाष्ट्र रगननां उथल यूथल जयावंशु ळूलय नयाल संवत थ8शु शिर्षस्तान काळूशु खँयु गंका मद्। थुकि सकल नाष्ट्रथमी भयाशीम सकलं ळयुयं ळथी जयां 8 क्वाकमा 89 रवैंय नं गंका मद्।

Figure 14: Cover of Lipi Pau magazine.

नयाश्रीमगस्य जीवनस् जरिन्ननूयं चलावूलास् वयवृंकुयु कानधं थूकिया ययागयांग सनकानी जायगं जक यन मङ्ग। भयाश्रीमगयुगु सामाजिक, धार्मिक निर्गिथिगि न संद्यान श्रह गिथिया लिवंसाय लागु राव्हेंगु कानधं सुसुफ नूयं नयाल संनगया गिथि खलावूलायु नया रू वन।

मूलूकर्य वश्र्यु ञ्लक नाजनेंगिक यनिवर्गनं नयाल संनर्णा मार्गायान निलाम सिरिव्हे धंकाक्युं दू। यंवायन कालीन ॐलयु नयालराया मंका ४खल४या भ0न व क्रुदै रिंगुना आश्रीलनं मयाल संवतया वाम ग्रायक वर्वाय रूथन सहल इल। मयाश्या मॅलिक संनन मयाल संनन रू दयक दयकं विद्रभी संवग विक्रम संवगया बलावूलाया जानधकना मंद्र धयाशु जरित्यानं निवना का ८१ रवे ।

जधयन रुळ्टमा४२) खँय सनकानं जा४एक यला४ झाकारू४२ खनमद। खग्रतना नयान संनतया यक्षता गंखधन साखाश्यान सनकानं नाष्ट्रिय विनूनि धायका यानाश नयाल संबनयान थय माचना वीन च्रश्न खनद। नन थ विषय शहन अधयनया आ सनकान याखं बाकूगु खनमद्।

द्वदँ व किजायुजाया निर्पि सार्वजनिक विदाया मांग यासं यधानमुकी माधवकुमान संयालयाथायु वंगु उलिलभान युवरु ।

नया श्या इक्कं रू नाजनैंगिक यारी व श्रीम नगागयसं भयाल संवगया क्रूदंबुद्ध रिंगुना संक्ष्ण वीशु या४। ञ्स उगु संहर्शय नयाश्या मॅलिक संवत नयाल संवतया जधिकानीक द्यलावूला भया४ सनकानं याथमा४ धयाशु माग नं बावयुगु या? । तन शूयिं रू नाजनैतिक याटींत सङ्ल जलधा४सा थ8यिनिगु धायू व माचगायाग झावलं ग्राद गयां हरू कार्यदेल निचनग का क्रु खंश्सां थुंगु कार्यदलं वै0क्य जक सिमिग जल। ळूरी रुळूथंका? रानकानं थ कार्यदलया स्वाद तनगु न का स्नाकगु लाच गकं यितमरूल।

नयाल संवग नयाश्या मॅलिक संवग ख8। थ छक्क साधान्ध मखुखं जाम जनगाया रुलाळ्ळया निगिं निष्ठंगु संवग ख8 धयागु खँगु डूक़ां ह विद्र मनुगर्गु छगू ह धायू पू। तन जुथ खक्ष्सां थूकिया जाधिकानीक व सनकानी नूयं चलावूलाय् वयदया दंगु मद्। नाधा यधानमजी वङ्व गमलनं थ8ग युगासनिक सहजगाया निगिं रानगया छ भू यानस् चल जयावंगु विक्रम संवतयात यथासनिक नूयं खलावूलाय् रू४गु ख४ । तन मूलूक्य् नाधा शासनया

यधनमन्त्री रू मयाहाँ जया ४ नयाल संवतया आश्रालनयात

संवतया यक्षता गंखधन साखाश्या वात्र जनसंधान व

मयाल संवतया वाभ दयावंगु जनक विवाद व थ्रु

निश्वसंय थंकन निवः ग्रू। खनद्।

भया ४या भॊलिक संनग भयाल संनगयाग सनकानं ञ्धिकानीक माचगा वीमा ४२ मांश क्ववया वंशु ज्यालं ळ्री दयवूंकल। गारू जजनसुगु छगू रगया, छगू संघुनिया नीगिया कान्धं नयाश्या मॅलिक संवग क्वावलं रू उर्ग्यी उनय् लाना बंगु द्। ऋगू ॐूलय् भया श्र्या जाधिका न ीक संवतया माग्रता दयधुंकुश नयाल संवत नाधातयुश् जहानीया गासनय गना ह वन धुंकुर ख8। मवा8 रासं चनाळ्टेयिम अल मलया सँजाय लिसं मयाल संवग गिथि खलाग४२. नयालरामां चयाग४२ द्वं नं चंयाग जयालगं माचगा मवीशु निर्धय सार्वजनिक ज्ञसलिं मयालराया व भयाल संवतया चलावूला जाधिकानीक नूयं ज्म रू ज्ञगु ख8। तन जुर्थ ख8सां मयाल संबनया गिथिमिनि



थ ग्रवहानिकतायात हिलमहत । मया र सनकानं मयाल

संवतया अधयन कार्यदल निचनगु धायधा नं या8गु

ख8। तन नाजनैंगिक खिवातानीया कानधं भगिला8श्

कार्यपल निम्नमेंग संदल कळूंमदग। द्वभ ळूलय चलाया

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लाकंद्वा8यिं

B Script Charts

he Ŧ R नबर्ध સં औं स्वनवर्धा नभीवागी क्षनाय न ८मा ॐ ল্বা প্র শ্ব ন

Figure 15: Chart of नेपाल अक्षर 'Nepal Akshar' vowels and consonants (from Josi 1950: 1, 2)

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कम रूम ग्म घ्म च्म छ्म ज्म मम द्म द्म ड्म ड्म रम त्म थ्म झ ध्म न्म प्म फ्म ब्म भ्म म्म थ्म ज्म ल्म व्म श्म ष्म स्म ह्य

2 19 2 19 40 न्व 뉨 3 ख वा क रूव ग्व घ्व च्व छ ज्व मव द्व ठु डु थ्व द्व रव त्व ध्व न्व दु प्व पव ब्व भव म्व ख ज्व ल्व श्व ष्व स्व E

Figure 16: Tables of conjuncts (from Jośī 1950: 5, 6, 8). Note in particular the E HA initial conjuncts and their Devanagari correspondences.
Anshuman Pandey



Figure 17: Chart of the Newar script (from Rajavanshi 1953: 1).



Figure 18: Chart comparing various scripts used in Nepal (from Rajavanshi 1960: 1). Note the use of the name पाचुमोल *pācumola* for the Newar script.





Figure 19: Chart of थौंकन्हे प्रचलित आख 'Thaunkahne Prachalit Akha' (from Shakyavansha 1985: 36–37).



Figure 20: Chart of प्रचलित नेवारी 'Prachalit Nevari' (from Shakyavansha 1973: 39).

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Figure 21: Chart of CV combinations for KA through NGA (from Shakyavansha 1973: 40).



Figure 22: Formation of conjuncts with YA (from Shakyavansha 1973: 41).



Figure 23: Formation of conjuncts with RA and LA (from Shakyavansha 1973: 42).



Figure 24: Formation of conjuncts with LA and VA (from Shakyavansha 1973: 43).

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Figure 25: Variant forms of vowel letters and digits (from Lipi Thapu Guthi).

Figure 26: Chart of Newar script (from Regmi: Figure 27).

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कलक २८ क

श्ल ए जा य स्क स्य हम हलो भी रे ए, ए, ए, प्य रने रेग पी भी भी श्रीसूर्यवंशानॄपतिर्जयक्षमल्ल: प्रौढप्रतापभुवनैकमहाप्रवीण: ।	भ्रीस्-यर्वलन्पतिर्जरयस्त्रम्लः ग्रेडप्रगपरनुवेकमस्तप्रवेलिः । जयप्रतामल्लदेवन जिम न्याता आखल श्लोक दयका व थम	राय ⊈/ोाएमस्न देवन जिमन्या जा उन्नारवल (फ़्साक्न दयक्ताब थम चोस्य तया पण्डतजनपनिसेन थ्व श्लोक वोझओ अर्थ यायमाल ऑर्म्यारमाम क्लिस स्वन मनिफ्ला क्लाल क्लान क्लान क्लान क	भारताया पार्खनायन पान पान लग खारमक ताद्वांडा छा थयायमात श्रीमहासम्बरोदयतन्त्रराजे सर्वयोगितीरहस्ये पठितसिढे त्रयत्रित्तत्त ध्रीमहासम्वत्रादयतन्तु चार्त्र सर्वयानितीनहरू्य प्रजितसिदुरुयाधिं भरित्त.	पटलः समाप्ताजीजनत् ॥ ३३. ॥ ये धमहितुप्रमवा घटल ४ हामा फ्रीजी जनत् ॥ ३३. ॥यभर्मा ईरु घुरुवा	
ये प्र भी भूभ स् ये प्र भूभ स् हा हा हा स् हा ह	स्य भ भ स्य स	या प्रभ ्भ	द न म म म म म म म म म म म म म म म म म म		म म या या स या या स म
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Figure 27: Chart of Newar script (from Regmi: Figure 27).

नेपाल प्रचलित लिपि Nepal Standard Script
माँआ्सिश मुक्तें १-६ (मिंस्) गश द्। माँआखः मुक्रें १६ (झिंखु)गः दु। There are 17 vowels
जिञ्च - अ्ट्रा गृ) नु उन् औं अँ हस्व - अ इ उ ऋ लृए ओ अँ अं Short sound - a i u ri lri e o an am
दीर्घ - आ ळी ऊ मृ २ जे ठी अश दीर्घ - आ ई ऊ ऋ ॡ ऐ औ अः Long sounded a: i: u: ri: lri: e: o: ah
वाश्र्ञाखा — म्काँ ३.६ (स्ळ्स्) गा द्। बाःआखः – मुक्वँ ३६ (सुइखु)गः दु। There are 36 consonants
क ख ग घ ठ व ऊ ज म ी ३ क ख ग घ ड च छ ज झ ज ka kha ga gha nga ca/cha chha ja jha nya
<mark>ट 0 5 उ ६१ १ थ द घ न</mark> ट ठ ड ढ ण त थ द घ न Ta Tha Da Dha Na ta tha da dha na
य रूव एम यनलव पफबभम यरलव Papha/fababhama yara la va
४। य स ह 3ा प्र रू श ष स ह क्ष त्र ज्ञ Sha sha sa ha ksa tra gyan
र्द्ध जी जी जी ली इह नह मह ह ल्ह Ngha nha mha rha lha
दवना र्गान आखा स्पूर्पि क्रिनीपन्ता

दवनागान आसः स्याप क्रिकायन्तः प्रवलिग लिपि उलि थाक्ळ् मस् इळ्माः।

देवनागरि आखः स्यूपिँ छिकपिन्तः प्रचलित लिपि उलि थाकुइ मखु जुइमाः। To those of you, who are familiar with the Indian Devanagari script, the Nepal standard script should not be that difficult, I guess.

- स्व नवाश Suva Newah

नयाल संनग ११२९ सिल्ला २.६ गनिना१ (21.02.2009) Let me hear how you found the above scripts after some trial on your own. Next lesson will be on sounds of consonants.

Figure 28: Basic letters and signs of Prachalit Nepal from an online script tutorial (from "The Newah" 2009).

C Comparative Charts

तिच्छवि पूर्वकाल PRE - LKHCHHAVI PERIOD	কিন্দ্র্র LICHCHHA			मन्त्र रुवं द्याहकाल MALLA AND SHAHA PERIOD							
जाही BRAHMI		उत्तरत्निच्छवि १०ऽ१-८।(४७५॥४५	किरात KIRAT	र्ञ्जना RANJANA	सुजिमेा BHUJIMO	नेवारी NEWARI	मैथिली MAITHILI	तिब्बती TIBET AN	नन्दिनागरी NANDINAGARI	देवनागरी devalueari	
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Figure 29: Comparison of letters A to KHA of Newari, Ranjana, Bhujimol, etc. (from Government of Nepal 1962).

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ୢୄ	У°	く		Fý	S)	Ŋ	2	THE	29	G ^{bha}

Figure 30: Comparison of letters GA to DDHA of Newari, Ranjana, Bhujimol, etc. (from Government of Nepal 1962).

तिन्द्वविष्ट्रविकाल PRE - LICHCHHAVI PERIOD	דער יצי	কার্ত VI PERIOD		मल्क स्वं शाहकाल MALLA AND SHAHA PERIOD						
न्नाही BRAHMI	पूर्वलिन्छीव PRO-LICHCUNAVI	उत्तरतिच्छवि MST-LICHCHIANI	किरात KIRAT	रञ्जना RANJANA	सुजिमे। BHUJIMO	नेवारी NEWARI	मेथिली MAITHILI			देवनागरी DEVANAGARI
I	ઝા	থা		ৰ্	En	5	(3)	व	M	रा
Y	ጎ	7	FT	র	ຖ	ろ	ँ	5	Ţ	त् न
0	0	ম	К	W	થ	থ	21	দ্ব	ৠ	थ
5	Z	や	Y	জ	હ		ন	5	2	दु _{ष्र}
D	J	ঠ	E	Ł	Ø	ঁব	প	535	Ť	ଅ _{DHA}
T	ર્ક	R	Z	ন্	ଓଟ	ন	ন	a	च	
J.	U	Y	Ш	য	ध	य	え	4	μ	\mathbf{T}_{PA}
6	Ч	Ze	\bowtie	ব্দ	ৰ্ফ	Х¢	k	ム	দ্দ্	फ , _{PHA}
		Z	ረ	ব	র্ব	ব	۲	7	1	ন্ধ BA
Ч	7	Ř	સ	স্	প	Ś	ভ	TTP -	त्	`भ _{BHA}
४	F	F(7	স্	भ	म	ম	と	च	₽ _{MA}
Y	L	य	হ	स्	গ্ব	য	র	भ्	म्र	य्
{	1	X	X	-	4	ד	$\overline{\lambda}$	H	7	₹ _{RA}
し	Ŋ	से	nn	ন্	ઈ	ल	ন	A	ñ	ल,
9	<u>3</u>	Z	ম	ৰ	ধ্ব	ব	র	স্থ	1	9 _{VA}
Τ	R	म	J	ज्ञ	হা	প্র	<u>ل</u> کر	শ্ব	হা	হা
ይ	म	Ŕ	4	ম	શ્ર	ষ	ষ	R	β	SA
ц	4	Ħ	ア	म	ঙ্গ	स्	भ	N	स	स्

Figure 31: Comparison of letters NNA to SA of Newari, Ranjana, Bhujimol, etc. (from Government of Nepal 1962).

Ե	L	In	Z	रू	ac	Ş	रु	z	PS	ह् मत
t	ま	Ł		म्र	ধ্ব	R	25	K PL	मु	RT KSA
く	3	D	え	ঽ	গ	হ	ال	5		
Ę	7m	સ્ક	ろ	Feel	B	132	ઝુ	HA	Hor	वाग्रम
t	F	A	A	Ħ	ঞ্চ	স্ক	ক্য	P)	E	কথ ^{KYA}
+	4	Æ	Z	Æ	व	ৰূ	F	FT	Æ	
7	Ł	A	A	ক্লা	କ୍	द्ध	কু	ম	ক্ল	& KLA
ょ	₹	र्देत्	K	ৰ্ব্	ক্ষি	ক্ষ	<u>s</u> c	N N	Æ	' বিদ _{দেশন}
4	₹ †	¥	N	ॠ	भू	स्तृ	স্ট	NT NT	स्त	to SKA
5	4	to the	M	ST.	SFF	र्भुद्ध	Å\$	Ση	कु	к. К.
لح	5	र्ज्य	দ্ব	न्म	র্হ্ম	হ্ম	হ্ম	Z A	ह्म	হে 📖
14	জদ্য	eg)	त्री	ব্র	ଶ୍ରା	স্ত্রী	শ্বি	et K	শ্রী	श्री 5 <i>HR</i> र्गे

Figure 32: Comparison of letters HA and some ligatures of Newari, Ranjana, Bhujimol, etc. (from Government of Nepal 1962).

		_		_				-		
ខ	ళా	ખ	09	ĝ	01	90	90	70	Цо	%0 10
5	3	3	रु	R	e	2	2	હ	2	ை ச
5	٦							1	Ľ	6 8
5	2	ন	œ	•	د	۲	ح	9	5	6 1
~>	53	~57	ঙ্গ	z	ଟ	છ	IJ	2	245	ہ س
۴	~2	۶	છ	চ্চ	୶	5	হ্য	7	ন	ء بر
⊁	স	प ीउ	x	IJ	S	9	<u>مر</u>	N	Ŧ	† 20
ļ]]	111	ru.	S	ષ્ટ	¢	to.	¢	É	ĘŶ	6 33
11	11	"	4	છ	¢	R	a	¢	E	3 2
I	1	٢	າ	م	6	ه	?	Ĺ	0	9
BAAHMI	पूर्वं सिन्छवि १९०-६१८म९म१४५	Post-Lichening	विभात	RANATIA	भूजिमा Bhuunno	HEWARI	มีโยวด์โ MAITHILI	TIBETAN	न निन्तना जरी MANDIMAGARI	CTTDIT
Craft gaare	तिव र्षि LICHCH PER	HAVI								



Anshuman Pandey

(1)

(2)

(3)

(4)

	Scripts Used in Writing Maithili मैथिली लिखबामे व्यवहृत लिपि								(1) 지	(2) य	(3) य	(4) V
•				i (3) Nāgari			•		र	7	र	r
(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)		त	ल	ल	1
প্স	স	अ	а	Б	3	छ	chh		র	ষ	व	v
প্রা	জ্য	आ	ā	F	জ	ज	j		ઝા	প্থ	হা	sh
ST	š	इ	i	या	উ	झ	jh		ষ	ষ	ष	ş
ব্র	ઝ્રો	ई	1	P	\ઝ્	ञ	ñ		স	स	स	s
ک	उं	ਤ	u	ઉ	5	ट	ţ		হ	ह	ह	h
5	ভ	স	ū	б	0	ठ	ţh		ক	के	क	ka
ৰ্ন্দূ	Ŧ	ॠ	ri	उ	ন্থ	ड	ġ		কা	का	का	kā
এ	ভ	ए	e	7	る	ढ	dh		क्रि	क्रि	कि	ki

मैथिली लिखबामे व्यवहृत लिपि	रा य य y	रु दे क kri
(1) Tirhutā (2) Newārī (3) Nāgarī (4) Roman	र्न र r	र्रेग क्ये क्य ky
(1) (2) (3) (4) (1) (2) (3) (4)	तल न 1	ऊ क क kr
श्र ञ्र ^{अ a} टुंट्रें छ chh	ऱ द व v	र्श के क्व kv
প্রাজ্য ^{আ ā} এই উজি j	র্জা প্রা sh	🖌 🗟 ज्र ddh
अ ॐ इ i मा उर झ jh	য য দ ș	७ कित tt
जिल्लीई 1 (13 ⁹ २ ज ň उउउ प टेटट ț	म स इ	🕺 🗿 श्र shr
	ह ह h रुव क ka	🛠 🐼 ष्ठ sṭh
उँ ऊँ ऊ ū ि ° ठ th	কি দী क ka	न्न न् नु nu
सृ मृ ऋ गं ु उ उ ड d	কা বা कা kā	श्व खेच nv
धे जे ए ९ ८ ८ ड dh भे जे ऐ ai त टी ज ņ	कि कि कि ki	र्फ हा hm
अ उ ऐ ai त ध ज ग	री की की ki	2 8 8 1
ও উ) ओ ० ত 7 त t ও উ) औ au ध थ ath		ર ર २ 2
ও উ ओ ० ज ४ त t ও উ औ au श थ थ th श्रं अँ मं मदद d	कु कि के ku कु कि के ke कि के kai	3 3 3
श्रं औं मं मद्द d	र्के की के ke	& Š & 4
প্রাং স্ট ^{ভারা} , মি ধি খ dh কি ক ক k ক ন ন ন n	र्के के kai	उ र् ज ५ 5
	र्ता की को ko	ح تى ج 6
थ खि ^{ख kh} अयम p St ग म g रा रू फ ph	(को) को को kau	9 7 6 7
• –	३० उ क्ष kş	228
धि घ ^{gh} तिव ब b ९ ऊ ङ गं छ रूभ bh	्री ध्री ध्री प्री प्री प्री	a e 2 9
ठिचे ^{च ch} ग म ^{म m}	उद्ध हू ज gÿ	20 80 80 10
		cxii

Figure 34: Comparison of Maithili, Newari, and Devanagari (from Jha 1999: xxxi-xxxii).

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PLATE 76 नेबारी लिपिको उत्तानि	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
PLATE 75 नेबारी लिपिको उत्यति	 Б. Р. Э. Э. Г. С. С.
PLATE 74 (सिपिचित्र ६७) नेवारी लिपिको उन्पत्ति	жж.ж.ж. ж.

Figure 35: Evolution of Newar from Brahmi (from Rajbanshi 1974: Plates 74, 75, 76).

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	Newa	Pachhai	Rabison	Kumari	Swati	Aakha
A	ञ्	স্	স্	স্	भ्	স্
AA	ञ्	ञ্	স্	ञ्	স্ম	স্
I	<u> </u>	285	30) So	õ	30
II	ઝ્રી	يتر	200	يتوا	يقا	ઝી
U	ठ	उ	उ	उ	उ	3
UU	उ	उ	স্তা	ব্র	5	ক্ত
VOCALIC R	_		भृ	—	मृ	मृ
VOCALIC RR	_		—	_		मॄ
VOCALIC L	_		—	_		С
VOCALIC LL	_	_	—	_		ર
Е	1	1	1	ন	6)	ভ
AI	স	শ	کی ا	ন	رفی	ই
0	ठा	अ	ব্য	বা	उा	স
AU	र्जे	ठो	ব্বী	ব্র	उो	শ্র

Table 2: Comparison of vowel letters and signs of various digitized Newar typefaces.

	Newa	Pachhai	Rabison	Kumari	Swati	Aakha
VOWEL SIGN A		_	_	_		
VOWEL SIGN AA	া	ा	ा	ा	ॊ	ा
VOWEL SIGN I	િ	િ	િ	ि	ি	ি
VOWEL SIGN II	ി	ി	ါ	ി	ी	ி
VOWEL SIGN U	्	्	्	্	্	्र
VOWEL SIGN UU	্	୍	୍	৾	্	্
VOWEL SIGN VOCALIC R	್ರ	ૃ	ુ	ૃ	ূ	ূ
VOWEL SIGN VOCALIC RR	_	_	_	_	_	્ર
VOWEL SIGN E		ॅ	ॅॅ	्	ੇਂ	ॅ
VOWEL SIGN AI	${}_{\mathcal{S}}$	્ર	$S_{\mathcal{K}}$	ു	ു	્ર
VOWEL SIGN O	ী	ৗ	ॅा	ॅॉ	ৗ	ৗ
VOWEL SIGN AU	ें1	ॊ	ें।	ঁী	ॅ	ৗ

Table 3: Comparison of vowel letters and signs of various digitized Newar typefaces.

	Newa	Pachhai	Rabison	Kumari	Swati	Aakha
KA	क	ক	ক	ক		ন
КНА	ख	रव	ख	रव	ख	ख
GA	গ	হা	و	গ	গ	ງ
GHA	घ	ঘ	ঘ	घ	ધ	घ
NGA	रु	\mathbb{Z}	2	2	$\overline{\mathbf{v}}$	2
CA	ব	च	ব	व	व	च
СНА	স্থ	স্থ	ऋ	স্ক	8	ষ্ত
JA	ব্য	ব	ব	ত্র	স	স
JHA	म्	म	म	म	म	ম্
NYA	Ŗ	R	ગર	\mathcal{J}^{z_2}	J;	R
TTA	ट	र	ट	ਟ	र	र
TTHA	Q	D	0	0	0	0
DDA	ত	ত	ত	ত	3	ত
DDHA	દ	て	ਫ	ढ	रु	ढ
NNA	ध	દ્ય	গ	8	ध	દા
TA	न	η	ণ	ባ	ባ	ባ
THA	થ	થ	થ	થ	થ	થ

Table 4: Comparison of consonant letters of various digitized Newar typefaces.

	Newa	Pachhai	Rabison	Kumari	Swati	Aakha
DA	(??)	(??)	य	द	द	द
DHA	ધ	ધ	ধ	ধ	ิ่	ধ
NA	न	न	ন	ন	न	ন
РА	प	य	प	य	य	य
PHA	रू	ৰ্ম্	रू	रू	रू	ৰ্
BA	व	व	व	ব	व	व
BHA	ন্	হ	ন্	र्ग	र्	হ
MA	म	म	म	म	म	म
YA	य	य	य	य	य	य
RA	ন	ন	ন	ন	ন	ন
LA	ल	ल	ল	ल	ल	ल
VA	व	व	व	ৰ	व	व
SHA	8	শ	শ	ধ	শ	শ
SSA	य	ষ	य	व	ष	ष
SA	स	र्भ	स	स	स	स
НА	ह	रू	ह	रू	ৰ্ছ	रू

Table 5: Comparison of consonant letters of various digitized Newar typefaces.

D Usage of Characters in Manuscripts



Figure 36: The Newar varnamala in a manuscript (U Tokyo MS Matsunami 419, f.238r). Original image provided by Iain Sinclair.

दनी॥रित्विनिसर्चमात्तानां स्यमात्रकारुभी॥वाफ्रशीवदमामायराज्ज्ञमाङुच्छता सिना॥सत्रस्वनी विभाताक्री दिख्य क्रविहातिनी॥मध्यमं विभाव की शी धर्माधतिनी॥कर्म्मधानभ्वत्री विद्याः विभ्यक्वात्तारामधत्री॥वाधनास्र्वमात्ता नां वार्ध्वमहतरंभवत्री॥ध्यमादिम्हित्तंम्यनाः अ्ड्रवाड्यरुग्विनी॥म्रवीथराधनीरुः नरमयोज्जीत्र्याभिषविक्रमाः दर्भनी युद्धमाग्नीनां स्वस्मार्ग्नयदर्भनी ॥वागीः

Figure 37: Use of FINAL ANUSVARA and dandas (from Lokesh Chandra 1981: 317).

दनी॥षित्विनिसर्चमात्ता**नांः**स्यमात्रश्वारुशी॥बाम्रशीवदमामायराम्व्यमाङ्घ्रस्वा सिना॥सत्रस्वर्गी विभात्तान्त्रीः त्रयुव ऋविह्यात्रिशी॥मध्यगर्मात्रात्रंग्धाः (वर्जीशीः धर्मीक्षत्रिशी॥कर्माक्षकत्र्वत्रीविद्याः विग्वक्वासार्यमक्षत्री॥याधनीसर्वे मात्ता नां यार्थ्वमहरूर्ग्वमी॥क्षत्रादिस्क्रिसंस्यन्ताः अ्ड्रयाष्ट्रयरुत्रिनी॥सर्वीयस्वनीहः इत्यायीच्छात्र्याभिष्ठविद्यसाः दर्शनीयुद्धमा ग्ली**नांः नयुसा** र्जयदर्शनी॥वाग्रीः

Figure 38: Use of ; FINAL ANUSVARA after ° ANUSVARA (from Lokesh Chandra 1981: 317).

Figure 39: Use of ▶ RIGHTWARD ARROW DANDA and ↓ LEFTWARD ARROW DANDA used alongside ↓ DOUBLE DANDA (from Lokesh Chandra 1981: 319). Note the sequence ♦ in the last line, which are written without the accompanying ↓ DANDA.



Figure 40: Use of ▶ RIGHTWARD ARROW DANDA and ▲ LEFTWARD ARROW DANDA written with ※ FLOWER (from Lokesh Chandra 1981: 357).



Figure 41: Variant of [™] FLOWER in the form of a flower with stem, and a [™] PUSHPIKA (from Lokesh Chandra 1981: 231).



Figure 42: Variant of EGAP FILLER at a mid-line break (from Lokesh Chandra 1981: 348).



Figure 43: Variant of ^c GAP FILLER at end of line (from Lokesh Chandra 1981: 323).



Figure 44: Text showing \circ NUKTA combined with \exists vA (Asha Archives Mss. 3327, folio 5v). Original image provided by Iain Sinclair.



Figure 45: Text showing the use of the \cdot middle dot as a word and phrase separator (Asha Archives Mss. 3327, folio 5v). Original image provided by Iain Sinclair.

Figure 46: Text showing the use of ° ABBREVIATION SIGN CIRCLE (Asha Archives Mss. 3314, folio 5v). Original image provided by Iain Sinclair.

অমূহ ঋণ্ঠবিদ্য দগম মুহু স্তানি দ্র নির্বানি মান মুর্বা মুখা মান মান মোগ্র মান মোগে মান মান মোগে দি মান মোগে মান	यमूत्र औरतियुत्त न मुद्र चाढिप्रति जे ति भा ने के त्र प्रजाव सोक्ति खंग भा भा साम साम साम साम साम साम साथ ने मे अयम दे सीक्षि पंषेत्र के समात जो का ति का ने के त्र प्रजात ने कि मिस साम साम साम साम साम साथ ने से समा साथ ने स समित दि ला क्ष्मी के दि ला भा में से मो ॰ हा ने के य य य ने कि ले स्था में मिस साम साथ ने साम साथ ने से से में स में कि स से के दे दि ॥ में साथ में साथ में कि लि स्थान से कि लि में का स्थान साम साम साम साम साथ ने से से से से साक्षित साथ के दे दि ॥ में साथ में साथ में साथ में दि में स्था साथ में से साथ ने साथ ने साथ ने साथ ने साथ ने स	Figure 48: Use of \$ аvадкана (from Lokesh Chandra 1981: 41).	ជាក់អនស៍ខាខាគាល់កំទមន៍ដែនជនបោរជកភិស្ថនាបារកក្លឹងនាំងនាំ២១ខ្លើមកាណ្តាល់ នេះកំអានដានក្លាឆ្កាត់អេដូខនំរ ឯអនាអរន្ធតាំដឋននាតាដាកាមទានដំនាដាកតុរាសនានាំអាននាតាស់នេះឧងនាអាន់មេតាកាអានសំនៃន្វាអ្នងសំនាំកំសាងកំខាន់វិល ឧរល្អិខស៍ចំណាតៃ॥អន្ទារឧតុភានជែនកំព័ត្តតាំនារាំងឧង្ឃីខឧង្ឃី១០ពី ខេង្ឃ១០ខែតារជាអានសំនិតាអូខសំនាំកំសាងកំខាត់វិល
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Proposal to Encode the Newar Script in ISO/IEC 10646

बाचयिति जिवहशा हर्जना यह सामग्र

ध के साराज की सामग्रे में य मुद्द का य मंद्रे ज 20 कि 2

50

95

४ व या में या त सा सा या या या या या या त जे क

या कथय कि जि ज ये ये य य का राजी जै जी में भी

₹

~ 7

स्मेर्यत्र वा । जुरूर नया न भगति ॥ न ते साँक

Figure 49: Various punctuation marks (from Lokesh Chandra 1981: 98).

E Various Signs and Numerals



Figure 50: Various signs found in Newar manuscripts (from Shakyavansha 1973: 84).



Figure 51: Various symbols and flourishes found in Newar manuscripts (from Shakyavansha 1973: 85).

PLATE ⁸⁶ िभिपितिज्ञ ५ 1 विकासका श्वयारी इाताव्दी तारपत्रामा लेर्राचेको सर्वज्ञानेत्तिर तन्त्र बाट		साइपनमालेखेको तन्त्राज़ भन्ले मुस्तकुषाट र रि रि मि रू ने ले ५ भे मा र र र र र र र ७ ० २ २ गः	ि लिपिचित्र ६] विक्रमको वार्डो शताब्दी ताउपत्रमा लेखेको अध्यामलान न्त्र बाट	र्रे भी प्री जी प्री भी भी भी भी थी) २ २ २ भी भी भी भी भी भी थी)))))))))))))	11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
िलिपिचिज ४] नि नेवारी लिपिको धेक विक्रमको दक्षों मताब्दी रिवरमको लंकावूँ भन्ते पुस्तक बाट	२२ २२ २२ २२ २२ २२	णुर णुर णुर २. ४. हु १२ १४ ९५ संडपत्रमालेसिएको उद्योग्विविज्ञयधारणीलाट	ж х Х л Х л Х л Х л Х	५० रम्के। भभिसमयार्ल्यकार् कारिकाबाट	क क भूति भूति स्तु भूति स्तु भूति
PLATE 85 [लिपिचित्र ४ धाचीन नेवारी लिपिको विन्नापको टकों झत् ताडपत्रमा लेखिरको लेकावूँ।	25 5 75 20 76 4 71 7 7 7 7 7 7 7	णुर लुर लुर लुर १० ११ २२ ४ स सहपत्रमालेसिएव	の 2 (原 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	२० ३० ४० ४० ५० ताउपत्रमा लेखिरको भभिसमया	ده دی د در د د د د د د د د د د د د د د د د د

Symbols of Nepal Lipi

Ő

9

Λ

2

I

In addition to dependent vowel signs noted above, there are symbols in Nepal Lipi as below:

Sinhaphuti (Anusvara) Milaphuti (Chandrabindu) Ő ○ 8 Lyuphuti (Visarga) Dipuchin (Danda/Virama/period) Nidho Dipuchin (Double Tutipala chin (Halanta) II Danda/Virama/period) Bhin chin (Siddhi/Subha) sign Akhala hilabulachin (changer) 9 २ Khangvo jhasuchin (comma) × Khalithasaytegu chin (blank) Akhala tophyuchin (Kaakapada/ missing //// Mhusa chin (delete) letter indicator) 1111 Khangvo svapu chin (word connector) Bhinka chin (correction) \sim Kvocagu chin (end sign)

A New Symbol for AE diphthong

Although there are many words that read AE sound in Nepal Bhasa, there is no dependent sign for it. Further there are also a number of foreign names starting with AE vowel sounds of many countries in the world. Therefore, a dependent sign for AE is considered very vital and this author proposes a new dependent symbol τ for (AE) to be added in the dependent symbols of vowels when encoding Nepal Lipi to fecilitiate writing both local and foreign words as in • 如 (mhyay-daughter); 机の) (Canada), 해외제 (Canbera), 여간기관 (Amsterdam). The author proposes the sign to be named Beikoh chin (bent symbol) as one needs to bend one's jaw to pronounce AE, and add lyuphuti (visarga) for a long letter as in भ्रिक् (Ann).

Figure 53: Excerpt from Vajracharya (2010: 7) showing various symbols used in the Newar script as well as a description of a newly-created vowel sign beikoh chin. This vowel sign is not a candidate for encoding.

ISO/IEC JTC 1/SC 2/WG 2 PROPOSAL SUMMARY FORM TO ACCOMPANY SUBMISSIONS FOR ADDITIONS TO THE REPERTOIRE OF ISO/IEC 10646 ¹					
Please fill all the sections A, B and C below. Please read Principles and Procedures Document (P & P) from <u>http://www.dkuug.dk/JTC1/SC2/WG2/docs/principles.html</u> for					
guidelines and details before filling this form. Please ensure you are using the latest Form from http://www.dkuug.dk/JTC1/SC2/WG2/docs/summaryform.html .					
See also <u>http://www.dkuug.dk/JTC1/SC2/WG2/docs/roadmaps.html</u> for latest <i>Roadmaps</i> .					
1. Title: Proposal to Encode the Newar Script in ISO/IEC 10646					
2. Requester's name: Script Encoding Initiative (SEI) / Anshuman Pandey <pre>pandey@umich.edu></pre>					
3. Requester type (Member body/Liaison/Individual contribution): Liaison contribution					
4. Submission date: 2012-02-29 5. Requester's reference (if applicable):					
6. Choose one of the following:					
This is a complete proposal: Yes					
(or) More information will be provided later:					
B. Technical – General					
1. Choose one of the following:					
a. This proposal is for a new script (set of characters): Yes Proposed name of script: Newar					
b. The proposal is for addition of character(s) to an existing block:					
Name of the existing block:					
2. Number of characters in proposal: 91					
3. Proposed category (select one from below - see section 2.2 of P&P document):					
A-Contemporary X B.1-Specialized (small collection) B.2-Specialized (large collection)					
C-Major extinct D-Attested extinct E-Minor extinct					
F-Archaic Hieroglyphic or Ideographic G-Obscure or questionable usage symbols					
4. Is a repertoire including character names provided? <u>Yes</u> a. If YES, are the names in accordance with the "character naming guidelines"					
in Annex L of P&P document? Yes					
b. Are the character shapes attached in a legible form suitable for review? Yes					
5. Fonts related:					
a. Who will provide the appropriate computerized font to the Project Editor of 10646 for publishing the standard?					
The chart font will be provided by Anshuman Pandey, pending the authorization for use by Rabison Shakya, the original developer of the 'Rabison' font, from which the glyphs are derived.					
b. Identify the party granting a license for use of the font by the editors (include address, e-mail, ftp-site, etc.):					
Anshuman Pandey (pandey @umich.edu) and Rabison Shakya					
6. References:					
a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided? Yes b. Are published examples of use (such as samples from newspapers, magazines, or other sources) of proposed characters attached? Yes					
7. Special encoding issues:					
Does the proposal address other aspects of character data processing (if applicable) such as input,					
presentation, sorting, searching, indexing, transliteration etc. (if yes please enclose information)? Yes					
8. Additional Information:					
Submitters are invited to provide any additional information about Properties of the proposed Character(s) or Script					
that will assist in correct understanding of and correct linguistic processing of the proposed character(s) or script. Examples of such properties are: Casing information, Numeric information, Currency information, Display behaviour					
information such as line breaks, widths etc., Combining behaviour, Spacing behaviour, Directional behaviour, Default					
Collation behaviour, relevance in Mark Up contexts, Compatibility equivalence and other Unicode normalization					
related information. See the Unicode standard at <u>http://www.unicode.org</u> for such information on other scripts. Also					
see Unicode Character Database (<u>http://www.unicode.org/reports/tr44/</u>) and associated Unicode Technical Reports for information needed for consideration by the Unicode Technical Committee for inclusion in the Unicode Standard.					

¹ Form number: N3902-F (Original 1994-10-14; Revised 1995-01, 1995-04, 1996-04, 1996-08, 1999-03, 2001-05, 2001-09, 2003-11, 2005-01, 2005-09, 2005-10, 2007-03, 2008-05, 2009-11, 2011-03)

C. Technical - Justification

C. Technical - Justification	
1. Has this proposal for addition of character(s) been submitted before?	No
If YES explain	
2. Has contact been made to members of the user community (for example: Na	tional Body,
user groups of the script or characters, other experts, etc.)?	Yes
If YES, with whom? Kamal P. Malla <kamal.< td=""><td>nalla@gmail.com></td></kamal.<>	nalla@gmail.com>
Kashinath Tamot <kashinath.ta< td=""><td></td></kashinath.ta<>	
Suwarn Vajracharya <suw< td=""><td>an_vj@hotmail.com></td></suw<>	an_vj@hotmail.com>
lain Sinclair <risinc@< td=""><td></td></risinc@<>	
Alexander von Rospatt <rc< td=""><td></td></rc<>	
Patrick Hall <p.a.v.hall< td=""><td>@btinternet.com></td></p.a.v.hall<>	@btinternet.com>
If YES, available relevant documents:	text of proposal
3. Information on the user community for the proposed characters (for example	
size, demographics, information technology use, or publishing use) is incl	
Reference: Size of user community is unknown. Script is used for p	
4. The context of use for the proposed characters (type of use; common or rare Reference: The Newar script is used for writing Newar (Nepal Bha	
Reference: The Newar script is used for writing Newar (Nepal Bha The script is also known as 'Prachalit', 'N	
	Yes
5. Are the proposed characters in current use by the user community? If YES, where? Reference: By speakers of Newar in Nepal,	
6. After giving due considerations to the principles in the P&P document must th in the BMP?	No
If YES, is a rationale provided?	
If YES, reference:	
7. Should the proposed characters be kept together in a contiguous range (rath	
8. Can any of the proposed characters be considered a presentation form of an	
character or character sequence?	No
If YES, is a rationale for its inclusion provided?	
If YES, reference:	
9. Can any of the proposed characters be encoded using a composed character	r sequence of either
existing characters or other proposed characters?	No
If YES, is a rationale for its inclusion provided?	
If YES, reference:	
10. Can any of the proposed character(s) be considered to be similar (in appea	ance or function)
to an existing character?	Yes
If YES, is a rationale for its inclusion provided?	Yes
If YES, reference: See text of proposal for similarities	between Newar, Devanagari, etc.
11. Does the proposal include use of combining characters and/or use of comp	
If YES, is a rationale for such use provided?	Yes
If YES, reference: Combining	
Is a list of composite sequences and their corresponding glyph images (g	
	aprile symbols) provided?
If YES, reference:	
12. Does the proposal contain characters with any special properties such as	Voo
control function or similar semantics?	Yes
If YES, describe in detail (include attachment if necessary)	Virama
See text of proposal	
13. Does the proposal contain any Ideographic compatibility characters?	No
If YES, are the equivalent corresponding unified ideographic characters in	lentified?
If YES, reference:	