

Request to Allocate the Maithili Script in the Unicode Roadmap

Anshuman Pandey
University of Washington
Seattle, Washington, USA
apandey@u.washington.edu

June 21, 2006

I Introduction

This proposal seeks to allocate the Maithili script in the Supplementary Multilingual Plane (Plane 1) of Unicode. The Maithili script is a Brahmi-based script that is used predominantly in the state of Bihar in India and in Nepal for writing Maithili, an Indo-Aryan language spoken by more than 22 million people worldwide. Maithili is an officially-recognized language of India and the second most-commonly spoken language in Nepal. Known also by the names Mithilākṣara and Tirahutā, the script is the traditional writing system for the Maithili language.

The Maithili script is associated with a scholarly and scribal tradition that is responsible for the production of literary and philosophical works in the Maithili and Sanskrit languages from at least the 14th century CE. The majority of literary manuscripts in the Maithili language and script are the songs of the famous poet Vidyāpati Thākura (14th century) and several Sanskrit dramas. Manuscripts on philosophy include Sanskrit treatises on the *Nyāyasūtra* and other aspects of Nyāya philosophy. The Maithil Brahmin community employs the Maithili script for ceremonial purposes, most notably for keeping *pāñjī*, or genealogical, records, which have been systematically maintained since the early 14th century. During the 20th century, the use of the Maithili script diminished with the rise of Devanagari, the script now commonly used for printing Maithili-language books and periodicals. Since the 1950s, Maithili literary and cultural societies in India and Nepal have preserved the language and script through the small-scale publication of books and pamphlets on Maithili culture, dictionaries such as the *Br̥hat Maithilī Śabdakośa*, and script primers such as the *Maithilī Prathama Pustaka*. The recognition of Maithili as a scheduled language of India in 2004 has revitalized interest in developing the Maithili language and script.

Although traditionally used for manuscripts, Maithili entered the world of print in the 1920s, when the first Maithili metal types were cut in Calcutta. However, the rate of print production was minimal and there was an absence of high-quality Maithili types. The specimens in Figure 3 and Figure 4 provide examples from the Maithili-English dictionary, *Br̥hat Maithilī Śabdakośa*, of text typeset in Maithili metal fonts. A better font was used in the production of the *Maithilī Prathama Pustaka*, an excerpt of which is provided in Figure 5. An analysis of the fonts used in these works reveals dissonance in the optical uniformity and clarity of letterforms. A reason for this is that Maithili metal fonts were at times derived from Bengali sets. Maithili letters not found in the Bengali script were cut anew, but the imprecise nature of the work gave the Maithili letters a rather unpolished appearance, which set them apart from the unmodified letters borrowed from the Bengali font. However, progress in the development of Maithili fonts is evident from a comparison of the types used in the *Br̥hat Maithilī Śabdakośa* with those in the *Maithilī Prathama Pustaka*.

Recently, technical groups in Nepal, such as eCube: Solutions & Research, have created digitized Maithili fonts. These digitized fonts are high-quality typefaces suitable for print and display purposes (see Figure 8).

The font used in this proposal was designed by the present author and was created to provide a high-quality Maithili typeface suitable for digital and print production. It is incomplete in that several consonant conjuncts have not yet been drawn. In cases where conjuncts not available in the font are needed for illustration, the respective letter has been excerpted from Maithili documents. A complete font will be developed to accompany the formal proposal.

2 Classifying the Script

Due to the historical scribal and manuscript traditions of Maithili; the ceremonial use of the script by the Maithil Brahmin community; the continued use of the script for the production of books; and the preservation and development of the script for contemporary communication by Maithili organizations, the Maithili script should be classified as either a “Category A” (contemporary) script or a “Category B.1” (specialized) script. The appropriate classification of the script will be determined in the formal proposal to encode the Maithili script in Unicode.

The name of the script also requires attention. The script is known by the names Maithilī, Mithilākṣara, and Tirahutā. All three names refer to the characters in use within the geographic region of Mithila, or Tirhut, in north Bihar. Each of the names are attested historically and are used interchangeably in reference to the script. As the common traditional name of the script, “Tirahutā” might justifiably serve as the standard name of the script. The Script Encoding Initiative (2006) already recognizes the script under the name “Tirhuta,” with “Maithili” and “Mithilakshar” as alternate names. Input from the Maithili-speaking community will assist in settling the matter. Of these names, “Maithili” is a convenient designation due to the association of the script with the language of the same name, and for the present purpose it is sufficient for identifying the script.

3 Letters of the Maithili Script

A preliminary glyph chart for Maithili is presented in Table 1 and character names are shown in Table 2. An initial estimate indicates that the Maithili script will require a minimum of 86 code-points, consisting of:

- Vowels: 14 letters
- Vowel signs: 15 signs
- Consonants: 36 letters
- Signs: 5 (*anusvāra*, *candrabindu*, *visarga*, *virāma*, *avagraha*)
- Punctuation: 3 (*daṇḍā*, double *daṇḍā*, and an abbreviation sign)
- Special signs: 2 (the sacred symbols *añjī* and *om*)
- Digits: 10

As Maithili was used for recording Vedic and classical Sanskrit texts, the script has several specialized signs, like the Vedic *anusvāra*. At present, there is insufficient information regarding the number of these signs to enumerate them fully in the character inventory. Further investigation of Maithili manuscripts and modern Maithili publications may uncover other marks used in Maithili orthography. In order to accommodate characters as yet unaccounted in the above tabulation, Maithili should be allocated 96 code-points (6 rows).

4 Relationship of Maithili to Bengali

The Maithili script is most closely related to the Bengali script. It is often considered a variant of Bengali because of the similarity in the structure and design of the two script, but such conclusions are inaccurate. Traditionally, the Maithili script is regarded as an independent script and is known in Bengal as *tirute*, meaning “of the Tirhuta region,” ie. the Tirahutā script (Chatterji, 1926: 225). The close relationship of Maithili to Bengali, and more distantly to the Oriya, Assamese, and Newari scripts, is due to the genesis of these scripts from a common source, the Proto-Bengali, or Gaudī, script, which itself evolved from the Kuṭila descendent of Brahmi around 1000 CE. These five scripts became clearly differentiated by the 14th and 15th centuries (Salomon, 1998: 41).

A comparison of the Maithili script to Bengali indicates that several Maithili letters may be considered identical to Bengali letters. For instance, 4 of the 14 Maithili vowel letters; 5 of the 15 Maithili vowel signs; 21 of the 37 Maithili consonant letters; and 4 of the 10 Maithili digits resemble forms found in Bengali (see Tables 3, 4, and 5 for specific comparisons).

Despite such resemblance, Maithili possesses several vowel and consonant letter shapes, consonant conjunct shapes, and orthographic features that are not found in the modern Bengali script. While several of the Maithili consonant letters resemble Bengali letters when written independently, the conjunct forms produced by these letters are different in the two scripts. For example, conjuncts like *n̄ga* and *rga*, as well as consonant-vowel ligatures like *gu*, take different shapes in the two scripts despite the similarity in the shape of *ga*. Another major difference between Maithili and Bengali is the use of *phala* elements for writing consonant-vowel ligatures and a broader *phala* repertoire for the creation of consonant conjuncts. Through a description of the unique features of the Maithili script, this proposal shows that Maithili is an independent script, despite its resemblance to Bengali, and should be encoded separately in Unicode.

5 Unique Features of the Maithili Script

5.1 Symbols and Signs

- The sacred sign, *añjī* (𑒧), is unique to Maithili and is used in the invocations of manuscripts, books, and charts of the Maithili script, or *varṇamālā* (see Figure 1 and Figure 6).
- The form of Maithili *anusvāra* resembles the Devanagari *anusvāra* more than the Bengali. Compare Maithili 𑒧̣ and Bengali ূ.

5.2 Vowels

- A vowel sign for short *e*: 𑒧̣. There is no independent or initial form of this vowel because the sound it represents does not occur at the beginning of words.
- A vowel sign for short *o*: 𑒧̣̣. There is no independent or initial form of this vowel because the sound it represents does not occur at the beginning of words. This sign may be similar to the letter U+09D7 BENGALI AU LENGTH MARK.

- The vowel sign for *ai* is a two-part dependent vowel sign. The first element is written before the consonant and the other attaches above the letter: ै. In Bengali, the *ai* vowel sign is a single sign that is written before the consonant: ঐ. Compare Maithili *mai* मै and Bengali *mai* মৈ.

5.3 Dependent Vowels

- There are two forms of the sign for the vowel *u*: ূ and ্. The first shape is the general *mātrā* sign and the second shape is the *phala* form. The *mātrā* form ূ (compare to Bengali ু) is written below the consonant:

	<i>ghu</i>	<i>cu</i>	<i>thu</i>
Maithili	घू	चू	ठू
Bengali	ঘু	চু	ঠু

For combinations of consonants and *u* where consonants have right-hand vertical stems, the *u* assumes the *phala* shape ্. The *phala* element is attached to the consonant stem to produce a consonant-vowel ligature:

	<i>gu</i>	<i>mu</i>	<i>nu</i>	<i>nu</i>	<i>pu</i>	<i>lu</i>	<i>śu</i>	<i>su</i>
Maithili	ग	म	न	न	प	ल	श	स
Bengali	গু	মু	ণু	নু	পু	লু	শু	সু

With certain consonants independent consonant-*u* ligatures are produced:

	<i>ku</i>	<i>tu</i>	<i>bhu</i>	<i>yu</i>	<i>yu</i>	<i>śu</i>	<i>hu</i>
Maithili	कू	तू	भू	यू	यू	शू	हू
Bengali	কু	তু	ভু	যু	যু	শু	হু

- The sign for *r* is ्र (compare Bengali ্র). With most consonants, the sign is written below the letter:

	<i>pr</i>	<i>tr</i>	<i>br</i>
Maithili	प्र	त्र	ब्र
Bengali	প্ৰ	ত্ৰ	ব্ৰ

With certain consonants independent consonant-*r* ligatures are produced:

	<i>kr</i>	<i>tr</i>	<i>bhr</i>	<i>hr</i>
Maithili	क्र	त्र	भ्र	ह्र
Bengali	ক্ৰ	ত্ৰ	ভ্ৰ	হ্ৰ

5.4 Consonants

- Maithili possesses distinct characters for *ba* बै and *va* वै. Bengali uses the single letter *ba* ব for both sounds. In consonant conjuncts, Maithili *ba* is represented by the dotted *ba-phala* and *va* is represented by the dotted *ba-phala* and a *candra* above the top-line, for example, *mba* म्बै and *mva* म्वै.

This is to distinguish such forms from consonant-vowel ligatures formed with the *u* vowel sign, for example, *mu* मु.

- Maithili *ba* also takes different shapes when it appears in conjuncts with certain consonants. It typically retains its base shape बाँ, but it also takes the form बाँँ, as in *bda* बाँँ in the word *śabda* शब्द.

5.5 Consonant Conjuncts

- In consonant clusters where *ya* is the second element, it either takes the *phala* form य or it merges with the consonant to produce an independent ligature. The use of *ya-phala* in Maithili is similar to that in Bengali: য়. The conjunct forms created with *ya* occur with certain consonants due to the shape of the letters:

	<i>tya</i>	<i>dya</i>	<i>nya</i>	<i>bhya</i>	<i>śya</i>	<i>hya</i>
Maithili	तय	दय	नय	भय	शय	हय
Bengali	ত	দ	ন	ভ	শ	হ

- The function of *repha* in Maithili is similar to that in Bengali and Devanagari. Generally, it is written above the following consonant: *rpa* in Maithili र्प and in Bengali র্প. In some cases, the *repha* merges with the consonant to which it is applied to create a distinct ligature: *rga* in Maithili र्ग and Bengali র্গ.
- Some consonant conjuncts involving *la* are produced using the *phala* form of *la*, ल्: *kla* in Maithili क्ल and in Bengali ক্ল; *phla* in Maithili फ्ल and in Bengali ফ্ল.
- Some consonant conjuncts involving *na* are produced using the *phala* form of *na*, न्: *kna* in Maithili क्न and Bengali ক্ন.
- Several consonant conjuncts are unique to Maithili and do not occur in Bengali. Some examples are:









	<i>nga</i>	<i>cca</i>	<i>ccha</i>	<i>ṭṭa</i>	<i>ṣṭa</i>	<i>hra</i>	<i>hla</i>
Maithili	ङ	च	छ	ट्ट	ष्ठ	ह्र	ह्ल
Bengali	ঙ্গ	চ্চ	ছ্ছ	ট্ট	ষ্ট	হ্র	হ্ল

5.6 Special Cases

- When *ta* त is the first element in a consonant cluster, it is represented differently depending on the second element of the cluster. When it appears as the first element in clusters with *ta*, *ya*, *ra*, and *va*, it combines with these second elements to form conjuncts similar to those in Bengali. With all other consonants, *ta* takes the form त्. For example, *tka* त्क, as in the word *saratkāla* is written in Maithili as सवकाल, but in Bengali as সরৎকাল. This shape of *ta* is semantically similar to Bengali *khaṇḍa* ta ত্; however, unlike *khaṇḍa* ta, it is unnecessary to encode ত্ explicitly since all of the possible contexts for its use are known.
- When *ta* appears in the word-final position with a *virāma*, it is written as is the convention in Devanagari: त्. A variant method is to curve the head-stroke towards the base: त्.

5.7 Homoglyphs

The forms of several Maithili letters resemble those in Bengali, but the meaning of the forms are different in the two scripts. Some of the prominent differences are discussed below.

- In Maithili the element  represents an alternate form of the vowel sign *u*. In modern Bengali it represents *ba-phala* and is used only in the creation of conjuncts. For example, the form  represents *su* in Maithili, but *sva* in Bengali.
- The Maithili letter  represents *va*. In Bengali, the letter represents *ra*. Similarly, the letter  represents Maithili *ra*, but Bengali *ba*.
- Maithili *na*  resembles Bengali *la* ; while Maithili *la*  resembles Bengali *na* .

6 Encoding the Maithili Script in Unicode

The above description of the Maithili script and its unique features indicates that Maithili letters are elements of a distinct script, not typographical variants of Bengali letters. Therefore, Maithili should be encoded as an independent script in Unicode. The similarities between Maithili and Bengali, however, might prompt a call to unify Maithili with Bengali. This approach is not recommended as it would contribute to conflicts in the semantics of Maithili and Bengali letters, especially homoglyphs and script-specific conjuncts created from independent forms of common letters. A separate encoding for Maithili is required in order to distinguish the Maithili script from Bengali in plain-text. Unification would force distinctions between the scripts to be maintained solely at the font or representation level and would limit the ability to differentiate between the scripts programmatically for text-processing purposes. This would pose technological difficulties in instances where Maithili and Bengali appear in the same document.

The distinctness of the Maithili script and the historical and contemporary uses of the script support the encoding of Maithili in Unicode as a separate script. A standard encoding for Maithili will benefit the Maithili-speaking community by enabling it to adapt the traditional script of its language in electronic media for general communication and for literary development. A standard for the script will also enable scholars engaged in research on Maithili language and literature to preserve and reproduce Maithili manuscripts through digital technologies. Moreover, organizations in South Asia are working to develop fonts and standards for representing the Maithili script on computers. A standard encoding in Unicode would benefit technical groups that are implementing the Maithili language and script for use in information technology. Although Maithili is an endangered script, the Maithili-speaking community continues to preserve the script for traditional purposes, while seeking to implement it to meet the needs of modern communication and computing technologies.

7 Acknowledgments

The present author would like to acknowledge the advice and generosity of Dr. Dragomir Dimitriov of the Nepal Research Center, Kathmandu, Nepal. Dimitriov provided the author with Maithili primers printed in Nepal, from which selections have been extracted to present as specimens in this proposal.

8 Bibliography

- Chatterji, Suniti Kumar. *The Origin and Development of the Bengali Language*. Part I: Introduction, Phonology. Reprint of the 1926 ed. by Calcutta University Press. London: George Allen & Unwin, 1970 [1926].
- eCube: Solutions & Research. “Tirhuta Lipi: The Native Script of Maithilee.” 2003. Electronic resource available at <http://www.tirhotalipi.4t.com/TirhutaLipiAlpha.pdf>. Accessed June 2006.
- Grierson, George A. *Linguistic Survey of India*. Volume V. Indo-Aryan family, Eastern group. Pt. II. Specimens of the Bihārī and Oṛiyā languages. Reprint. Delhi: Motilal Banarsidass, 1968 [1903].
- Mishra, Jayakanta. बृहत् मैथिली शब्दकोश [*Br̥hat Maithilī Śabdakośa* = The Great Maithili Dictionary]. Fascicule 1. 1st ed. Simla: Indian Institute of Advanced Study, 1973.
- Rāya, Jīvanātha. मैथिली प्रथम पुस्तक [*Maithilī Prathama Pustaka* = Maithili Primer]. Reprint of edition published by Pustaka Bhaṇḍāra, Laheriyāsarāya, Bihāra; (1970?). Mithilākṣara Puraskāra Koṣa: Ekarahiyā, Mahottarī, Nepal, 2003.
- Salomon, Richard. *Indian Epigraphy: A Guide to the Study of Inscriptions in Sanskrit, Prakrit, and the Other Indo-Aryan Languages*. Oxford University Press: New York, 1998.
- Script Encoding Initiative. “Unicode Scripts Research.” April 12, 2006. Electronic resource available at <http://www.linguistics.berkeley.edu/sei/USR.html#n101>. Accessed June 2006.

	xx00	xx01	xx02	xx03	xx04	xx05
0	ি	ও	ট	ন	ে	০
1	ঁ	ঔ	ঢ়	ন্ন	ে	১
2	ঁ	ক	ণ	র	ৈ	২
3	ং	খ	ত	শ	ো	৩
4	ঞ	গ	থ	ষ	ী	৪
5	ঞা	ঘ	দ	স	ৌ	৫
6	জ	ঙ	ধ	হ	্	৬
7	জা	চ	ন	া	ই	৭
8	ঙ	ছ	প	ি	।	৮
9	ঙ	জ	ফ	ী	॥	৯
A	ঋ	ঌ	ঐ	্	০	
B	ঋ	ঐ	ভ	্	ঐ	
C	নৃ	ঐ	ম	্		
D	নৃ	ঐ	য	্		
E	এ	ড	য়	্		
F	ঐ	ড়	ব	্		

Table 1: Preliminary Glyph Chart for Maithili. Gray highlighting indicates that there is a similar letter in the Bengali script.

xx00;MAITHILI	SYMBOL ANJI	xx2C;MAITHILI	LETTER MA
xx01;MAITHILI	SIGN CANDRABINDU	xx2D;MAITHILI	LETTER YA
xx02;MAITHILI	SIGN ANUSVARA	xx2E;MAITHILI	LETTER YYA
xx03;MAITHILI	SIGN VISARGA	xx2F;MAITHILI	LETTER RA
xx04;MAITHILI	LETTER A	xx30;MAITHILI	LETTER LA
xx05;MAITHILI	LETTER AA	xx31;MAITHILI	LETTER LLA
xx06;MAITHILI	LETTER I	xx32;MAITHILI	LETTER VA
xx07;MAITHILI	LETTER II	xx33;MAITHILI	LETTER SHA
xx08;MAITHILI	LETTER U	xx34;MAITHILI	LETTER SSA
xx09;MAITHILI	LETTER UU	xx35;MAITHILI	LETTER SA
xx0A;MAITHILI	LETTER VOCALIC R	xx36;MAITHILI	LETTER HA
xx0B;MAITHILI	LETTER VOCALIC RR	xx37;MAITHILI	VOWEL SIGN AA
xx0C;MAITHILI	LETTER VOCALIC L	xx38;MAITHILI	VOWEL SIGN I
xx0D;MAITHILI	LETTER VOCALIC LL	xx39;MAITHILI	VOWEL SIGN II
xx0E;MAITHILI	LETTER E	xx3A;MAITHILI	VOWEL SIGN U
xx0F;MAITHILI	LETTER AI	xx3B;MAITHILI	VOWEL SIGN UU
xx10;MAITHILI	LETTER O	xx3C;MAITHILI	VOWEL SIGN VOCALIC R
xx11;MAITHILI	LETTER AU	xx3D;MAITHILI	VOWEL SIGN VOCALIC RR
xx12;MAITHILI	LETTER KA	xx3E;MAITHILI	VOWEL SIGN VOCALIC L
xx13;MAITHILI	LETTER KHA	xx3F;MAITHILI	VOWEL SIGN VOCALIC LL
xx14;MAITHILI	LETTER GA	xx40;MAITHILI	VOWEL SIGN E
xx15;MAITHILI	LETTER GHA	xx41;MAITHILI	VOWEL SIGN SHORT E
xx16;MAITHILI	LETTER NGA	xx42;MAITHILI	VOWEL SIGN AI
xx17;MAITHILI	LETTER CA	xx43;MAITHILI	VOWEL SIGN O
xx18;MAITHILI	LETTER CHA	xx44;MAITHILI	VOWEL SIGN SHORT O
xx19;MAITHILI	LETTER JA	xx45;MAITHILI	VOWEL SIGN AU
xx1A;MAITHILI	LETTER JHA	xx46;MAITHILI	SIGN VIRAMA
xx1B;MAITHILI	LETTER NYA	xx47;MAITHILI	SIGN AVAGRAHA
xx1C;MAITHILI	LETTER TTA	xx48;MAITHILI	DANDA
xx1D;MAITHILI	LETTER TTHA	xx49;MAITHILI	DOUBLE DANDA
xx1E;MAITHILI	LETTER DDA	xx4A;MAITHILI	ABBREVIATION SIGN
xx1F;MAITHILI	LETTER DDDHA	xx4B;MAITHILI	SYMBOL OM
xx20;MAITHILI	LETTER DDHA	xx50;MAITHILI	DIGIT ZERO
xx21;MAITHILI	LETTER RHA	xx51;MAITHILI	DIGIT ONE
xx22;MAITHILI	LETTER NNA	xx52;MAITHILI	DIGIT TWO
xx23;MAITHILI	LETTER TA	xx53;MAITHILI	DIGIT THREE
xx24;MAITHILI	LETTER THA	xx54;MAITHILI	DIGIT FOUR
xx25;MAITHILI	LETTER DA	xx55;MAITHILI	DIGIT FIVE
xx26;MAITHILI	LETTER DHA	xx56;MAITHILI	DIGIT SIX
xx27;MAITHILI	LETTER NA	xx57;MAITHILI	DIGIT SEVEN
xx28;MAITHILI	LETTER PA	xx58;MAITHILI	DIGIT EIGHT
xx29;MAITHILI	LETTER PHA	xx59;MAITHILI	DIGIT NINE
xx2A;MAITHILI	LETTER BA		
xx2B;MAITHILI	LETTER BHA		

Table 2: Preliminary Character Names for Maithili

	MAITHILI	BENGALI		MAITHILI	BENGALI
<i>a</i>	अ	অ	<i>a</i>	<i>implicit vowel</i>	
<i>ā</i>	आ	আ	<i>-ā</i>	া	া
<i>i</i>	इ	ই	<i>-i</i>	ি	ি
<i>ī</i>	ई	ঈ	<i>-ī</i>	ী	ী
<i>u</i>	उ	উ	<i>-u</i>	ু	ু
<i>ū</i>	ऊ	ঊ	<i>-ū</i>	ূ	ূ
<i>r̥</i>	ऋ	ঋ	<i>-r̥</i>	্ৰ	্ৰ
<i>r̄</i>	ॠ	ৠ	<i>-r̄</i>	ূ	ূ
<i>l̥</i>	ऌ	ৌ	<i>-l̥</i>	্ল	্ল
<i>l̄</i>	ॡ	ৡ	<i>-l̄</i>	্	্
<i>e</i>	ए	এ	<i>-e</i>	ে	ে
<i>ě</i>	<i>no independent form</i>		<i>-ě</i>	ৈ	—
<i>ai</i>	ऐ	ঐ	<i>-ai</i>	়ৈ	়ৈ
<i>o</i>	ओ	ও	<i>-o</i>	ৌ	ৌ
<i>ō</i>	<i>no independent form</i>		<i>-ō</i>	ৌ	—
<i>au</i>	औ	ঔ	<i>-au</i>	ৌ	ৌ

Table 3: Comparison of Maithili and Bengali vowel letters and signs. Gray highlighting indicates similarities between letters of the two scripts.

MAITHILI		BENGALI	
<i>ka</i>	क	ক	
<i>kha</i>	ख	খ	
<i>ga</i>	ग	গ	
<i>gha</i>	घ	ঘ	
<i>na</i>	ङ	ঙ	
<i>ca</i>	च	চ	
<i>cha</i>	छ	ছ	
<i>ja</i>	ज	জ	
<i>jha</i>	झ	ঝ	
<i>ña</i>	ঞ	ঞ	
<i>ṭa</i>	ट	ট	
<i>ṭha</i>	ठ	ঠ	
<i>ḍa</i>	ड	ড	
<i>ḍha</i>	ढ	ঢ	
<i>ṇa</i>	ण	ণ	
<i>ta</i>	त	ত	
<i>tha</i>	थ	থ	
<i>da</i>	द	দ	
<i>dha</i>	ध	ধ	
<i>na</i>	न	ন	

MAITHILI		BENGALI	
<i>pa</i>	प	প	
<i>pha</i>	फ	ফ	
<i>ba</i>	ब	ব	
<i>bha</i>	भ	ভ	
<i>ma</i>	म	ম	
<i>ya</i>	य	য	
<i>yā</i>	य़	য়	
<i>ra</i>	र	র	
<i>la</i>	ल	ল	
<i>va</i>	व	—	
<i>śa</i>	श	শ	
<i>ṣa</i>	ष	ষ	
<i>sa</i>	स	স	
<i>ha</i>	ह	হ	
<i>Ra</i>	ड़	ড়	
<i>Rha</i>	ढ़	ঢ়	
<i>ḷa</i>	ळ	—	

Table 4: Comparison of Maithili and Bengali consonant letters. Gray highlighting indicates similarities between letters of the two scripts.

	MAITHILI	BENGALI
0	○	০
1	১	১
2	২	২
3	৩	৩
4	৪	৪
5	৫	৫
6	৬	৬
7	৭	৭
8	৮	৮
9	৯	৯

Table 5: Comparison of Maithili and Bengali digits. Gray highlighting indicates similarities between letters of the two scripts.

	MAITHILI	BENGALI
<i>candrabindu</i>	◌ঁ	◌ঁ
<i>anusvāra</i>	◌̣	◌̣
<i>visarga</i>	◌̐	◌̐

Table 6: Comparison of Maithili and Bengali miscellaneous signs. Gray highlighting indicates similarities between letters of the two scripts.

सरल अपन व्यवहार) *akutīla*—*Adj.* Simple, honest, unbenent.

अक्षर अक्षर—वि० । जे कुण्टित नहि होअए, अप्रतिबन्ध, सर्वत्र प्रसरणीय, उदार । [अ^३ + सं० कुण्टित] लाल० रामा० ७३ *akunṭha*—*Adj.* Unobstructed, (not blunted, vigorous, able to work.

अक्षरित अक्षरित—वि० । असङ्कुचित, अलज्जित, अनुगण, अस्वरित, निर्विन् । [अ^३ + सं० कुण्टित] तु० क० अक्षरित । *akunṭhita*—*Adj.* Unblunted, continuous.

अक्षर-मक्षर अक्षर-मक्षर—मक्षर, छोट एवं स्त्री जाति केर (बिना बहरापल दौतक) हाथी । [? सं० मक्षर + नी (स्त्री प्र०) शब्दानुकरणे अक्षर] तु० क० अक्षर-मक्षर (दे०) । मै० सा० इ० ३३४ (अक्षर-मक्षर के बतिआवए चौदह सए दन्तर) *akunā makunā*—Tuskless (female or minor) elephant.

अक्षरित अक्षरित—वि० । क्रोधित नहि, शान्त । का० प्र० । [सं०] एका० २६ । *akupita*—*Adj.* Not angry, normal, P. F.

अक्षर अक्षर—अक्षर (दे०) केर विक० रू० । [सं० अक्षर] अमर० ३२६ (अक्षर नवीन पत्र) *akurā*—*Alt.* of *ākura* (q. v.).

अक्षर^१ अक्षर^१—वि० । कुलरहित, अथलाह कुल । [अ^३ + कुल] (महादेव अक्षर एवं अनादि क्षत्रि); (कुल, अक्षर केर बिनु विचार कए नहि सम्बन्ध स्थिर करब उचित नहि) *akula*^१—*Adj.* not well known family, belonging to a low family.

अक्षर^२ अक्षर^२—वि० । आकुल (दे०) केर लु० का० रू० । वि० मजु० २१० (अक्षर अल्प वेआकुल लोचन) *akula*^२—*Adj.* Obs. Poet. form of *ākula* (q. v.).

अक्षर अक्षर—पू० क्रि० । अक्षर (दे०) केर संक्षिप्त रू० । [आकुल + आ] तु० क० अक्षर (डा० उ० ना० ति० २५१) *akulā*—*Part.* Short form of *akulāe* (q. v.).

अक्षर अक्षर—अक्षर केर पू० क्रि० एवं क्रि० वि० क रू० । *akulāe*—*Part.* and *Adv.* form of *akulāe*ba.

अक्षर अक्षर—क्रि० । आकुल (दे०) केर मध्य० आद० भू० रू० । का० प्र० । [आकुल + अधि] रामा० १६४ (बिरही जन मन-मन अक्षर) *akulāthi*—*V.* Past. sec. pers. hon. of *ākula* (q. v.).

अक्षर अक्षर—क्रि० । आकुल (दे०) केर प्रे० रू० । [आकुल + अब] मन० ८१ (दलमलित धरनी अक्षर) *akulābae*—*V.* Cau. of *ākula* (q. v.).

अक्षर अक्षर—क्रि० वि०, पू० क्रि० । अक्षर (दे०) केर विक० रू० । [आकुल + आय] रामा० २५७ (कपिल सकल विकल अक्षर); मोद १७१-१८ (लोचन समवेदना करथि अक्षर); एका० (रुग अक्षर कुलायमे कनइत गेल समाय) *akulāya*—*Part.* *Adv.* *Alt.* of *akulāe* (q. v.).

अक्षर अक्षर—वि० । अक्षर (दे०) केर प्रा० लु० का० रू० । वि० ने० १६८ (अक्षर सजो यदि कए सदभाव); वि० मजु० (ताल०) १२५ (अक्षर बोल नहि ओढ़ धरि निरबह); पु० प० ७२ (अक्षर पापोत्साह); चन्द्र० ११४ (अक्षर लोके धरनि परिपूत) *akulina*—*Adj.* Obs. E. Poet. form of *akulīna* (q. v.).

अक्षर अक्षर—वि० । अक्षर (दे०) केर स्त्री० रू० । [अ^३ + कुल + इनि] Grierson. अक्षर विआही कुलक उपहास = नीच कुलोत्पन्ना स्त्रीसँ विवाह कएलासँ अपनहु अभिजात्य वंशक उपहास होइत छैक । *akulini*—*Adj.* Fem. of *akulīna* (q. v.).

अक्षर अक्षर—वि० । नीच कुलक नहि, छोटहा, अथलाह वा नीच वंशक । [अ^३ + कुलीन (दे०)] तु० क० १ बं०, ने० अक्षर; २ अक्षर (दे०) । पु० प० ३६ (अक्षरक संसर्गसँ...); मि० ३७४ (कोनो व्यक्ति अक्षर मोसाहेब पदपर रहैत...) *akulīna*—*Adj.* Low-born, of no high descent.

अक्षर अक्षर—क्रि० । आकुल (दे०) केर भूत०, उत्त० एवं मध्य० पु०, आद० रू० । [आकुल + अलहुँ (दे०)] तु० क० १ म० अक्षर होए; २ अक्षर (दे०) । सुक्तिधरा ४३ । *akulai-lahū*—*V.* Past. first and second person hon. of *ākula* (q. v.).

अक्षर अक्षर—वि० । कार्यकुशल नहि, अनिपुण । [सं०] तु० क० बं० हि० उ० ने० अक्षर । कीर्ति० ३७ (अक्षर बेविह एवक पइ अवर तुम्ह परताप) *akusala*—*Adj.* Not expert, not well-versed, not well.

अक्षर अक्षर—अक्षर (दे०) केर विक० रू० । वि० मजु० ५७१ (जटा देल अक्षर लगाय) *akusi*—*Alt.* form of *ākusi* (q. v.).

अक्षर अक्षर—वि० । कृतज्ञ, नीच, अधम । [सं०] तु० क० बं० अक्षर । *akṛtajña*—*Adj.* Ungrateful.

अक्षर अक्षर—कृतज्ञता, नीचता । [अ^३ + सं० कृत-ज्ञता] मोद ६७, २५ (अक्षरता मैदिल समुदाय केर प्रधान दोष) ऐ० ६६, १५ (अक्षरता लिखव व्यर्थ) *akṛtajñatā*—Ungratefulness, meanness.

अक्षर अक्षर—क्रि० वि० । कृतार्थ नहि, व्यर्थमनोरथ, असफल । [अ^३ + कृतार्थ] तु० क० बं० अक्षर । रा० शि० ४४ *akṛtārtha*—*Adj.* Unsatisfied.

अक्षर अक्षर—वि० । नहि कएल । [अ^३ + कृत्य (दे०)] कीर्तिलता ४५ (साहस उत्साह अक्षर बाधा बलि करण दधीचि करो स्पष्ट साध) *akṛtya*^१—*Adj.* Not done.

अक्षर अक्षर—वि० । नहि करबा योग्य (कार्य) । [सं०] तु० क० बं० अक्षर । *akṛtya*—*Adj.* That which should not be done.

अक्षर अक्षर—वि० । नैसर्गिक, स्वाभाविक, कृत्रिम नहि, निष्कपट, निश्चल, बिना शृङ्गारके । [अ^३ + कृत्रिम] तु० क० हि० बं०

Figure 3: An excerpt from the entries in *Brhat Maithili Śabdakośa*, a Maithili-English dictionary (Mishra, 1973: 13). This specimen is an example of Maithili typeset with metal fonts.

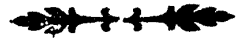
স্বামেনিবেদন

ঐতিহাসিক মিথানুপৰ নিৰ্মিত ঙ্গ শব্দকোশ মেথিলীভাষাক বৃহৎ কোশ শিক। ঙ্গ মেথিলী ও মেথিলীতৰ বিদ্বান্ দ্ব্যক হেতু প্ৰস্তুত কএন গৈন স্বষ্টি। মেথিলীক বিদ্বান্ চাহেত চুনাহ জে স্বনকা একটা তেহন নীক শব্দকোশ হোঙনহি জাহিসঁ ও মেথিলীক প্ৰাচীন সাহিত্যকৈ বঁয়ি ও স্বাস্বাদন কএ মকথি এওঁ জাহিসঁ ও লগভগ ১০০০বৰ্ষক পৰম্পৰাদ্বাৰা স্থিৰ কএন শব্দক শুদ্ধ ৰূপ ও শৈলী নিৰ্ধাৰণ কএ মকথি। স্বাওৰো, যদি ঙ্গ এখনজাঁ স্বাবশ্যক বঁয়ন জায় তঁ, ঙ্গ মিহি ভএ জাএ জে ঙ্গ ভাষা প্ৰাচীনে কানসঁ গ্ৰন্থ-স্থ ভাষা বহন স্বষ্টি, স্বাক্ষক কোনো তেহন উপভাষা নহি শিক জে এখানে জাগৃত ভএ স্বপন স্বস্তিৰ বঁনাএ বখৰাক প্ৰযাস কএ বহন স্বষ্টি। মেথিলীতৰ বিদ্বান্কে এহি শব্দকোশমঁ বঁজাতো ভাৰতীয়-স্বাৰ্যভাষাক কতিয় ভাষাবৈজ্ঞানিক বিষয়ক জ্ঞান হোএতনহি জকৰ স্বৰূপ মোভাগ্যমঁ স্বাও মেথিলীভাষা স্ৰ-ষ্টিত বখনে স্বষ্টি, বিশেষতঃ মেথিলীমঁ সম্বন্ধিত ভাষাসমূহক হেতু, যথা, গুজৰাটী, হিন্দী, বংগলী, স্বম-মিশ্বা, উড়িয়া এওঁ নেপালীক হেতু। এহীদ্বাৰেঁ যত-তত বিস্তৃত ত্তনাম্কে এওঁ বঁয় প্ৰতিমযাম্কে ঠিগৈনী দেন গৈন স্বষ্টি তথা বোমন নিপিমৈ শব্দমভ এওঁ স্বংগ্ৰীমে ওকৰ ম্য্য স্বৰ্যমভ দেন গৈন স্বষ্টি, জাহিসঁ মেথিলীমঁ স্বনভিচ্চ বিদ্বান্ নীক জকাঁ মেথিলী শব্দমভকৈ বঁয়ি মকথি, যতপি এহি কাৰণেঁ বঁজমা শব্দ-কোশক সীমা স্বতিক্ৰমণ কএ বিশ্লকোশক সীমামে এহি গ্ৰন্থকৈ চন জএবঁক স্বাশঁকা ভএ জাঙহ।

এহি শব্দকোশক বিন্যাস এহি প্ৰকাৰেঁ কএন গৈন স্বষ্টি জে মেথিলীক যাবতো শব্দাবলীক এহি-মে সমাবেশ ভএ জাএ। যতপি এতএ ম্য্যতঃ মৃদিত (নিখিত) সাহিত্য মাতক ওপযোগ কএন গৈন স্বষ্টি তথাপি কতকো বাচ্য ও উপভাষাক শব্দমভজকেঁ মেহো স্থান দেবঁক চেছা কএন স্বষ্টি। মেথিলীক শব্দক জতেক ৰূপ হোঙত চেক, জতেক প্ৰকাৰক শব্দ হোঙহ, প্ৰত্যেক প্ৰত্যয় ও পদনুকেৰ স্বৰূপ এহি শব্দ-কোশমে দেন গৈন স্বষ্টি। ত্ৰম, তদ্ভব—মভ শব্দকেঁ এতএ স্থান দেন গৈন স্বষ্টি। হঁ, শব্দ বখৰাক ঙ্গ মিথানু স্বীকাৰ কএন গৈন স্বষ্টি জে জে শব্দ মেথিলীমে ব্যবহৃত হো তকৰহিটো শব্দকোশমে স্বী-কাৰ কএন জাএ। তথাপি বঁজত সাবধান ভেনো উত্তৰ কোনো-কোনো শব্দ চুটিএ গৈন স্বষ্টি। তাহি হেতু দ্বিতীয় সংস্কৰণমে এওঁ প্ৰথমজাঁ সংস্কৰণক স্বনুমে একটা খণ্ডমে চুটৈ এওঁ স্বপুৰ সামগ্ৰীকেঁ শুদ্ধ কএ সমা-বেশ কৰবঁক বিচাৰ স্বষ্টি। বস্তুতঃ হমবানোকনিক সমষ্ক দুগ মাস্ত চুন—এক ঙ্গ, জে শব্দমগ্ৰহক ঙ্গিয়াকেঁ প্ৰঃ চনাওন জাএ এওঁ মভটো মগ্ৰহীত শব্দকেঁ দোহৰাওন জাএ, কিন্তু তাহিমে কতজাঁ বিশ্ৰাম লএ মনন্তজ হোএবঁক সম্ভাবনা নহি চুন। দোমৰ মাস্ত ঙ্গ, জে (জেনা কোশকাৰ ডাক্ৰেব সমম্ভন জ্ঞান-মন কহনে চুখি) জতবঁ শব্দমগ্ৰহ ভএ গৈন স্বষ্টি তকৰা ওপযোগ কৰবঁক স্ববসৰ স্বনকা দিএক। স্বাৰ্থিক কাৰণজাঁ জতবেঁ ভেন তকৰে সমপ্ৰতি ওপযোগ কএ লেবঁ মভব ভেন। কাৰণ মৰকাৰ ও স্বন্য দাতা স্বাৰ্থিক মহাযতা দেবঁক হেতু প্ৰস্তুতক কিছু স্বঁশ চুপাএ দেবঁক স্বাগ্ৰহ কএন। গহো ধাৰণা হমবাসভকেঁ ভএ গৈন জে যদি কিছু স্বঁশ চুপত তঁ বিদ্বান্-লোকনিক (স্বাশা কবেত চুী 'স্বস্ম') সমালোচনা হোএত জাহিসঁ হমবাসভক গ্ৰন্থক প্ৰণয়ন-ক্ৰিয়া উচিতকৈ ভএ বহন স্বষ্টি বা নহি তথা ওহিমে কী কিছু, স্ধাৰ কএন জা মকেচু জাহিসঁ চুপেত-চুপেত মেহো কিছু, শুদ্ধ কএন জা মকএ গ্ৰন্থাদি লভ হোএত।

Figure 4: An excerpt from the preface to *Brhat Maithili Śabdakośa*, a Maithili-English dictionary (Mishra, 1973: 25). This specimen is an example of Maithili typeset with metal fonts.

समर्पण ।



हे शिरनोकरासिनि जननि !

अहाँकेँ अहण हरत, आगसँ प्रारः
३७ वर्ष पूरै मैथिनी निपिदुहा अक्कहाइ
भेना उँतुह हमरा मिथिनाक्कह शिखाउन अहाँ
अपनहि ये मिथि मेना पहर हमरा देराक्कह,
केथी तथा रत्नना ककहअसँ भीषण नहि
पड़न। अतः मैथिनी निपिये प्रथम मीसका-
क्कह-श्रद्धित धस्तुक जा 'मैथिनी-प्रथम-धस्तुक'
आग ओही श्रुतिक हक्कारि अहाँक कहकमन-
मे रिसेशे श्रीका-भक्तिपूरक अर्पण कहैत छी
आओह आशा कहैत छी अहाँनोकनिक
आशीर्वादसँ धनः मिथिनाक मातृमण्डली अहाँ-
नोकनियकाँ अपना सन्तानकेँ प्रथम
मिथिनाक्कहक शिक्षा देत ।

मातृनरमी, १३३५. } प्रणत--
जीरनाथ ।

३०

मैथिली-प्रथम-पुस्तक ।

छप्पनम पाठ ।

मिश्र वर्ण ।

चिह्नी (१) ।

श्रीहहिः । कोणनथ ।
रै० र० १ सो० '३१

१ अस्तु सकनमर्नानय चिह्नी श्री-
कष्टिह रारुँकेँ श्रीश्रीनाथक शुभाशीर्वाद ।
एतय क्रमन । अहाँक क्रमन पत्र आगए
प्राप्त भेल अछि । पढ़ि आनन्दित भेलअँ ।
आगाँ समाचार ये हमरा सुननामे आयन
अछि ये दहभङ्गीमे मिथिनाक्कहक डापा
होमय नगनेक अछि । यदि से सह तँ अहाँ
जा पत्र देखैत एक प्रति मिथिनाक्कहक
रत्न-पहिचय कीनिनेर आओह मिथिनाक्कह
भीषिकय हमरा सल ओही अक्कहमे पत्र
रारहाइ कहर । अहाँ यदि से कर शिकर तँ

Figure 5: The preface from *Maithilī Prathama Pustaka*, printed in Maithili type (Rāya, 2003).

Figure 6: An excerpt from *Maithilī Prathama Pustaka* (Rāya, 2003: 30). The passage begins with the symbol *añjī*.

बृहत् मैथिली शब्दकोश

बृहत् मैथिली शब्दकोश

BRHAT MAITHILĪ ŚABDAKOŚA

Fascicule I

अ अ A—अव अव Ava

श्रीजयकान्तमिश्र

श्रीजयकान्तमिश्र

Jayakanta Mishra



INDIAN INSTITUTE OF ADVANCED STUDY

SIMLA

Figure 7: Title page of *Brhat Maithilī Śabdakośa*, a Maithili-English dictionary (Mishra, 1973).

Tirhuta Lipi: The Native Script of Maithilee

अ आ इ ई उ ऊ
 अ् अ् अ् अ् अ् अ्
 ए ऐ ओ औ अं अः
 ए ऐ ओ औ अं अः
 क ख ग घ ङ
 क ख ग घ ङ
 च छ ज झ ञ
 च छ ज झ ञ
 ट ठ ड ढ ण
 ट ठ ड ढ ण
 त थ द ध न
 त थ द ध न
 प फ ब भ म
 प फ ब भ म

Tirhuta Lipi: The Native Script of Maithilee

य र ल व श ष स ह
 य व न र श ष स ह
 क्ष त्र ज्ञ
 क्ष त्र ज्ञ
 क का कि की कु कू
 क का कि की कु कू
 के कै को कौ कं कः
 के कै को कौ कं कः
 म् प वृ सं द्
 म् प वृ सं द्
 ऋ ॠ
 ऋ ॠ

Figure 8: A chart of the Maithili script typeset with the digitized Maithili font, “Tirhuta,” developed by eCube: Solutions & Research (2003).