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Proposal to Encode the Newar Script in ISO/IEC 10646

Anshuman Pandey Department of History University of Michigan Ann Arbor, Michigan, U.S.A. pandey@umich.edu

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1 Purpose

This is a proposal to encode the Newar script in the Universal Character Set (ISO/IEC 10646). It replaces "Preliminary Proposal to Encode the Prachalit Nepal Script in ISO/IEC 10646" (N4038 L2/11-152). The proposed name for the script has been changed from 'Prachalit Nepal' to 'Newar' (see Section 3.2).

This document provides background on the Newar script, a description of the writing system, character data, and examples of usage. Also included are descriptions of characters that are attested, but not yet proposed for encoding. The ISO Proposal Summary Form is attached.

2 Introduction

2.1 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 जना ताय/ नेवा: भाय 'Newa Bhay' and in the Nepali language as जपाल ताया/ 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. The script is also used for writing Sanskrit and Nepali. It was used historically for writing Maithili, Bengali, and Hindi.

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 historically associated with Newar linguistic culture since the 11th century. The script is referred to as नेवार आखर *nevāra ākhara* "Newar Script" for the first time in the 1654 inscription of king Pratap Malla (r. 1641–74) at Hanuman Dhoka in Durbar Square, Kathmandu (see figure 7). The common Nepali and Western designation is नेवारी 'Nevari' / 'Newari'.

The script has been known by several different names. In his 1950 work Nepāla Deśyā Akṣarabodha, Panna Prasad Vaidya called the script नेपालाक्षर 'Nepal Akshar'. The Nepalese epigraphist Pt. Hemarāja Śākyavamśa identified the script as थौंकन्हे प्रचलित लिपि 'Thaunkanhe Prachalit Akha' ("Current Popular Script") in Nepāla Lipi Samgraha (1953) and in Nepala Lipi-Prakāśa (1973) he called it प्रचलित नेवारी लिपि 'Prachalit Newari Lipi' ("Current Newari Script") in Nepali and "Newari Script" in English. Other names include नवाश जासा? / नेवा: आख: 'Newa Akha' or 'Newah Akhah' ("Newar Script"). At present, the names प्रचलित नेपाल लिपि 'Prachalit Nepal Lipi' ("Popular Nepal Script") or, more simply, नेपाल लिपि 'Nepal Lipi' ("Nepal Script") are being promoted for the script.

The name 'Prachalit' has been in vogue after Śākyavamśa first popularized it in 1953. However, Śākyavamśa uses the term not for a specific or standard form of the script, but for at least three different varities. For example, the 'Thaunkanhe Prachalit' script (see Figure 14) differs slightly from the 'Prachalit Newari' script (see Figure 15). Both of these differ slightly from the 'Prachalit' script that is currently promoted by Nepal Lipi Guthi (see Figure 24). The Nepal Lipi Guthi developed a standard for the script in 1989 and published it as *Pracalita Lipiyā Varņamālā* (1992).

2.1.1 Related Scripts of Nepal

In addition to the "flat-headed" *pācumola / nevāra ākhara*, the 1654 inscription of Pratap Malla mentions the names of two other scripts used in Newar linguistic tradition. These are the "curve-headed" or "hooked" गोलमोल golamola and "delightful" (रञ्जा *rañjā*) scripts. These are known by the modern names भुजिमोल *bhujimmola* 'Bhujinmol' and रञ्जना *rañjanā* 'Ranjana'. These scripts developed from the *pācumola* model in the 11th century (Malla 1981: 23). The Bhujinmola or "fly-headed" script emerged around 1042 CE and was used alongside the Newari script until the 14th century. The Ranjana script first appeared in Nepal in 1099 in Mahayana Buddhist texts and was popular until the end of the Malla period in the middle 18th century.

Śākyavamśa identified six other scripts in addition to 'Prachalit', 'Bhujinmol', and 'Ranjana'. These he called पाचूमोल 'Pachumol', हिंमोल 'Hinmol', कूंमोल 'Kunmol', गोलमोल 'Golmol', क्रेंमोल 'Kvenmol', and लितुमोल 'Litumol'. To this he also adds 'Thaunkanhe Prachalit' and 'Prachalit Newari'. Despite such a proliferation of scripts, actual usage of several forms is unattested beyond charts published in script hand-books. These scripts may be considered stylistic variants of 'Prachalit' and 'Bhujimol' and may be grouped with them based upon the structure of their headstrokes; indeed, the term मोल *mol* means 'head' and refers to the headstrokes by which Śākyavamśa names each script. The 'flat-headed' (*pācumola*) scripts consist of 'Pachumol', 'Hinmol', and 'Thaunkanhe Prachalit' / 'Prachalit Newari'; the 'curve-headed' (*golamola*) group consists of 'Bhujinmol', 'Golmol', 'Kunmol', 'Kvenmol', and 'Litumol'. Additional information regarding the classification of these scripts is provided by Michael Everson in "Roadmapping the scripts of Nepal" (N3692 L2/09-325), which includes possible approaches to encoding them in the UCS.

2.1.2 Development

The Newar script is a descendent of Brahmi through the northern Gupta script. It belongs to the 'Kutila' or 'proto-Bengali' family and is related to the Bengali, Oriya, and Tirhuta scripts. It is also considerably influenced by Devanagari. Tables that illustrate the evolution of Newar characters from Brahmi are shown in Figure 31. A distinct Newar script emerged in the 10th century. The first recorded use of the script is a manuscript of the *Lankāvatāra Sūtra*, which is dated to 908 CE (see Figure 3). The script was actively used until the beginning of the 20th century. Usage of both the script and the Newar language was banned in Nepal in 1905 by the Rana government. The Rana regime 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.

The Newar script was first adapted for printing 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.

Several projects wand organizations were instituted in the latter half of the 20th century for the preservation and promotion of Newar linguistic traditions. 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 in 2002 by the Nepalese-German Manuscript Cataloguing Project (NGMCP) 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.

Newar organizations began in the 1980s to promote scholarship in the language and attempted to revive usage of the script. Two community-based 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 been the most active in the promotion of the Newar script. It developed a standard for the script 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.

2.1.3 Usage

The Newar script has been used over a thousand-year period for inscriptions and manuscripts. 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 was used on coins issued by various rulers of the Malla dynasties 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. *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 13). The *Thapu* is a literary annual (edited by Rajit Bahadur Shrestha) published by Lipi Thapu Guthi, Lalitpur.
- 6. Government Publications The script is also used in official government publications. In Sikkim,

the Newar script is used for the Newar-language edition of the government bulletin titled *Sikkim Her-ald* (sub-editor Meena Pradhan), published by the Department of Information and Public Relations, Government of Sikkim.

- 7. *Ephemera* The script is used on cover pages of books, the masts of newspapers, greeting cards, invitations, banners, and in signage.
- 8. Digital Publications Activities aimed at the use and preservation of the Newar script and language are currently conducted in digital media. "Nepal Lipi Online" নিমান লিমি স্লাইল publishes an annual supplement in the script, which is distributed in Portable Document Format (PDF).
- 9. Digitized Typefaces Several digitized Newar typefaces have been developed and are used for producing print and digital publications. The first digitized Newar typeface, a TrueType font, was developed by Sunil Maharjan in 1994 for Navin Press. "Newa Regular" was developed by Subhash Printing Press in 1999. A third font was developed by Rabindra Pachhai in 2000, which was used by Nepal Lipi Guthi. Also in 2000, 'Rabison Nepal Lipi' was produced by Rabison Shakya. Several others followed. The 'Kumari' font was designed by Rajendra Shrestha. Another typeface is 'Swati' designed by Samir Karmacharya. These typefaces are based upon legacy encodings. The most recent Newar font, 'Aakha', is being developed by Suwarn Vajracharya and a team of designers. It is an OpenType font based upon the Unicode encoding for Devanagari. A comparison of these typefaces is shown in tables 2–5.

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 Proposal Details

3.1 Principles for Encoding the Script

The Newar script proposed here for encoding is intended for representing various forms of the script, from the Pachumola of Old Newar manuscripts to forms of Prachalit to the current Nepal Lipi. In order to ensure the encoding of various historical and modern Newar texts, the character repertoire contains characters attested in sources from various periods. It should be understood that these characters are part of the Newar script and the various historical scripts styles are variants of a distinct Newar script.

3.1.1 Justification for Independent Encoding

Although the Newar script is based upon the same model as Devanagari and Bengali and has several letterforms in common with these scripts, it has several distinct features that require independent encoding for the script. It is distinct from them in terms of shaping behaviors, orthography, as well as character shapes. A comparison of Newar and Devanagari is shown in figures 25–28. The chief differences between Newar and other Brahmi-based scripts are the behavior of certain vowel signs in certain consonant environments; the behavior of certain consonants in non-initial position; and the use of independent ligatures for particular consonant conjuncts. These are standard features of Newar orthography. Proper representation of Newar in plain-text requires the preservation of its distinct rendering behaviors. This can only be accomplished at the character level, through character content that is independent of font changes or other formatting.

3.2 Name for the Script Block

'Newar' as Name for Script Block The name assigned to a script block in the Universal Character Set should be distinctive. It should uniquely identify the script and assist both a local and an international audience in recognizing the writing system. For this reason, the name assigned to the proposed script is 'Newar'. The name 'Newar' is the anglicized form of the Newar self-designation $\exists \exists \exists : nev \bar{a}h$. It is the most distinctive and universally recognizable name for the script. 'Newar' is the regular English name used in Nepal and at the international level in reference to the community, language, and script. Moreover, the name is used in official Nepali and English records in Nepal, for instance in the 2001 Census of Nepal.

Constraints of Other Names Other names for 'Newar' are indigenous, external, and historical names, such as 'Newa Akha', 'Newari', 'Nepal Lipi', 'Prachalit Lipi', 'Prachalit Nepal Lipi', etc., including variations that use English translations of 'Lipi' as 'Script', such as 'Nepal Script', etc. Local users prefer the name 'Nepal Lipi' or 'Nepal', but this name is not admissable for the reasons described below. The above-given names do not appropriately or uniquely identify the script in an international context and are not recommended for the proposed script block for the reasons stated below.

- 1. 'Newa' / 'Newa Akha' The name `गनाश जासा? / नेवा: आख: nevāḥ ākhaḥ "Newa script" is the Newar name for the traditional writing systems used for writing the Newar language. The term nevāḥ is the indigenous self-designation and ākhaḥ is derived from Sanskrit अक्षर akṣara ''letter''. The name nevāḥ is written in simplified romanization as 'Newa', 'Newah', and 'Newa:', where ':' is used in the latter for representing vowel length. 'Newa' is a suitable name that uniquely identifies the writing system, but it is not as widely-recognized as 'Newar'.
- 2. 'Newari' The term नेवारी 'Nevari' or 'Newari' is the most commonly used reference for the language and script in Nepali and Western scholarly literature. To be sure, 'Newari' is the most suitable name for the script block name in terms of universal identification. The term 'Newari' was first used by Capuchin missionaries in the 1740s in their dispatches to Rome (Kamal P. Malla, personal correspondence, 2011). The term was introduced into English in the early 19th century and is still used at present in Nepal, India, and globally. Brian Hodgson is believed to have popularized the English use of the name. In an article from 1822, Hodgson refers to the script eponymously when he writes "A variety of characters is met with in the Nepalese books, both *Newari* and *Bhotiya*" (1822: 417). To this he adds that "The three *Newari* alphabets are denominated *Bhanjin Mola, Ranja*, and *Newari*" (*ibid*). Modern, well-respected Nepalese scholars such as Kamal P. Malla and Dineshcandra Regmi continue to use the term in their English and Nepali writings. However, it is not used by the Newar community, who consider it to be a foreign designation. The disapproval of 'Newari' is linked to its etymology, 'Newar' + the Nepali adjectival suffix <-i>. The suffix is considered a Nepali innovation and linguistically non-Newar. On account of such attitudes towards 'Newari', the term is unsuitable as the name for the script block.
- 3. 'Nepal' / 'Nepal Lipi' / 'Nepal Script' The name नेपाल लिपि / नेपाल लिपि 'Nepal Lipi' is promoted by some members of the Newar community as the formal name for the script. The use of the name 'Nepal' in 'Nepal Lipi' points to the traditional Newar conception of Nepal as a limited demarcation of the Kathmandu Valley, which is believed to be the indigenous territory of the Newars. The name 'Nepal' indeed originates from the Newar language, but it has lost its original specification and now refers to various other historical and modern geographic configurations. Thus, in the indigenous conception, 'Nepal Lipi' signifies the "script of the Kathmandu Valley" to Newars. However, at present,

'Nepal' ubiquitously refers to the Republic of Nepal. As such, the name 'Nepal Lipi' is ambiguous and confusing. The most significant constraint of the name 'Nepal Lipi' is that it does not uniquely identify the Newar script. The semantic ambiguity of 'Nepal' in 'Nepal Lipi' inaccurately designates the Newar script as the national writing system of the Republic of Nepal. To an international audience, the term 'Nepal Script' evokes the script used for writing Nepali, which at present is the Devanagari script. Furthermore, the term 'Nepal Lipi' is generically used for referring to other traditional scripts for writing the Newar language, which include Ranjana, the 'Prachalit' script, and Bhunjimol, as well as variant forms of these. Thus, it is also a categorical term, and not the proper name of a single, distinct writing system.

- 4. 'Nepālākṣara' The name नेपालाक्षर *nepālākṣara* 'Nepal Akshar' is synoymous with 'Nepal Lipi', describe above. It is rendered in English as 'Nepal Script'.
- 5. 'Nepalese' The Newar and related scripts are sometimes referred to as 'Nepalese scripts'. The term 'Nepalese' is another English form of the term 'Nepali'. It does not uniquely identify the Newar script.
- 6. 'Prachalit' The term प्रवलिग 'Prachalit' is derived from the Sanskrit प्रचलित *pracalit*, which means "established" or temporally "current" or "popular". The term प्रचलित लिपि *pracalit lipi* is used in various South Asian languages for referring to the script in which a language is presently written, as distinguished from historical writing systems for the same. Thus, 'Prachalit' is not a proper name and does not uniquely identify the Newar script. It is too generic to serve as a formal name for a script in an international standard. Moreover, it is ambiguous. The term 'Prachalit Nepal Script' or the "current script of Nepal" may also refer to Devanagari, which is the *pracalit lipi* for the Nepali language.
- 7. 'Thaunkanhe Prachalit' The Newar term (थांकङ्ग प्रवलिग जास) / थोंकन्हे प्रचलित आख thaumkanhe pracalit akha means the "current standard" or "current popular" script. It is semantically equivalent to 'Prachalit'. The term is used by Nepali authors, such as Hemarāja Śākyavamśa (1953) for referring to the current script used for writing the Newar language. It is not a proper name, but an adjective that refers to the modern variant of the Newar script.

In addition to the above, names that contain descriptors such as 'Lipi' and 'Script', or other indigneous names for "script", or terms that refer to typological categories of writing systems, such as 'alphabet', are not suitable in names for UCS script blocks. These terms are not used on account of semantic redundancy: all scripts encoded in the UCS are 'scripts', eg. 'Latin script', 'Devanagari script', etc. Moreover, names that contain temporal-specific descriptors, such as 'current' or 'popular' or 'standard' are not suitable because what is *pracalit* 'current', 'popular', or 'standard' is subject to change. These categorical terms are inappropriate because they are generic and ambiguous and do not provide sufficient context for uniquely identifying a script and limit the historical scope of the script encoding.

Appropriateness of the Name 'Newar' Of the various names used for the script, 'Newar' is most suitable for uniquely identifying the script. This term first appears in local sources in 1652 (Ns 772) and is the Prakrit derivation of the Sanskrit नेपाल *nepāla* (van Driem 2001: 731). As the term 'Newari' was considered objectionable by Newars, the name 'Newar' has been used in English sources since the early 19th century and it remains the most common term of reference. The name is used by modern scholars, the rationale for which is described by Carol Genetti in *A Grammar of Dolakha Newar*:

Currently there is no consensus among the Newars themselves or among the scholars working on Newar as to which language name is best. I have chosen to use the term Newar as the term which seems least objectionable to people both within and outside the Newar community. It also has the advantage of being very similar to "Newari", so scholars first encountering the language are likely to correctly assume that the two terms refer to the same language. (Genetti 2007: 10)

Another scholar, Miranda Shaw, provides additional details on the current preference for the name 'Newar':

I use the term "Newar" both nominally and adjectivally throughout my study, although the current practice in scholarly writing is to use "Newari" to designate the Newar (*newāḥ*) language and as an adjective for things Newar. My decision defers to Newar political and scholarly efforts to eliminate usage of "Newari," a neologism apparently introduced into scholarly usage by Brian Hodgson in the late nineteenth century. The term "Newari," rendered in Nepali script as *nevārī*, has been so applied and imposed in a range of legal, legislative, and academic contexts that it has come for some Newars to symbolize Nepali political, social, and academic hegemony. (Shaw 2006: xi)

These descriptions indicate conscientious usage of 'Newar' in the English medium by scholars. The other names may be suitable within a local Newar context, but they are not distinctive enough for an international standard. This is important because the script is used outside of Nepal, for instance in Sikkim, where it is used for writing a Newar edition of the *Sikkim Herald*.

'Newar' is distinct and appropriately indicates its association with the Newar community and its language. The Newar community advocates the script under the banner of 'Nepal Script'. While this name holds significance locally, it is confusing at an international level. For persons outside of the Newar community, the name 'Nepal Script' evokes "the script used in (the Republic of) Nepal" or "the script used for writing the language of Nepal", etc. In this sense, 'Nepal Script' may refer to Devanagari, which is used for writing Nepali, the "language of Nepal" in conventional understanding. Similarly, to an international audience the name "Nepal Bhasa" draws an association with the modern Nepali nation-state and the Nepali language.

Advantages of the Name 'Newar' Despite the etymology of the name 'Nepal' and its sociolinguistic configurations for the Newar community within the Republic of Nepal, usage of the name 'Nepal Script' or any other local name at the international level will diminish the identity of the script. If members of the Newar community seek to promote the Newar script in order to preserve and revitalize it, the best chance for success in these efforts lies in accepting a script name that is distinctive and uniquely associated with their linguistic tradition. In such a case, the term 'Newar' will clearly indicate that the script encoded in the UCS is that used for writing the Newar language and that it is the writing system associated with the Newar community. As such, the name 'Newar' will best facilitate identification and recognition of the script in an international standard both within and beyond Nepal. Members of the Newar community may assign local aliases, such as 'Prachalit Lipi' and 'Nepal Lipi', to the Newar script for the purpose of representing various historical and current variations of the script.

3.3 Character Names

Names for Newar characters follow the UCS convention for Brahmi-based scripts. Some character names differ from those used in the Newar language. Newar names for characters are included in the names list as aliases.

3.4 Character Repertoire

A total of 83 characters is required to encode a basic character set for Newar. The proposed code chart and names list are shown in figures 1 and 2. Several other characters that are attested in manuscripts and other sources have been identified (see Section 5); however, additional research is required in order to determine the suitability of encoding them in the UCS.

3.5 Allocation

The Newar block is allocated to the Supplementary Multilingual Plane (SMP) at the range U+11400..1147F.

3.6 Font

The Newar font used here is based upon the font developed by Rabison Shakya in 2002 for his *Nepala Lipi Varnamala: Alphabet of the Nepalese Script.* Modifications have been made to Shakya's original font and several new glyphs have been added by the present author.

4 Writing System

4.1 Structure

The general structure (phonetic order, *mātrā* reordering, use of *virāma*, etc.) of Newar is similar to that of Devanagari and other Indic scripts based upon the Brahmi model. 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.

4.2 Virāma

The Newar $\[virama is identical in its behavior to the Devanagari virama. The virama is used for silencing the inherent vowel of a consonant. It is also used for encoding conjuncts, in which each bare consonant is followed by virama.$

A visible VIRAMA is produced by writing 🕅 U+200C ZERO WIDTH NON-JOINER after VIRAMA. The Newar name for VIRAMA is ন্নিধানা tutipālā; the name हलन halant is also used.

4.3 Vowels

There are 14 vowel letters, known as माँ आसा mām ākhah:

ञ्	Α	उ	U	C	VOCALIC L	স	0
স্	AA	ব্য	UU	J	VOCALIC LL	ॲॊ	AU
šó	Ι	¥	VOCALIC R	1	E		
õ	п	₽Į	VOCALIC RR	J	AI		

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

4.4 Vowel Signs

There are 13 dependent vowel signs:

्रा	SIGN AA	ু	SIGN UU	್ಳ	SIGN VOCALIC LL	ী	SIGN AU
િ	SIGN I	ূ	SIGN VOCALIC R	$\widetilde{}$	SIGN E		
ါ	SIGN II	ূ	SIGN VOCALIC RR	्र	SIGN AI		
্	SIGN U	ु	SIGN VOCALIC L	র্ণ	SIGN O		

The $\tilde{\circ}$ vowel sign e, $\tilde{\tilde{\circ}}$ vowel sign AI, $\tilde{\circ}$ vowel sign o, $\tilde{\tilde{\circ}}$ vowel sign AU replace the headstroke of consonants to which they attach. These signs, as well as \circ vowel sign AA, are written using contextual forms when they occur in combination with certain consonants. The conditions and rules governing the representation of vowel signs are described in Section 4.7.

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

4.5 Vowel Length

Vowel length is indicated by the sign 3 VISARGA, which is named $\overline{44}$ in Newar. This sign corresponds to Devanagari 3 VISARGA. The sign retains its original function in Sanskrit texts written in the Newar script (see Section 4.10).

4.6 Consonants

There are 33 consonant letters, known as वाश जारबश bāh ākhah:

ক	KA	Эş	NYA	ધ	DHA	ल	LA
ख	КНА	ट	TTA	ন	NA	व	VA
ป	GA	0	TTHA	प	РА	শ	SHA
घ	GHA	ত	DDA	रू	РНА	ष	SSA
ሯ	NGA	ਫ	DDHA	व	BA	स	SA
ব	CA	ଣ	NNA	হ	ВНА	ह	HA
ऋ	СНА	ባ	ТА	म	MA		
ব	JA	થ	THA	य	YA		
म	JHA	द	DA	ন	RA		

Each consonant letter bears the inherent vowel /a/, represented by $\overline{\mathfrak{A}}$ A. The inherent vowel is silenced using \bigcirc VIRAMA. Consonant clusters are written as conjuncts (see Section 4.8).

4.6.1 Additional Consonantal Forms

There are several letters that are traditionally included as part of the consonant repertoire: Ξhna , Ξhna

table below shows the character sequences that will correctly render these conjuncts, as well as the output of transposed sequences:

Expected represe	entati	on	Transposed representation			
<ह HA, ्, ढ NGA>	ନ୍ଥ	hṅa	<ढ NGA, ्, ह HA>	Se	'nha	
<ह HA, ्, ३ NYA>	ব্ধ	hña	< ३ NYA, ्, ह HA>	ટ્ર	ñha	
<ह _{HA,} ्, १ _{NNA} >	দ্ধ	hṇa	<१ NNA, ्, ह HA>	ଘୁ	hṇa	
<ह _{HA,} ्, न _{NA} >	র্ন	hna	<न NA, ्, ह HA>	नू	nha	
<ह _{HA} , ्, म _{MA} >	ፋ	hma	<म MA, ्, ह HA>	मू	mha	
<ह HA, ्, न RA>	ፍ	hra	<न RA, ्, ह HA>	न्ह	rha	
<ह HA, ्, ल LA>	দ্ধ	hla	<ल LA, ्, ह HA>	लू	lha	

The correct rendering of encoded sequences is crucial for accurately representing historical texts written in the Newar script, such as Sanskrit manuscripts.

4.6.2 Structure of Consonants

Consonants are classified into two categories based upon their graphical structure: those with a headstroke (भालय moladu 'headed') and those without (भालय molamadu 'headless'). There are 7 letters that do not have a head-stroke: ग GA, अ NYA, 0 TTHA, १ NNA, १ THA, १ DHA, १ SHA. When these letters occur in combination with certain vowel signs, the signs are written using contextual forms (see Section 4.7).

Consonant letters may be further classified based upon the number of edges that touch the head height. The number of edges determines the form of a letter in a conjunct.

- 1. *Headed letters* Consist of two subtypes:
 - (a) Single edge at head height: \mathfrak{T} KA, \mathfrak{C} NGA, \mathfrak{T} CA, \mathfrak{I} JA, \mathfrak{T} TTA, \mathfrak{I} DDA, \mathfrak{C} DDHA, \mathfrak{T} TA, \mathfrak{T} DA, \mathfrak{T} NA, \mathfrak{T} BA, \mathfrak{T} PHA, \mathfrak{T} BHA, \mathfrak{T} RA, \mathfrak{T} LA, \mathfrak{T} VA \mathfrak{F} HA
 - (b) Multiple edges at head height: 적 кна, 직 GHA, 중 CHA, 직 JHA, 직 PA, 직 MA, 직 YA, 직 SSA, 쥓 SA
- 2. *Headless letters* Consist of two subtypes:
 - (a) Single edge at head height: 키GA, 33 NYA, O TTHA, 키NNA, 커SHA
 - (b) Multiple edges at head height: 9 THA, 9 DHA

4.6.3 Contextual Forms of Consonants

Two letters have contextual forms when they occur in certain consonant-vowel combinations: Т вна is written as T; К на takes the shape त. See Section 4.7 for additional details.

4.6.4 Variant Forms

The following consonants have attested variant forms, which are to be managed at the font level:

	Regular	Variant
GA	ป	গ
JHA	म	ऊ
NYA	R	ক্য
RA	ন	ৰ
SHA	শ	ণ

4.7 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.

- 1. *'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 a wavy headstroke as part of their graphical structure. When they attach to a consonant letter that has a headstroke, the consonant's headstroke is removed: $\langle \mathfrak{T} \times \mathfrak{K} \rangle$, $\tilde{\circ}$ vowel sign $E > \rightarrow \langle (\mathfrak{T} \rightarrow \mathfrak{T}), \tilde{\circ} \rangle \rightarrow \mathfrak{T} ke$.
- 2. *Contextual Forms for 'Headless' Consonants* When a 'wavy-headed' vowel sign or vowel sign AA is written with a 'headless' consonant, the vowel sign has a contextual shape. The contextual forms of vowel sign AI, vowel sign 0, and vowel sign AU are two-part vowel signs.

	Regular	Contextual	Occurs with
VOWEL SIGN AA	া	া	গ GA, 33 NYA, O TTHA, গ NNA, থ THA, ધ DHA, শ SHA
VOWEL SIGN E	\sim	ে	গ GA, 33 NYA, O TTHA, গ NNA, & THA, & DHA, M SHA
VOWEL SIGN AI	$\circ \mathfrak{K}$	$\widetilde{\mathbf{O}}$	গ GA, স NYA, O TTHA, গ NNA, থ THA, ધ DHA, শ SHA
VOWEL SIGN O	র্	(া	গ GA, 33 NYA, O TTHA, গ NNA, & THA, & DHA, M SHA
VOWEL SIGN AU	ল	ৌ	গ GA, স NYA, O TTHA, গ NNA, থ THA, ધ DHA, শ SHA

Examples: $<\mathfrak{I}$ GA, \subset VOWEL SIGN AA> $\rightarrow <\mathfrak{I}$, $(\subset I \rightarrow \cap I)> \rightarrow \mathfrak{I}$ $g\bar{a}$; $<\mathfrak{I}$ GA, \subset VOWEL SIGN E> $\rightarrow <\mathfrak{I}$, $(\subset \rightarrow \cap I)> \rightarrow \mathfrak{I}$ $g\bar{a}$; $<\mathfrak{I}$ GA, \subset VOWEL SIGN E> $\rightarrow <\mathfrak{I}$, $(\subset \rightarrow \cap I)> \rightarrow \mathfrak{I}$ $g\bar{a}$.

3. *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, ঀ TA, ঀ BHA, ৸ SHA

4. *Contextual Forms of Consonant Letters* In addition to the above, the shapes of some consonant letters are modified before certain vowel signs are attached

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

5. *Ligatures* The following CV combinations are written as ligatures:

LigatureEncoded Representation $\overline{\mathfrak{A}}$ ju $<\overline{\mathfrak{A}}$ JA, $\ \lor$ VOWEL SIGN U> $\overline{\mathfrak{A}}$ j \overline{u} $<\overline{\mathfrak{A}}$ JA, $\ \circlearrowright$ VOWEL SIGN UU> $\overline{\mathfrak{R}}$ ru $<\overline{\mathfrak{A}}$ RA, $\ \circlearrowright$ VOWEL SIGN U> $\overline{\mathfrak{R}}$ r \overline{u} $<\overline{\mathfrak{A}}$ RA, $\ \circlearrowright$ VOWEL SIGN U>

4.8 Consonant Conjuncts

Consonant clusters are written as conjuncts. Newar conjuncts are written vertically, horizonally, and as independent ligatures. The orientation of a conjunct is dependent upon the letters that occur in the conjunct. Conjuncts are represented 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 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.

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		Ci		C	ni			(Ci	_	C _{ni}	
		Cond	Half	Cond	Post			Cond	Half	_	Cond	Post
KA	ক	म		বা	_	DA	द	द	_		પ	_
КНА	ख	ख	रू	२व	_	DHA	ध	ધ	ړې		ม	
GA	থ	গ	2	গ	_	NA	ন	न	<u> </u>		ન	
GHA	घ	घ	ਓ	ਹ		РА	य	प	ᡶ		ਧ	
NGA	2	ᠴ		6		РНА	रू	ৰ্ম্ব			k	
CA	ব	ব	ट	ঘ		BA	व	व	c		ব	
СНА	क्र	स्र		炙		BHA	ন্	1	4		Q	
JA	ব্য	শ		স		MA	म	म	Ŧ		ᅯ	
JHA	म	म	र	거		YA	य	य	र		고	
NYA	R	ગર	_	33		RA	ন	_	<u>~</u> , '		শ	_
TTA	ट	ट	_	ર		LA	ल	ल	$\overline{\gamma}$		ল	_
TTHA	0	Q		D		VA	व	ব	2		ব	_
DDA	ত	ত	_	٥		SHA	শ	м	8		81	_
DDHA	ਫ	ढ		ರ	_	SSA	ष	ष	ठ		ਙ	
NNA	ଣ	કા	ઈ		c	SA	स	स	रू		ধ	
ТА	ባ	ন	٢		า	НА	ह	ব			٤	
THA	થ	થ	શ	_	Φ							

Table 1: Various forms of consonant letters in conjuncts. Forms are shown for consonant in initial (C_i) and non-initial positions (C_{ni}) . 'Cond' = condensed form; 'Half' = half-form; 'Post' = postbase form.

4.8.1 Conjunct Formation

The general rules for conjunct formation are described below. Additional rules for 'headless' letters in conjuncts are specified in Section 4.8.3.

- 1. Single edge with descender This pertains to the consonants $\overline{\P}$ KA, $\overline{\P}$ GA, $\overline{\P}$ CA, $\overline{\P}$ NNA, $\overline{\P}$ NA, $\overline{\P}$ BA, $\overline{\P}$ RA, $\overline{\P}$ LA, $\overline{\P}$ VA, $\overline{\P}$ SHA. These letters join at top and bottom terminals of the descender: $<\overline{\P}$ KA, $\overline{\bigcirc}$, $\overline{\P}$ VA> $\rightarrow \overline{\P}$ kva; $<\overline{\P}$ KA, $\overline{\bigcirc}$, \overline{C} TTA> $\rightarrow \overline{\P}$ kta; $<\overline{\P}$ GA, $\overline{\bigcirc}$, $\overline{\P}$ RA> $\rightarrow \overline{\P}$ gra; $<\overline{\P}$ SHA, $\overline{\bigcirc}$, $\overline{\P}$ CA> $\rightarrow \overline{\P}$ sca; $<\overline{\P}$ LA, $\overline{\bigcirc}$, $\overline{\P}$ LA> $\rightarrow \overline{\P}$ lla. The letter NNA has special behavior when it is non-initial (see #5 below).
- 2. Single edge with no descender This pertains to the consonants Z NGA, ℑ JA, ℬ CHA, ℑ NYA, Z TTA, 0 TTHA, ℑ DDA, Z DDHA, ག TA, 록 DA, 록 PHA, ག BHA, ན HA. These letters join to following letters at the center of the bottom curve: <ఔ CHA, ལ, ག RA> → 第chra; <ℑ NYA, ལ, ག CA> → 第 ñca. They join to preceding letters at the top-most edge: <록 DA, ལ, 록 DA> → ℑ dda. The letters JA, TTHA have special behavior when it is non-initial (see #5 below).
- 3. Multiple edges with descender This pertains to the consonants $\overline{\mathfrak{A}}$ KHA, $\overline{\mathfrak{A}}$ GHA, $\overline{\mathfrak{A}}$ JHA, $\overline{\mathfrak{A}}$ THA, $\overline{\mathfrak{A}}$ DHA $\overline{\mathfrak{A}}$ PA, $\overline{\mathfrak{A}}$ MA, $\overline{\mathfrak{A}}$ YA, $\overline{\mathfrak{A}}$ SSA, $\overline{\mathfrak{A}}$ SA. These letters join to following letters at the bottom terminal of the right descender: $\langle \overline{\mathfrak{A}}$ MA, $\overline{\mathfrak{A}}$, $\overline{\mathfrak{A}}$ BA> $\rightarrow \overline{\mathfrak{A}}$ mba, $\langle \overline{\mathfrak{A}}$ MA, $\overline{\mathfrak{A}}$, \mathfrak{N} NYA> $\rightarrow \overline{\mathfrak{A}}$ mña. They join to preceding letters at the top edge of the lowered left descender: $\langle \overline{\mathfrak{A}}$ LA, $\overline{\mathfrak{A}}$, $\overline{\mathfrak{M}}$ MA> $\rightarrow \overline{\mathfrak{A}}$ LMA; $\langle \overline{\mathfrak{A}}$ LA, $\overline{\mathfrak{A}}$, $\overline{\mathfrak{A}}$ A> $\rightarrow \overline{\mathfrak{A}}$ mNA, $\overline{\mathfrak{A}}$, $\overline{\mathfrak{A}}$ JHA> $\rightarrow \overline{\mathfrak{A}}$ mNA, $\overline{\mathfrak{A}}$, $\overline{\mathfrak{A}}$ JHA> $\rightarrow \overline{\mathfrak{A}}$ mNA, $\overline{\mathfrak{A}}$, $\overline{\mathfrak{A}}$ JHA> $\rightarrow \overline{\mathfrak{A}}$ mA, $\overline{\mathfrak{A}}$, $\overline{\mathfrak{A}}$ AA> $\rightarrow \overline{\mathfrak{A}}$ mAA> $\rightarrow \overline{\mathfrak{A}}$ LMA; $\langle \overline{\mathfrak{A}}$ LA, $\overline{\mathfrak{A}}$, $\overline{\mathfrak{A}}$ A> $\overline{\mathfrak{A}}$ NYA, $\overline{\mathfrak{A}}$, $\overline{\mathfrak{A}}$ JHA> $\rightarrow \overline{\mathfrak{A}}$ mA, $\overline{\mathfrak{A}}$, $\overline{\mathfrak{A}}$ YA> $\rightarrow \overline{\mathfrak{A}}$ mya; $\langle \overline{\mathfrak{A}}$ SA, $\overline{\mathfrak{A}}$, $\overline{\mathfrak{A}}$ PA> $\rightarrow \overline{\mathfrak{A}}$ mA> $\overline{\mathfrak{A}}$ SMA. These letters have special behaviors when they occur in conjuncts with 'headless' letters (see Section 4.8.3).
- 4. *Independent Ligatures* Some consonant sequences are depicted as independent conjuncts, in which the constituent letters are not distinct:

Sequence		Ligature
< क _{KA,} ्, य _{SSA} >	\rightarrow	ઝા _{kṣa}
< र्ग _{JA,} ्, ३ _{NYA} >	\rightarrow	₹jña
<ग _{TA,} ्, ग _{TA} >	\rightarrow	<u>্য</u> ় tta

- 5. *Exceptions* Certain consonants have other shaping behaviors when they occur in conjuncts:
 - (a) \mathfrak{T}_{KA} When C_i , κ_A takes the shape \mathfrak{T} . When followed by a consonant with two descenders, κ_A is written 'around' the condensed form of the letter, with the right 'arm' of κ_A extending through the following letter: $\langle \mathfrak{T}_{KA}, \heartsuit, \mathfrak{T}_{MA} \rangle \rightarrow \langle \mathfrak{T}, \heartsuit, \mathfrak{T} \rangle \rightarrow \mathfrak{T}_k ma$.
 - (b) $\overline{\mathfrak{I}}$ JA When C_i , JA is written as $\overline{\mathfrak{I}}$: $\overline{\mathfrak{I}}$ JA, \mathbb{Q} , $\overline{\mathfrak{I}}$ VA $\rightarrow \overline{\mathfrak{I}}$ *jva*. When followed by a consonant with two descenders, JA is written 'around' the condensed form of the letter, with the right 'arm' of JA extending through the following letter: $\langle \overline{\mathfrak{I}}$ JA, \mathbb{Q} , $\overline{\mathfrak{I}}$ MA> $\rightarrow (\overline{\mathfrak{I}}, \mathbb{Q}, \overline{\mathfrak{I}}) \rightarrow \overline{\mathfrak{I}}$ *jma*.
 - (c) \forall NNA When C_{ni} , NHA is represented using the form β , eg. $\langle \overline{4} \rangle$ ssa, $\langle , \overline{4} \rangle$ NNA $\rangle \rightarrow \overline{4}$, s na.
 - (d) \P TA When TA is C_i its normal shape is \circlearrowright . When it occurs before \P KA and \P sA it is written as \circlearrowright , eg. \P TA, \circlearrowright , \P SA = \P tsa. When it is non-initial in a conjunct, it is written as \circlearrowright : \P NA, \circlearrowright , \P TA = \P nta.
 - (e) \mathfrak{P} THA When THA is C_{ni} , it is represented using the form \mathfrak{B} , eg. \mathfrak{R} sA, \mathfrak{I} , \mathfrak{P} THA $\rightarrow \mathfrak{R}$ stha.

- (f) \exists RA The normal behavior of RA as C_i is the half form \exists . In certain environments, such as words of Sanskrit origin RA is written as \circ . The *repha* is represented as $< \exists$ RA, \bigcirc VIRAMA, $[\breve{x}]$ zwJ>, as is the convention in Devanagari.
- (g) \mathcal{F} HA When HA is C_i it is written as the half form \mathcal{F} . Non-initial letters are written within the lower left curve of the half form. When followed by a consonant with two descenders, HA is written 'around' the condensed form of the letter, with the right 'arm' of HA extending through the following letter: \mathcal{F} HA, \mathcal{Q} , \mathcal{F} MA $\rightarrow (\mathcal{F}, \mathcal{Q}, \mathcal{F}) \rightarrow \mathcal{F}$ hma.

4.8.2 Orientation

Although the current preference is for producing vertical conjuncts, horizontal representations are attested in manuscripts. The multiple representations usually occur with letters that have right descenders, eg. $< \overline{1}$ NA, \bigcirc , $\overline{4}$ DA> may be written as $\overline{4}$ and $\overline{4}$. Conjuncts may also be written horizontally when clusters contain more than two consonants, eg. $<\overline{1}$ NA, \bigcirc , $\overline{4}$ DA, \bigcirc , $\overline{1}$ RA> is written as $\overline{4}$ *ndra*.

4.8.3 Shaping Rules for 'Headless' Consonants

When a 'headless' letter is followed by a 'headed' letter that has multiple edges at the head-height, the headstroke of the letter is removed and replaced by a short diagonal stroke (*svāputi*) that connects the two letters. This stroke extends from the right top edge of the 'headless' letter and connects to the 'headed' letter at a position at 3/4 of the height of the right descender. This behavior occurs with the following 'headed' letters \mathfrak{A} KHA, \mathfrak{A} GHA, \mathfrak{A} JHA, \mathfrak{A} PA, \mathfrak{A} MA, \mathfrak{A} SSA, \mathfrak{A} YA. For example, $<\mathfrak{A}$ GA, \mathfrak{Q} , \mathfrak{A} YA> $\rightarrow \mathfrak{A}$ *gya*; $<\mathfrak{A}$ DHA, \mathfrak{Q} , \mathfrak{A} MA> $\rightarrow \mathfrak{A}$ *dhma*;

The use of contextual forms of vowel signs with 'headless' letters is discussed in Section 4.7. The same rules for these signs pertain to 'headless' letters when they appear as the base letter in conjuncts.

4.8.4 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 these depictions of conjuncts may not be used in Newar orthography, they are necessary for the representation of the script in plain text.

4.9 Nasalization

Nasalization is indicated using two signs:

- 1. ं CANDRABINDU The *candrabindu* represents a 'short' nasal. It is known in Newar as मिलाय्गी*milāputī*. The variant form is attested.
- 2. Å ANUSVARA The anusvāra represents a 'long' nasal'. In Newar it is called सिन्नप्री sinhaputī. The variant form ं is also attested.

Other nasalization signs are used in Newar manuscripts; however, further research is required in order to describe their usage (see Section 5).

4.10 Signs for Sanskrit

- 1. °⁸ VISARGA This sign represents an allophone of ∃ RA or ₹ SA at word-final position in Sanskrit orthography. The variant forms °: and °⁸ are attested. The VISARGA is also used for marking vowel lengthening (see Section 4.5).
- 2. $\$ AVAGRAHA This sign is used for marking the elision of word-initial $\exists a$ in Sanskrit as a result of sandhi when the preceding word ends with the vowels $\exists E$ or $\exists I$ o. The variant form ξ is attested.

4.11 Invocations

The following characters are used as invocations:

- 2. १ ANJI This sign represents the Sanskrit invocation सिद्धिरस्तु siddhirastu. In Newar it is called लिन जानज्ञ bhin ārambha. It is often written with उठ om, eg. १उँ. The sign corresponds to āñjī characters in related scripts such as 9 Bengali, b U+11480 TIRHUTA ANJI, Ž U+AAF2 MEITEI MAYEK ANJI. It represents the ankuśa "goad" of the Hindu deity Gaņeśa.
- 3. 🔊 SVASTI This sign represents the Sanskrit benediction यसि। / स्वस्ति svasti.

4.12 Digits

Newar has a full set of decimal digits: ° ZERO, ^१ ONE, ^२ TWO, ^३ THREE, ⁸ FOUR, ³ FIVE, [§] SIX, [¶] SEVEN, [₹] EIGHT, [®] NINE.

4.13 Punctuation

Several forms of punctuation are used:

- 1. I DANDA and U DOUBLE DANDA The ends of sentences and larger text blocks are indicated with I DANDA and U DOUBLE DANDA. Newar names for these characters are सीप् चीच्न *dīpu cīnha* and नी(धा सीप् चीच्न *nīdho dīpu cīnha*, respectively. The *daṇḍā*-s have several variant forms, eg. I and I, etc. The distinct appearance of Newar *daṇḍā*-s and the existence of variant forms requires that these characters be encoded separately.
- 2. ² PADA SANDHI MARK The PADA SANDHI MARK is used in manuscripts for indicating a word break at the end of line. Its function is similar to that of a hyphen. It has several variant forms, such as ² and [§]. Other forms are shown in Figure 32.
- 3. COMMA The Newar COMMA is used as a phrase separator. It is attested in inscriptions and manuscripts.
- 4. CFULL STOP The Newar FULL STOP is used for indicating the end of longer portions of text. It is attested in several manuscripts. It is similar to the Bengali-like *anusvāra* c that is also attested for representing nasals (see Section 5 item #1).
- 5. Word Separator A middle dot is often used in manuscripts for indicating word boundaries. This character may be written using the already encoded · U+00B7 MIDDLE DOT.

4.14 Linebreaking

Linebreaking follows the rules for Devanagari (see Section 6.2).

4.15 Collation

The primary collating order for Newar is as follows:

ज् Aज् AA \approx I \approx I \approx I \propto I \sim III</td

The following characters have secondary weights: CANDRABINDU, ANUSVARA, VISARGA, VIRAMA.

5 Characters Not Proposed

The intent of this proposal is to encode a core set of Newar characters. There are several signs and symbols found in Newar manuscripts, which are supplementary characters. Some of these characters are described below, along with the rationale for excluding them from encoding at present.

- 1. *Nasal Signs* The character : is used in several manuscripts as a nasalization sign. It is also written as :, which corresponds to the Bengali ANUSVARA. This character resembles the : FULL STOP described in Section 4.13.
- 2. 'Letter-Numerals' A system of numeric notation using letter-like characters instead of regular digits are used in several Old Newar manuscripts. These are called 'letter-numbers'. Distinct numbers are attested for the units (1–9), tens (10–90), and the hundreds up to 400. Examples of these letter-numbers are shown in Figure 34. There are several variants, but there is an underlying structure that unites these various forms, so it may be possible to develop a unified encoding for these numbers. At least 27 code points should be reserved for encoding a set of Newar 'letter-numerals'.
- 3. *Invocations* Several invocations are used at the beginning of Newar manuscripts (see Figure 32). These include characters such as [‡], ^β, ^β, ^β, ^β, etc. At present, only OM, ANJI, and SVASTI are proposed for encoding (see Section 4.11); others require additional research in order to determine if they are variants of proposed characters or distinct characters.
- 4. *Editorial Marks* Various editorial marks used in manuscripts for indicating the addition and deletion of text, eg. * *kākapada*. Several such characters are shown in Figure 32. Additional research is required in order to determine if these are Newar-specific marks or if there is a possibility of unifying them with other similar characters already encoded in the UCS.

- 5. *Ornaments* Manuscripts contain several ornaments and other flourishes that are used at the ends of text sections and at the end of document, eg. ⊕, ♥, ⋈, ⋈, ⋈, Others are shown in Figure 33). Additional research is required in order to determine the suitability or necessity of encoding them as distinct characters.
- 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 ○, ①, ⊕, ⊙, ⊙, Ô (Lienhard 1988: 142–143). Other symbols are ^e, ^a, ^z, ^z. Additional research is required in order to determine the number of such marks, their meanings, and the status of their usage.
- 7. *Vowels* The sign *τ*[◦] has been proposed as the character *vowel sign AE by some Newar users as a new addition to the script for representing the vowel /æ/ (see Figure 35). The vowel exists in Newar, but there is no distinct sign for it in the Newar, Devanagari, or any other script. Additional input from the user community and is required for gauging the necessity of such a new vowel sign.

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;;;;
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```
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 CANDRABINDU; Mn; 0; NSM; ;; ;; N; ;; ;;
1143D; NEWAR SIGN ANUSVARA; Mn; 0; NSM;;;;; N;;;;;
1143E; NEWAR SIGN VISARGA; Mc; 0; L;;;;; N;;;;;
1143F;NEWAR SIGN VIRAMA;Mn;9;NSM;;;;;N;;;;
11440; NEWAR SIGN AVAGRAHA; Lo; 0; L;;;;; N;;;;;
11441; NEWAR OM; Lo; 0; L;;;;; N;;;;;
11442; NEWAR ANJI; So; 0; L;;;;; N;;;;;
11443;NEWAR SVASTI;So;0;L;;;;;N;;;;;
11444; NEWAR DANDA; Po; 0; L;;;;; N;;;;;
11445; NEWAR DOUBLE DANDA; Po; 0; L;;;;; N;;;;;
11446;NEWAR COMMA;Po;0;L;;;;;N;;;;;
11447; NEWAR FULL STOP; Po; 0; L;;;;; N;;;;;
11448; NEWAR PADA SANDHI MARK; Po; 0; L;;;;; N;;;;;
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;;;;;
```

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
1143C..1143D ; Bindu
                                   # Mn [2] SIGN CANDRABINDU .. SIGN ANUSVARA
# Indic Syllabic Category=Visarga
                                        SIGN VISARGA
1143E ; Visarga
                                   # Mc
# Indic_Syllabic_Category=Avagraha
11440
        ; Avagraha # Lo SIGN AVAGRAHA
# Indic Syllabic Category=Virama
                                   # Mn SIGN VIRAMA
1143F ; 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 VOCALIC LL1143A..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:

```
# Indic_Matra_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
11438..11439 ; Top # Mn [2] VOWEL SIGN E .. VOWEL SIGN AI
# Indic_Matra_Category=Top_And_Right
1143A..1143B ; Top_And_Right # Mc [2] VOWEL SIGN 0 .. VOWEL SIGN AU
# Indic_Matra_Category=Bottom
11432..11437 ; Bottom # Mn [6] VOWEL SIGN U .. VOWEL SIGN VOCALIC LL
1143F ; Bottom # Mn SIGN VIRAMA
```

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 A11401 NEWAR LETTER AA; 0986 BENGALI LETTER AA11404 NEWAR LETTER U; 0909 DEVANAGARI LETTER U11405 NEWAR LETTER UU; 090A DEVANAGARI LETTER UU1140E NEWAR LETTER KA; 0915 DEVANAGARI LETTER KA
```

1140F	NEWAR	LETTER	KHA	;	0916 I	DEVANAGARI	LETTER	KHA		
11410	NEWAR	LETTER	GA	;	0997 H	BENGALI LET	FTER GA			
11411	NEWAR	LETTER	GHA	;	0918 I	DEVANAGARI	LETTER	GHA		
11415	NEWAR	LETTER	JA	;	099C H	BENGALI LET	FTER JA			
11416	NEWAR	LETTER	JHA	;	11497	TIRHUTA LE	ETTER JI	HA		
11417	NEWAR	LETTER	NYA	;	099E H	BENGALI LET	TTER NY	A		
11419	NEWAR	LETTER	TTHA	;	1119C	SHARADA LE	ETTER T	ТНА		
1141C	NEWAR	LETTER	NNA	;	1149D	TIRHUTA LE	ETTER NI	NA		
1141E	NEWAR	LETTER	THA	;	0925 I	DEVANAGARI	LETTER	THA		
1141F	NEWAR	LETTER	DA	;	0926 I	DEVANAGARI	LETTER	DA		
11420	NEWAR	LETTER	DHA	;	0927 I	DEVANAGARI	LETTER	DHA		
11421	NEWAR	LETTER	NA	;	0928 I	DEVANAGARI	LETTER	NA		
11422	NEWAR	LETTER	PA	;	092A I	DEVANAGARI	LETTER	PA		
11424	NEWAR	LETTER	BA	;	0935 I	DEVANAGARI	LETTER	VA		
11426	NEWAR	LETTER	MA	;	092E I	DEVANAGARI	LETTER	MA		
11427	NEWAR	LETTER	YA	;	092F I	DEVANAGARI	LETTER	YA		
11429	NEWAR	LETTER	LA	;	0932 I	DEVANAGARI	LETTER	LA		
1142A	NEWAR	LETTER	VA	;	0935 I	DEVANAGARI	LETTER	VA		
1142C	NEWAR	LETTER	SSA	;	0937 I	DEVANAGARI	LETTER	SSA		
1142D	NEWAR	LETTER	SA	;	0938 I	DEVANAGARI	LETTER	SA		
1142E	NEWAR	LETTER	HA	;	0939 I	DEVANAGARI	LETTER	HA		
1142F	NEWAR	VOWEL S	SIGN AA	;	093E I	DEVANAGARI	VOWEL :	SIGN A	AA	
11430	NEWAR	VOWEL S	SIGN I	;	093F I	DEVANAGARI	VOWEL :	SIGN I	Γ	
11431	NEWAR	VOWEL S	SIGN II	;	0940 I	DEVANAGARI	VOWEL :	SIGN I	II	
11432	NEWAR	VOWEL S	SIGN U	;	09C1 H	BENGALI VOV	VEL SIG	N U		
11433	NEWAR	VOWEL S	SIGN UU	;	09C2 H	BENGALI VOV	VEL SIG	N UU		
11434	NEWAR	VOWEL S	SIGN VOCALIC R	;	0943 I	DEVANAGARI	VOWEL :	SIGN V	/OCALIC	R
11435	NEWAR	VOWEL S	SIGN VOCALIC R	R ;	0944 I	DEVANAGARI	VOWEL :	SIGN V	/OCALIC	RR
1143C	NEWAR	SIGN CA	ANDRABINDU	;	0F82 1	TIBETAN SIC	GN NYI 3	ZLA NA	AA DA	
1143D	NEWAR	SIGN AN	IUSVARA	;	114C0	TIRHUTA SI	IGN ANU	SVARA		
1143F	NEWAR	SIGN VI	IRAMA	;	094D I	DEVANAGARI	SIGN V	IRAMA		

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	1140	1141	1142	1143	1144	1145	1146	1147
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0	عر 11400	11410	11420	11430)	11450		
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1	ب را 11401	M	11421	11431	11441	11451		
	~	7	π		0	2		
2	11402	11/12	4	11/22	11442	11452		
		ন			11442	2		
3		H	11422	A	11442	२		
		7	ਸ ਸ	11433	11443	11455		
4	S	B	4	्र	l	X		
	11404	11414	11424	11434	11444	11454		
5	ণ্য	বা	्रा	ू	Į	বা		
	11405	11415	11425	11435	11445	11455		
6	भू	4	म	ु	X	CC CC		
	11406	11416	11426	11436	11446	11456		
7	₽	Ŗ	ય	್ಬ	· 、	1		
	11407	11417	11427	11437	11447	11457		
8	C	ट	<u> </u> न	ॅ	^	乞		
	11408	11418	11428	11438	11448	11458		
9	J	0	ল	ੇ		୧		
	11409	11419	11429	11439		11459		
А	1	ত	व	র্ণ				
	1140A	1141A	1142A	1143A				
в	<u>ک</u>	ਫ	۲¢	ॊ				
	1140B	1141B	1142B	1143B				
С	ব্য	દ	ष	ँ				
-	1140C	1141C	1142C	1143C				
П	ठॊ	ባ	स	ै				
U	1140D	1141D	1142D	1143D				
F	ন	થ	ন	ം				
Ľ	1140E	1141E	1142E	1143E				
_	रव	ਣ	ा	\sim				
F	1140F	- 1 1141F	1142F	1143F				

Figure 1: Proposed code chart for Newar.

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

Inde	ре	ndent vowels
11400	স	NEWAR LETTER A
11401	সা	NEWAR LETTER AA
11402	õ	NEWAR LETTER I
11403	<i></i>	NEWAR LETTER II
11404	उ	NEWAR LETTER U
11405	ক্র	NEWAR LETTER UU
11406	ज	NEWAR LETTER VOCALIC R
11407	স	NEWAR LETTER VOCALIC RR
11408	ູ້	NEWAR LETTER VOCALIC L
11409	ລ	NEWAR LETTER VOCALICIL
1140A	1	NEWAR I ETTER F
1140R	ই	NEWAR I ETTER AI
1140C	त्रा	NEWAR I ETTER O
1140D	<u> </u>	NEWAR LETTER AU
Con	soi	nants
1140E	ेक क	
1140E	ਾ ਯੂ	NEWAR LETTER KA
1140F	ণ ব	NEWAR LETTER KHA
11410	ণ ঘ	NEWAR LETTER GA
11411	4	NEWAR LETTER GHA
11412	৫ স	NEWAR LETTER NGA
11413	भ	NEWAR LETTER CA
11414	a ∞	NEWAR LETTER CHA
11415	ম	NEWAR LETTER JA
11410	শ	NEWAR LETTER JHA
11417	38	NEWAR LETTER NYA
11418	e v	NEWAR LETTER TTA
11419	0	NEWAR LETTER TTHA
1141A	<u> </u>	NEWAR LETTER DDA
1141B	ษ	NEWAR LETTER DDHA
1141C	이	NEWAR LETTER NNA
1141D	 	NEWAR LETTER TA
1141E	थ	NEWAR LETTER THA
1141F	ય	NEWAR LETTER DA
11420	<u>ਬ</u>	NEWAR LETTER DHA
11421	1	NEWAR LETTER NA
11422	4	NEWAR LETTER PA
11423	æ	NEWAR LETTER PHA
11424	q	NEWAR LETTER BA
11425	Q	NEWAR LETTER BHA
11426	म	NEWAR LETTER MA
11427	य	NEWAR LETTER YA
11428	ন	NEWAR LETTER RA
11429	ल	NEWAR LETTER LA
1142A	व	NEWAR LETTER VA
1142B	ъ	NEWAR LETTER SHA
1142C	ष	NEWAR LETTER SSA
1142D	स	NEWAR LETTER SA
1142E	ह	NEWAR LETTER HA
Dep	eno	dent vowel signs
1142F	ুা	NEWAR VOWEL SIGN AA
11430	િં	NEWAR VOWEL SIGN I
11431	ါ	NEWAR VOWEL SIGN II
11432	0	NEWAR VOWEL SIGN U
11433	્રે	NEWAR VOWEL SIGN UU

11434 👷 NEWAR VOWEL SIGN VOCALIC R 11435 ॄ NEWAR VOWEL SIGN VOCALIC RR

NEWAR VOWEL SIGN E

NEWAR VOWEL SIGN AI ূর্যা NEWAR VOWEL SIGN O

1143B 히 NEWAR VOWEL SIGN AU

NEWAR VOWEL SIGN VOCALIC L

NEWAR VOWEL SIGN VOCALIC LL

11436 ូ

ുറു

11437

11438

11439

1143A

Anshuman Pandey

Various signs

- 1143C 📩 NEWAR SIGN CANDRABINDU
- = milaphuti 1143D ்
- NEWAR SIGN ANUSVARA = sinhaphuti
- 1143E 8 NEWAR SIGN VISARGA · Also used for marking vowel length = lyaphuti
- 1143F 🔍 NEWAR SIGN VIRAMA = tutipala, halant

Additions for Sanskrit

11440 5 NEWAR SIGN AVAGRAHA

Invocation signs

- 11441 Š NEWAR OM
- 11442 १ NEWAR ANJI • Written at the beginning of a text • Represents Sanskrit "siddhirastu"
 - = bhin arambha, siddhi
- 11443 👒 NEWAR SVASTI

Punctuation

- 11444 UNEWAR DANDA = dipu cinha
- 11445 🔰 NEWAR DOUBLE DANDA
- = nidho dipu cinha 11446 NEWAR COMMA
- · Phrase separator 11447 C NEWAR FULL STOP
- Indicates end of text section 11448 🔅 NEWAR PADA SANDHI MARK
 - Indicates word break at end of line

Digits

- 11450 o NEWAR DIGIT ZERO
- 11451 2 NEWAR DIGIT ONE
- 11452 २ NEWAR DIGIT TWO
- 11453 3 NEWAR DIGIT THREE 11454 8
- NEWAR DIGIT FOUR 11455 ব NEWAR DIGIT FIVE
- 11456 😫 NEWAR DIGIT SIX
- 11457 9 NEWAR DIGIT SEVEN
- 11458 2 NEWAR DIGIT EIGHT
- 11459 ९ NEWAR DIGIT NINE

Figure 2: Proposed names list for Newar.

in many	and the second se	
ਧਤਾਧੁਤਬਧਾਰ ਸਿੰਗ ਤਿੰਦ ਮੁੰਦ ਸਟੇਸ ਕੋਸ ਸਿਰ ਆ । ਵ [भा से का विका जिन सिंह भा कि द को सि स्वा म । द भा तया मिल पा विद व कि सा। या तो इस सि म न ये तो यि स है मा दा मि । ये द ये सि म : ਨि सा दि हो। हि में सादा मि । के यो दि म न ये हो ते : ਨि सा दि हो। हि में सादा मि । के यो दि म न ये हो ते :	नामनारेक्दर्भिरन्धनेविनयासधितिृध्यद्धस गव सापताऊढ्वत्रस्पतिनयासधितिृध्यद्धस केर्मसोध्य देकेनेपित प्राप्त नेहे हि।मध्य मोतुहर् केर्मसोध दकेने पित प्राप्त नेहे हि।मध्य मोतुहर् केर्मसोड देकेने विषधा साखिय निर्माध माद शि मधाय व हरस	ipt (from Lokesh Chandra 1977: 1).
भूदस्य स्रेत्रमासव स्मयासमाब्या स्वाय आग्रेयां स् विस त्वायिर जात्या मंत्रा त्या य या भाषा क्षत्र न स्वया र्या तभवे। सि समरुगा रह्या स्वाय व स्व स्वया त मा रहता र क्र साथ ने साध न सह को साधिय त्वे महा सर्वता र क्र साथ ने साह मह को साधिय त्वे महा सर्वता र क्र साथ ने साह मह को साधिय त्वे महा सर्वत र का राषा हु था ते त	सम्बद्धपुण्यतिविकतितिषिकरम् विद्यातिविकतम्पति स्वातव्य भत्ते अस्र तादावस्यने नात्माक्या विद्य र अनस्य प्रमायन म्यातव्य भत्ते अत्र सत्ता गत्रे त्याकोटि र स्वस्य गया गता भन्य प्राय को सित अस्ति ता प्ती (ज र गया मात्रा स्वास्त स्वय जा स्वात्ते र से पान ते जा प्ती (ज र गया मात्रा स्वर्भ ना तो स्वाय र भा ये थ र मे पान ते जा प्ती (ज र गया मात्रा स्वाय स्वाय स्वाय स्वाय ते था ये स्वाय ने व ना ये भा ने ना भा र से स्वय जा सा स्वाय स्वाय ह । स्वाय (यो ये	Figure 3: The first folio of the Lankavatara Sutra in the Newar scr.



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 (NE 816). The reverse reads, भी भी जग गूपगींड मज्ञ दन. It bears the date ८१६ 816.



Figure 6: A silver half *mohar* of Jaya Prakash Malla from 1753 (NE 873). The observe reads, clockwise, খ্রী? তার রকাশ মহা. The inscription is continued on the reverse: হ্বন. It bears the date হ্বে 873.



Figure 7: An inscription by king Pratap Malla produced in 1654 at Hanuman Dhoka in Kathmandu. The inscription has text in 15 scripts. It is the first attested usage of the name *nevāra ākhara* "Newar Script".

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 ह्वद्रांधेवनासेवाविसलने महा सलने **बिनग**री। स वर्त्तलंडलामदाविः हिवयमणसंद्रायवा દ્યીયમહેમદા 日本は にたちな **dHH** 30 Buddhist tantra. Nepal, 1801 MS 2096 GUNN গ্রহল, দহায়ি ৫লিনদ মিলি বদ্য প্রহাণা বনা সামা ধর্ম দ্বিনা দা 14 4 M 市市の UTHIE a a a a EX 12 स्थात्रिम्हन्द्रिय् स्थित्र्यं वर्ताय वर्ताय वर्ता स्थाप्ति मिने कि से धा सार्क से स्विड में से ब およる国際部長の Helderdas 에 문 것의 수 6 것 기 가 것 たたのなからであ ગોડશયન્ 2126218 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 *kūțākṣara* "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 म ठ(अन। अयाहता दिगयानिम्हा । । इत्छद्वि दिले जिले सिंह की की ही । । अस्मर्यगा मूलनवद्धनैनमेशामुद्धगामिद्धेयामूलनम्द्रजनमाहनीनमेशामूलनम्धानम् १ विद्धिय १३१ । तहालयसयूजा । अगेमयेनमधो अप्रतार्थनमहो अप्रतार्थन मधा अग्र निर्माययानमधा अ मर्मदायेनेमेशा छैगेठक्कीनमहा डँको लिक्की नमा डिं सदस मुडरेग नेमरा देग झा कल हुक महा सनसमाहनसकलबीर्थमसुद्रवताकलातत्वतत्वाधियेमयखेकविग्रुत्र छात्र श्री प्रमासविग्रा लिवग्रायी किल्लाका की प्रश्निक लगमे रिययाइका स्वायाहनादि। (अ धनम् भी। ।

मवयअग्रम्तसान् । । उंग्रसादि । वास्त । इकार्यवाय्वी असादि । इद्र या । ययगायय रुविवसा किश्वित्रियाग्वित्रियमादि व्यत्मगार्ग्रतद्वेत्यादि किसियारणम्खानकिनासा दिसायलाखडमतसहासाइत्यादि। यंत्राष्ट्रगया। तथायंत्री खादि । असिसाना हा वतयो। जीवन्त्रवस्त्रादि। यसनेलपिषादि। सिंहत्रावीवन्त्रतीलादि। सिंहतेतिल दि।यद्वनाय्वतग्रंबयायादि। । दृष्ट्रि। धानदृष्टिविगालय् ललिततीयय द्यम् शा अमस्य प्रिक्रवने विगर्वनवनिर्मासं रजजमका यक्षायत्री गैसोदि । रजस्वाय गानावसविविधान् की मकार्मासतिर्मित्रेग्यता सरुवेदी एवरे एकानयत्र मध्यता वक्रमदा कर विनाम विदिश्वं प्रखेवक विरुं सिर्गागनम्लनयवग कहिमविकिर्तेळ्तं । साना गानाये व्यस्री साथि। । येवयगाको । य ताकाय अञ्च स्त्री के स्ट्रेया श्य बिल दिनी र य अरहता लिका येत्र, य र येकी मनिर्मिता । कर्स्ट य ताका ब

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

रुट्वजयक्षत्रमाहा विवसमक्तक्तमत्रलेकीक्रूरुट्साहा। । अधवामसस्य खामरुट् अक्तत्रलाधनी। संकतिकायनमधा संख्याप्रिकायसाठा। संमधामायवाय र प्रताकवायका **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 ाङ्तिकर्वत्रा मधावी वि रमसाला। दंगिखायेवाघर विकेववायके विनिज्ययायवघर विकुसायकर । इतिकसया सः जिल्यावयूजा जिल्लयोगसनाययार्को विजन्मायानसः किरुविवानसेवीवाधियतय क्रिंस्ट्रा थी ज समाग रहा विकारी या कुकी रहत या य खीर थि। स्वाया ह नादि । सिन्म् डाँग रम

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 #6.

Anshuman Pandey

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

(NEPAL.)

क मान्याया कायमचा ती का दस्री का ता चिक्री के कामें थडा बगया के लिगू अँम् लग फिग वियादिस क्षता धाय गुनु बता के भंस्ता ग विजावनिक चाना दस्ति धलगू दकां श्रंस ता गता मान पन द स् अभाराङा मार्ज चाराङा थडभग् मीपगिद्दभग्र ता सार्व जम् आ दे स. म. यात्र-भूतिकाल- श्रेशाङ्ग-तयमरवनाङ्ग कर्म्भश्रायह्य-ड्यू मया कुझ दे म्वासि या धास आत अन् इत द म्वासित का जय कज सीमास्ति के गृहिमभी धडांगू प्राच 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 हा माप यानाड्य-मार्ड्य-क्रत-कार्यधायक आव्य जिन्मज्ञ जन्मेंडाक कम

Figure 12: Specimen of 'Newari' from the Linguistic Survey of India (from Grierson 1909: 221).

Figure 13: Cover of Lipi Pau magazine.

नयाश्रीमगस्य जीवनस् जरिन्ननूयं चलावूलास् वयवृंकुगु कानधं थूकिया ययागयांग सनकानी जायगं जक यन

मङ्ग। भयाश्रीमगयुगु सामाजिक, धार्मिक निर्गिथिगि न संधान 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 निद्धंगी संनग विक्रम संनगया बलावूलाया जानधकना मंद्र धयाशु जरित्यानं निवना का ८१ रवे ।

जधयन रुळ्टमा४२) खँय सनकानं जा४एक यला४ झाकारू४२ खनमद। खग्रतना नयान संनतया यक्षता गंखधन साखाश्यात सनकानं नाष्ट्रिय वित्रूति 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 १। तन शूयिं रू नाजनैतिक यार्टीत सङ्ल ञलधा४सा थ8यिनिगु धायू व माचगायाग झावलं कार्यदलं वै0क्य जक सिमिग जल। ळूरी रुळूथंका? रानकानं थ कार्यदलया स्वाद तनगु न का स्नाकगु लाच गकं यितमरूल।

मयाल संवत मया श्या भौलिक संवत ख8 । श्व द्वक्र 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 खलावूलाय् नयदया द्वंगु मद्। नाक्षा यक्षानमकी दङ्घ गमलनं थ8ग युगासनिक सहजगाया निर्गि रानगया छ भू यानस् चल जयावंगु विक्रम संवतयात यथासनिक नूयं खलावूलाय् रू४गु ख४ । तन मूलूक्य् नाधा शासनया

ग्राद गयां हरू कार्यदेल निचनग का क्रु खंश्सां थुंगु

खनद। मयाल संबग नाष्ट्रया रू संबग ख8सां थकिया जधिकानीक माचगा यामीया निगिं मनाक्ष्य वरूसंखक नूयं क्वविला चंगु द्। भया ४ दूम भवा ४ तर्यु मरूत्वयूर्ध र्गूमिका रूभक खलस दयावंशु दू। जार्थिक, सामाजिक नूयं भया ४ दशय भना ४ तरु जूमिका जरानूयं दयावंगु द्। थ नवा श्वराय प्रदावित यायशु नितिं नं नाजनीतिष्ट वयुसं र्यामका क्रिंगाचंगु जारगय जा8 जारून क्रजं नयाचंगु पू। वंशु नयाल संवतया क्रूपँ क्रू 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 स्नाकारू४२ खनमपू। सन कानी रूनं झाकावया दंशु विक्रम संवलया वाभ द्घु निधंय याथन सहल कुळू महुन्। अल भयाल संननयान नाश्चिय संवग धकां धायना यायुधुंका श्र आश्व थुकिया स्तन व मार्गा, श्वलावूलाया वाभ नं द्वं निर्धय क्रे खनमन्। श्व ञ्)श्रीलनय् क्कानाचीयं मनूतयुगु रगवनायात अक हाकनं

ळक४ वांमलाक क्रिगेश कुंगे8 जुग खनदग । नयाल संबत नयाश्या मोलिक संबत, थन रू यगियादन ऽशु संवग, भयाश्या जाधिकानीक संवग कथं खलावूलायु वळ्ट्री खँयु भनं गंका मद्। रुवा क्क वा रुवा लियाया ळीया खँ जक खंश। नाष्ट्रया चारिमानगए वलना वीये नयाश्रीमेणयुसं विदशयु बलावुला जयावंगु, विष्ठगं जायागित संवतयात क्वावलं गिनायन यानामतव्यु । खँय गंका मद। क्व नया हिनमधिया 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।



भया ४या भॊलिक संनग भयाल संनगयाग सनकानं ञ्धिकानीक माचगा वीमाश्गु माग क्ववया वंगु 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 माचता दयधुंकुगु नयाल संवत नाधातयुगु 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

भयाल संवत १११० या नाजनॅंगिक यनिवर्गनं मूलूक्य् वरूदलिय चनम्रा म्रायना याग। थ यनिवर्गनं नयाल संनगया जाश्वालनयाम मिव४ बुगु खनद् । नयाल संनगया क्रूपँ वृद्ध भयालरामा मंका १ खलकं पँयुपर्सं यानावया चंगु द्वाँ रिंगुना सांद्वगिक जनुसरा नाजनैंगिक मंगा नगायग

बुश्मंक्शु यानावया द्वंशु दू। मयाल संवर्णया अधिकानीक चलावलायाण कया 8 कायाया यधानमनी शिनिजा यसाद काळूनालां थ8 यधानमसीया बाकू दून नयाल संवतया गिथि निक्रि कथं रू क्रसां खलावूलां रूपेशु यगिवद्धना यंकूशु खंश । मन

ञ्म, गारू बबया ज्मलिसं मूलूक संघीय लाकगाचिक गधनक धकांश धायका बळ्ट धुंकांश नं नयाश्या मोलिक संवतयात नावां जाधिकानिक संवत धका४ नालाकया४ ञ्चलावूलायु मरू8शुयान नाषु यनिया शंरीन जाधान यानावंगु खँगु गंका मद्।

मयाल संवर्णया आश्रानयाण दुयुया यमुख नाजनींगेक

याटींगयुर्स थ आश्रालयनयु संलगन जयाद्वीयं मनुगयुगु

मानसिक व रगवनासक लाग्रह याथंग का नं यानावंग

শণবীন শাহ্য









Figure 15: Chart of प्रचलित नेवारी 'Prachalit Nevari' (from Shakyavansha 1973: 39).

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Figure 16: Chart of CV combinations for KA through NGA (from Shakyavansha 1973: 40).



Figure 17: Formation of conjuncts with YA (from Shakyavansha 1973: 41).



Figure 18: Formation of conjuncts with RA and LA (from Shakyavansha 1973: 42).



Figure 19: Formation of conjuncts with LA and VA (from Shakyavansha 1973: 43).



Figure 20: Text of an inscription in the Newar script (from Shakyavansha 1973: 44).

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Figure 21: Chart of the Newar script (from Rajavanshi 1953: 1).

Figure 22: Chart of Newar script (from Regmi: Figure 27).

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Figure 23: Chart of Newar script (from Regmi: Figure 27).

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नयाल युवलिग लिपि - १
नेपाल प्रचलित लिपि Nepal Standard Script
मांआखा मुकाँ १-६ (मिंख्) गा द्।
मॉआखः मुक्ने १६ (झिखु)गः दु। There are 17 vowels
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दीर्घ - आ ळी ऊ मृ २ ने ठी अश दीर्घ - आ ई ऊ ऋ ॡ ऐ औ अः Long sounded a: i: u: ri: Iri: e: o: ah
वाश्र आखा - म्काँ ३.६ (स्ट्रब्य्) गा द्। बाः आखः - मक्वँ ३६ (सइख)गः द। There are 36 consonants
न स्
ट 0 उँ उँ ४ ग थ द ध न ट ठ ड ढ ण त थ द ध न Ta Tha Da Dha Na ta tha da dha na
य रूव एम यन लव पफबभम यर लव Papha/fababhama yara la va
শ स र र 37 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 लह Ngha nha mha rha lha
टवनागीन आखा स्पूर्वि क्रिकीयका

दवनागीन आसः स्यूपि क्रिकीयन्तः प्रवलिग लिपि उलि थाक्ळ् मस् इळ्माः।

देवनागरि आख: स्यूपिँ छिकपिन्त: प्रचलित लिपि उलि थाकुइ मखु जुइमा:। 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 संबग ११२९ सिझा २-६ শनिवा१ (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 24: Basic letters and signs of Prachalit Nepal from an online script tutorial (from "The Newah" 2009).

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~	3	ग्त्	ज	ৰ	ন্থ	ख	খ	F1	स्	र् व् _{КНА}

Figure 25: Comparison of letters A to KHA of Newari, Ranjana, Bhujimol, etc. (from Government of Nepal 1962).

	ฦ	ग	8	ন	ฦ	গ	ય	শ	বা	ন GA
Ψ	ĿJ	प्प	य	F	ন্থ	घ	ঘ	AND.	ष	ି ଅ ଜ#/
Γ	ζ	Ľ	ন্ড	ক্ত	S	Z	S	X	ক্ষ	ক্র
d	S	Ţ	স	স্থ	ধ	y	ટ	ズ	F	च
φ	δ	Jr N	त्र	The	S	78	Y	The state	Ð	ED
E	F	3	7	স্থ	Ś	স	ব্দ	Ę	ক্ত	' স JA
Ч	Ч	k	J.	F	স	31	4	K	T	Т
h	ß	ale S	す	Ŧ	B	এহ	B	Ry.	ন	শ মন
C	3	S		Y	જી	S	ર	र	5	ट्य
0	0	Q		A	B	O	S	P	Ð	ъ ^{тну}
۲	3	3		Ŵ	Ś	3	ઝ	7	હ્ય	ड
୧	ふ	く		Ę	S?	e Ng	2	THE	B	S ^{DHA}

Figure 26: Comparison of letters GA to DDHA of Newari, Ranjana, Bhujimol, etc. (from Government of Nepal 1962).

तिन्द्रविष्ट्रविकाल PRE - LICHCHHAVI PERIOD	खिन्च्छवि LICHCHHA	কাক VI PERIOD		-	নন্দ MALLA	र स्वं इ AND SI	াার্কান্ড HĀHA P	ERIOD		
ब्राह्मी BNHMI	पूर्वलिन्छीव PRO-LICHCHNAVI	उत्तरलिच्छवि MST-LICHOHANI	किरात KIRAT	रञ्जना RANJANA	सुजिमे। BHUJIMO	नेवारी NEWARI	मेथिली MAITHILI	तिब्बती TIBETAN	नन्दिनागरी NANDINAGAR	देवनागरी DEVANAGARI
I	ઝા	থা		ৰ্	En	ध	<i>(</i> v)	ब्	M	য়৸
Y	ጎ	শ্	Ш	র	ĥ	ろ	ँ	5	त्	र्,
\odot	0	ଯ	Я	W	શ	প্র	হ'	स्त	খ	গ্ৰ THA
5	Z	ष्ट्र	Y	জ	65	द	ন	5	2	दु _{ष्य}
D	J	ব্	E	শুৰ	Ø	শ্ব	N	535	Ĭ	ଧ _{DHA}
L	રુ	F	Z	न	ଜେ	न	7	a	च	ন্শ
Ե	U	Y.	ш	Z	થ	य	ম	4	μ	Ͳ
6	Ч	Ze	\boxtimes	ব্দ	ৰ্ফ	Х¢	NC	ム	দ্দ	ኻ _{₽#}
		Z	ζ	ৰ	ধ	٩	Ť	7	J	ৰ চিচ
Ч	7	J.	સ	স	প	R	ভ	LIN	F	ЭНВНА
४	H	R	A	म्	भ	म	Y	と	म	म्म
L	L	ય	হ	स्	গ্ব	य	র	भ्	स्र	य्अ
{	1	T	X	₹	9	ד	र	H	7	र् _{RA}
し	\mathbf{b}	æ	nn	ন্	উ	ছ	ন	A	R	ऌ,,,
6	2	Z	ম	ৰ	ଶ୍ୱ	ব্ব	ন্থ	প্ল	đ	व _भ
T	R	R	J	ज्ञ	हा	প্র	<u>آ</u> هر	শ	হা	হা
Ե	Y	A	4	ম	શ્વ	य	ষ	R	F	ম sa
Ъ	₹N	H	フ	म	ঙ্গ	स्	भ	XI	स	स्

Figure 27: Comparison of letters NNA to SA of Newari, Ranjana, Bhujimol, etc. (from Government of Nepal 1962).

		T	·		9		-	7.		ਣ
Ե	5	1	Z	ন	র্	F	९	2	ક્ષ્	S HA
七	z	な		प्रमु	ধ্ব	મ્લ	5	₹?Ł	झ्	क्ष KSA
く	3	D	る	হ	গ	হ	ال	FS	त्	त्र TRA
Ę	7m	સિ	ろ	153	A)	53%	ઝુ	her	Hor	ন্য্যম
t	F	E	- Ar	A	ঞ্জ.	স্ক	ক্য	R)	Æ	क्य
ŧ	4	Æ	Z	স	वि	ৰূ	F	FT	Æ	ऋ KRA
7	F.	à	M	ক্স	ଔକ୍ଟି	द्ध	₽	Fd	দ্ভ	æ KLA
ょ	₹	ह्य	K	म्	କ୍ଷି	क	र्द	FY	Ŧ	ক্ষ
र्भ	₹ †	¥ d	N	Æ	ঙ্গ	ক্ষ্	স্ফ	ZF	स्त	स्क इка
5	4	5	M	ST.	SFF	र्भुद्ध	Å\$	S I	कुम्	кі Как міка
لح	LC.	31	দ্ব	सू	ক্ষ	হ্ম	হ্ম	NA	ह्म	ह्ममल
7	<u>er</u>	ولل	त्री	স্ত্র	શી	শ্বী	দ্বী	وللكالد	স্থ্রা	RAT SHRĪ

Figure 28: Comparison of letters HA and some ligatures of Newari, Ranjana, Bhujimol, etc. (from Government of Nepal 1962).

			-				-	-		-	
ខ	ధా	ખ	ŝ	ĝ	07	90	90	70	Цо	90 10	
ۍ	8	3	ح	R	e/	2	S	ર	2	6) 2	
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ج	2	ন	œ	-	د	ح	~	9	6	6 4	
~~	~>	~57	শ	z	ର	3	9	2	אר	ہ س	
<u>ب</u>	~5	٩	છ	ঠ	ବ୍ଷ	5	দ্য	7	ন	ז אר	
ナ	ਹਾਂ	43	x	IJ	Ŋ	9	R	V	ተ	† 8	
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aici Baahmi	ਧਰੀਜਿਤਰਰਿ -ਪਿcਸਟਸਿਆ	3T-LICHCHIAV	A ANTA KIRAT	ANJAHA	अजिमे Bruuna	Heukki	मेथिकी MAITHILI	freadl IBETAN	रन्दिनाजरी uubimagari	ANAGARI	
िनेन्द्रविषूर्वकात PRE-LICHTMINVI	हूँ तिर्वा LICHCH PER	ै बेकाल IHAVI 10D	मन्त स्वं झाहकात MALLA AND SHAHA PERIOD								



Sc	ripts		(1)	(2)	(3)				
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	(1) Tir	hutā (2)	Newār	i (3) Nāgari (4) Roman		2	হ	٦	र
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য	š	इ	i	को उर झ	jh		ষ	ষ	ष
ব্র	ઝ્રો	ई	ī	্রে `গ্য _{ু স}	ñ		স	स	स
ک	उं	उ	u	55G	ţ		র	ह	ह
5	ら	জ	ū	िव	ţh		के	के	क
ৰ্ন্দূ	Ŧ	ॠ	ri	उ ७ ड	ġ		কা	का	क
এ	ত	ए	e	ठ ठ ढ	dh		কি	कि	वि
ত্র	ন	ऐ	ai	ন হা আ	ſ ņ		क्री	a	र्क
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ক	क	क	k	ননন	'n		(V) (7)	ୁ ଅ	a
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গ	ฦ	ग	g	र्फ रू प	5 ph	C	ক।	का	क
ย	ঘ	घ	gh	র ব ৰ	гb		শ্	ব	8
Ś	₹\$	ङ	'n	छ रुभ	r bh	•	এ	এ	5
Б	ৰ	च	ch	र्ग मम	r m	Ň	ऊ	HE	হ
				-					

Used	d in '	Writin	g Ma	aith	ili		(1)	(2)	(3)	(4)	(1)	(2) (3	3) (4)
। लिखबामे व्यवहृत लिपि				য়	य	य	у	হ্ন	वृी वृ	5 kri			
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अ	а	Б	2	छ	chh		র	ব	व	v	হ্য	क्वें क	त्र kv
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इ	i	म	J	झ	jh		ষ	ষ	ष	ş	ভ	क त	r tt
ई	1	B	\ઝર્	ञ	ñ		স	स	स	s	ઝ્ટ	জ প্ল	shr
उ	u	ઉ	5	ट	ţ		হ	ह	ह	h	&	ম্ব ম	5 sth
ऊ	ū	3	0	ठ	ţh		$\hat{\mathbf{\Phi}}$	र्क	क	ka	ন্ব	न न	nu
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ऐ	ai	す	ମ	ण	ņ		কী	की	की	ki	2	8 8	1
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ङ	'n	ŝ.	रु	भ	bh		এ	এ	त्र	tr	6	Q' 9	9
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	×	- ٦ xxi	•					•			xxxii	•	

Figure 30: Comparison of Maithili, Newari, and Devanagari (from Jha 1999: xxxi-xxxii).

Proposal to Encode the Newar Script in ISO/IEC 10646

नेचारी लिपिका उन्पत्ति	PLATE 75 नेबारी लिपिको उत्यति	PLATE 76 नेबारी लिपिको उत्तानि
<u>ч</u> , м. м. м. м. л. л. л. л. м. м. м.	R. R. B. J.	F H A A A A
	C. C. C. C. E. Z.	<u></u> <u>8</u> , 8, 2, 2, 2, 3, 3, 5, 5
L. Z, S, S, S, S, B, J	0.8.0	ມູ໙ູ ິພູ ມູ ຊຸ
ס. ס. ס. ס. ס. ס	r. 2. 3. 3. 3	1, 1, 1, 1, 4, 4, 4, 4
Z. T. Z. J. J.	6,6,8,8,8	ר ט ט ש
+ , भ , म , म , म , भ , म , म	T. Y. T. ש. W. W. U. E.	
?. 2, 4, 41, 46, 28, 13, 73	А. Х. Я. Я. Ћ. Я. Ћ	
ለ. ባ. ባ. ካ. ቭ. ኳ. ካ. ፓ	୦. ୦. ୬. ୨. ୫. ୩. ୩ . ୩	F M M M M
ש. ש. מ. פ. מ. ש.	Þ. 5. 2. 2. 2. 2. 3	A. A. A. A. A. A. A. A. A.
г. т. ъ. з. «. ъ.	D.U.U. H. A	
५. ४. ४. ४. ५. म	Т. Т. А. Ч. Я. Н	
ው, 	ן, ע. בו. בו. ב	
E. E. J. J. J. J. J. J. J.	6.20.21.20.21.25	
N. N. J. N. N. N	ם, ם, ז, ז, ז	

Figure 31: Evolution of Newar from Brahmi (from Rajbanshi 1974: Plates 74, 75, 76).

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Figure 32: Various signs found in Newar manuscripts (from Shakyavansha 1973: 84).



Figure 33: Various symbols and flourishes found in Newar manuscripts (from Shakyavansha 1973: 85).

ATE ⁸⁶ [निर्धातिज्ञ ५] विकासका एघारी झताव्दी नाइपत्रमा लेर्यबको सर्वज्ञानेत्त्रर तन्त्रबाट		गडपत्रमानेरपेको तन्त्रााज मन्ने पुरत्तकषाट रि रि मि रू नु ले ५ भे म २ ३ × ५ ६ ७ २ ६		ि लिपिचित्र ६] विक्रमचे वाद्वों शताब्दो	तारुपजमा लेखिका इधियामलाले न्त्र बाट	भा भा भा भा भा भा भा भा र र र भू भू ल भ ले ल	201 202 202 208 204 205 206 205	對 對 场 公 改 改 改 改 改 之 之 之 之 之 之 之 之 之 之 之 之 之 之	1 210 201 242 304 206 305 205 210
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ि ४] पियो। थे विज्ञा मन्द्र	K F7 w	हाय ह	योगिया	157 .			धभियम	E, 9	
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κ.

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Symbols of Nepal Lipi

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

்	Sinhaphuti (Anusvara)	Ŏ	Milaphuti (Chandrabindu)
ଃ	Lyuphuti (Visarga)	I	Dipuchin (Danda/Virama/period)
Q	Tutipala chin (Halanta)	II	Nidho Dipuchin (Double Danda/Virama/period)
१	Bhin chin (Siddhi/Subha) sign	9 २	Akhala hilabulachin (changer)
`	Khangvo jhasuchin (comma)	×	Khalithasaytegu chin (blank)
۸	Akhala tophyuchin (Kaakapada/ missing letter indicator)		Mhusa chin (delete)
11	Khangvo svapu chin (word connector)	$^{\rm III}$	Bhinka chin (correction)
₿ŜĮ	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 \mathcal{T} 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 \mathfrak{T} (mhyay-daughter); $\mathfrak{n}(\mathfrak{o},\mathfrak{o})$ (Canada), $\mathfrak{n}(\mathfrak{a},\mathfrak{o})$ (Canbera), $\mathfrak{n}(\mathfrak{o},\mathfrak{o})$ (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 $\mathfrak{N}(\mathfrak{e},\mathfrak{o})$.

Figure 35: Excerpt from Vajracharya (2010: 7) showing various symbols used in the Newar script as well as a description of a new vowel sign proposed for addition to the script.

	Newa	Pachhai	Rabison	Kumari	Swati	Aakha
A	স্	অ	স্	স্	भ्	স্
AA	ञ्	ন্মৃ	স্	ञ्	স্ম	স্
I	30	30	30	šó	ŏŏ	305
II) Sol	<u>sõ</u>	200	يق	فق	ઝી
U	उ	उ	उ	उ	उ	3
UU	उ	ত	জ	ব্র	5	ক্ত
VOCALIC R	_		भू	_	मृ	मृ
VOCALIC RR	_	_	_	_	_	মূ
VOCALIC L	_	_	_	_	_	Э
VOCALIC LL	_	_	_	_	_	ଚ
Е	1	1	1	ন	ل	ھ
AI	<u>ک</u>	শ	کی ا	নি	رفی) ভ
0	उा	उा	ব্য	ব্য	ব্য	শ্র
AU	र्डो	ই	ইী	ব্র	उी	স্ট

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	্	୍	୍	્ર	ু	ু
VOWEL SIGN VOCALIC R	್ರ	ੁ	ુ	ૃ	ূ	ৢ
VOWEL SIGN VOCALIC RR	_	_	_	_	_	્ર
VOWEL SIGN VOCALIC L	—	_	_	—	_	ૢ
VOWEL SIGN VOCALIC LL	_	_	_	_	_	્ર
VOWEL SIGN E		ॅ	ॅॅ	्	ੇਂ	ॅ
VOWEL SIGN AI	્ર	R	δ	ß	ു	્ર
VOWEL SIGN O	া	া	ॅा	া	ৗ	ৗ
VOWEL SIGN AU	ें1	ॊ	ें	्री	പ്	ৗ

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
KHA	ख	रव	ख	रव	ख	ख
GA	গ	ગ	و	১	গ	গ
GHA	घ	ঘ	ঘ	घ	ધ	घ
NGA	रु	\mathbb{Z}	\mathbb{S}	2	\mathbf{v}	2
CA	ব	ব	ব	व	व	ব
СНА	স্থ	স্থ	ऋ	স্ক	8	স্ত
JA	ব্য	ব	ব	ত্র	স	স
JHA	म्	म्	म	স	म	ম্
NYA	Ŗ	R	ગર	\mathcal{J}^{z_2}	R	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	ਟ	ट	ढ	ढ
NNA	ध	દ્ય	গ	13	ध	દા
TA	ন	η	ባ	ካ	ባ	ባ
THA	થ	થ	થ	খ	થ	થ

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

	Newa	Pachhai	Rabison	Kumari	Swati	Aakha
DA			द	द	द	द
DHA	ધ	ધ	ધ	ধ	ષ્ઠ	ধ
NA	न	न	ন	ন	न	ন
PA	प	य	प	य	य	य
РНА	रू	रू	रू	ک و	रू	ৰ্
BA	व	व	व	ব	व	व
BHA	र्	r	হ	र्ग	र्	হ
MA	म	म्	म	म	म	म
YA	य	य	य	य	य	य
RA	ন	ন	ন	ন	ন	ন
LA	ल	ल	ल	ल	ल	ल
VA	व	ব	व	ৰ	व	व
SHA	ষ	૪	শ	শ	8J	শ
SSA	य	ষ	य	ॺ	ष	ष
SA	स	स	स	स	स	स
НА	ह	रू	ह	रू	হ	रू

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

ISO/IEC JTC 1/SC 2/WG 2 PROPOSAL SUMMARY FORM TO ACCOMPANY SUBMISSIONS							
FOR ADDITIONS TO THE REPERTOIRE OF ISO/IEC 10646							
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 http://www.dkuug.dk/JTC1/SC2/WG2/docs/roadmaps.html for latest Roadmaps.							
A. Administrative							
1. Title: Proposal to Encode the Newar Script in ISO/IEC 10646							
2. Requester's name: Script Encoding Initiative (SEI) / Anshuman Pandey <pandey@umich.edu></pandey@umich.edu>							
3. Requester type (Member body/Liaison/Individual contribution): Liaison contribution							
4. Submission date: 2012-01-05							
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 proposed name of script:							
h The proposal is for addition of character(s) to an existing block:							
Name of the existing block:							
2 Number of characters in proposal:							
2. Number of characters in proposal.							
A-Contemporary X B1-Specialized (small collection) B2-Specialized (large collection)							
C-Major extinct D-Attested extinct F-Minor extinct							
E-Archaic Hieroglyphic or Ideographic G-Obscure or guestionable usage symbols							
4 Is a repertoire including character names provided?							
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 font will be provided by Anshuman Pandey, pending authorization for use by Rabison Shakya, the							
original developer of the font.							
b. Identify the party granting a license for use of the font by the editors (include address, e-mail, ftp-site, etc.):							
 b. Relefences: a. Are references (to other character sets, dictionaries, descriptive texts atc.) provided? 							
b. Are published examples of use (such as samples from newspapers, magazines, or other sources)							
of proposed characters attached?							
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 benaviour, relevance in Mark Up contexts, Compatibility equivalence and other Unicode normalization							
see Unicode Character Database (http://www.unicode.org/reports/tr/4/) and associated Unicode Technical Paparts							
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

1. Has this proposal for addition of character(s) been submitted before?	No
2 Has contact been made to members of the user community (for example: National Body	
2. This contact been made to members of the user community (for example. National body,	Ves
If VEC with whom?	100
IFES, with whom? Froi. Namar F. Manar Kamai.mana eginan.com	
If YES, available relevant documents:	
3 Information on the user community for the proposed characters (for example:	
size demographics information technology use or publiching use) is included?	Ves
Beference:	ications
A The sector of user community is unknown. Script is used for print and digital public	
4. The context of use for the proposed characters (type of use; common of rare)	
Reference: The ine war script is used for writing Newar (Nepal Briasa), Sanskrit, and o	ther languages.
F. Are the proposed characters in surrent use by the user community?	
5. Are the proposed characters in current use by the user continuinty?	1 65
If YES, where? Reference: By speakers of Newar In Nepal, Sikkin (India), and the	ne ulaspora.
6. After giving due considerations to the principles in the P&P document must the proposed charact	ers be entirely
	700
If YES, is a rationale provided?	
If YES, reference:	
7. Should the proposed characters be kept together in a contiguous range (rather than being scatte	red)? Yes
8. Can any of the proposed characters be considered a presentation form of an existing	
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 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 appearance 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, De	evanagari, etc.
11. Does the proposal include use of combining characters and/or use of composite sequences?	Yes
If YES, is a rationale for such use provided?	Yes
If YES, reference: Combining vowel signs	
Is a list of composite sequences and their corresponding glyph images (graphic symbols) pro	vided?
If YES, reference:	
12. Does the proposal contain characters with any special properties such as	
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 identified?	
If YES reference:	