

# Final Proposal for Encoding the Mwangwego Script in the UCS

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**To:** Script Encoding Working Group (SEWG) / Unicode Technical Committee (UTC)

**From:** Oreen Yousuf; Daniel Yacob

**Subject:** Mwangwego

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## General Overview:

This is a revised proposal to encode the Mwangwego script into the Unicode Standard. It supersedes the following documents:

- [L2/12-251](#): “Preliminary proposal to encode the Mwangwego script in the UCS”
- [L2/12-311](#): “Proposal to encode the Mwangwego script in the UCS”
- [L2/24-241](#): “Proposal for Encoding the Mwangwego Script in the UCS”
- [L2/25-039](#): “Revised Proposal for Encoding the Mwangwego Script in the UCS”

This version differs from the most recent version, L2/25-039, due to the following reasons and updates:

- ISO 15924 code for the Mwangwego script.
- More images showing evidence of use of the script. A [Google Drive link](#) holds more than 100 images showing evidence of use, and PDFs compiling selected works.
- New formatting of images for SEWG convenience.
- Letter of endorsement to encode the Mwangwego script from a Malawian linguist is included in Section VIII.
- A discussion of the visual and logical orders of composed letters is added.

## I Background

The Mwangwego script was first devised in 1979 by Nolence Moses Mwangwego of Malawi, and is designed for writing the languages of Malawi. Some of these languages include the following, along with their *ISO 639 code* and speaker count: Chewa (*nya*, 2 million), Lomwe (*njl*, 2.5 million), Sena (*swk* in Malawi, *seh* in Mozambican, *bwg* for the divergent Barwe dialect; 2.9 million), Tonga (*tog*, 170,000), Tumbuka (*tum*, 2.3 million), Yao (*yao*, 3.1 million), Nyakyusa (*nyy*, 1.4 million). The majority of these languages are also spoken in parts of nearby countries such as Mozambique, Tanzania and Zambia.

Additional letters were created up until April 7, 1997 and launched to the public. The script has not changed significantly over time and is not related to any other script. In 2003 the script received notable publicity, including an audience with Minister Kamangadzai Kingsley Chambalo, the Malawian Minister of Youth, Sports and Culture at the time.

The users of the community are students of the script, some of which are school-aged children. There was an initial community of 200-300 adherents of Mwangwego script in 2001 (Dobrovolny 2010). The number of people who have learned the script since 2001 is between 2,500-3,000 and has been regarded positively by paleographers as “reach[ing] the rank of a small movement” (Kostelnik 2023). Many are training to be teachers themselves. The script has been continuously learned and taught since 2001 in all 3 regions of Malawi: Northern, Central and Southern Regions. The script has been taught

informally since 2001. The distribution of January 2023 cohort of students is broken down as follows: 10 in Karonga, 15 in Mzuzu, 10 in the Malawian capital of Lilongwe, and 5 in Blantyre. The script is also included in primers and learning exercise materials for students. As of mid-2024, another cohort of teachers are being trained.

While there has only been 1 full book officially printed and published in the script, by the creator, as cost is a major obstacle for the majority of past and current learners, the script has taken on a life beyond the script creator and his social circle. Individuals regularly correspond in the Mwangwego script, producing letters, grocery lists, journal entries, business memos, manifestos, and more, in languages like Chichewa and Tumbuka. Script users own mobile phones and are keen to use the script in digital environments. The proposal authors have even introduced previously unknown script users to the creator. Every image of handwritten text in Section IX showing evidence of use comes from users other than the script creator. Language policy in Malawi has the government applying a limited top-down approach. Mwangwego persists and has grown instead by grassroots efforts where it has spread beyond the creator's home city and native language. Many of the images found in Section IX and the Google Drive come from Mzuzu, Lilongwe, and Blantyre. There are at least 4 fonts: one made by Tapiwanashe Sebastian Garikayi; one by Andrij Rovenchak; one by Enzo Bicudo Pepi (MetrikEnzyme); and one by Jana Reddemann and Jenna Leich, the latter of which is used in this proposal. Under consultation with the script community, the authors have developed a keyboard that applies the character model described in this proposal. The keyboard has been developed with the well-known "Keyman" software and a Microsoft Windows executable is available here: <https://bit.ly/4e11h3D>.

While the Malawian government endorses the Latin script for the languages mentioned above, there are no other scripts in competition among the Mwangwego script community, and the character repertoire has been stable for decades. There is also a current project to digitize Nolence Mwangwego's Chichewa language book "𑌒 𑌒𑌒𑌒 𑌒𑌒 𑌒𑌒?" (Latin transliteration: "A Malawi Tili Pati?"; English translation: "Malawians, where are we?"), which was written in the Mwangwego script.

## II Script Name

The proposed script name is "**MWANGWEGO**", which is named after the creator, Nolence Mwangwego. This is the name used by the script community. The proposed ISO 15924 code for the Mwangwego script is "Mwgo".

On 3 April 2024, Nolence Mwangwego stated on Facebook that the script "*in Malawian languages is called 'musitu wa Mwangwego'*". The word 'musitu' comes from three parts of the script: *musisi*, *siri*, *mutuyo*. *Mwangwego script was invented in April 1979 and was inaugurated on April 7, 1997. These are dates to remember*" (see Reference 6 in Section VII).

## III Structure

The Mwangwego script is an abugida written left-to-right in horizontal lines, from the top to the bottom of a page. The basic grapheme inventory accounts for 31 consonants and 5 vowels – /a/, /ɛ/, /i/, /ɔ/, and /u/. Each basic grapheme represents a syllable composed of a consonant and a vowel (CV), or a vowel (V) by itself. Students first learn the graphemes that have an inherent /a/ vowel (e.g., /a/, /ba/, /tʃa/, etc.). These inherent /a/ vowel graphemes, as shown in the chart below under the column labeled "/a/". Any single one of these graphemes is called a **Musisi**. All Musisi (i.e., the plural) is collectively called **Misisi**. Misisi can be slightly altered in 1 of 4 graphically consistent ways to change the grapheme's vowel from an inherent /a/ to /ɛ/, /i/, /ɔ/, or /u/. Any single one of these 4 vowel modifiers is called a **Siri**. All Siri (i.e., the plural) is collectively called **Masiri**. Attaching Masiri to Misisi will yield a total of 160 basic V or CV syllabic graphemes. Any single one of these new graphemes with a vocalic value of /ɛ/, /i/, /ɔ/, or /u/ is called a **Musiri**. All Musiri (i.e., the plural) is collectively called **Misiri**.

IPA	/a/	/ɛ/	/i/	/ɔ/	/u/
/vowel/	Ɑ	Ɱ	Ɐ	Ɒ	ⱱ
/b/	Ⱳ	ⱳ	ⱴ	Ⱶ	ⱶ
/tʃ/	ⱷ	ⱸ	ⱹ	ⱺ	ⱻ
/d/	ⱼ	ⱽ	Ȿ	Ɀ	Ⳁ
/f/	ⳁ	Ⳃ	ⳃ	Ⳅ	ⳅ
/g/	Ⳇ	ⳇ	Ⳉ	ⳉ	Ⳋ
/ɣ/	ⳋ	Ⳍ	ⳍ	Ⳏ	ⳏ
/h/	Ⳑ	ⳑ	Ⳓ	ⳓ	Ⳕ
/dʒ/	ⳕ	Ⳗ	ⳗ	Ⳙ	ⳙ
/z/	Ⳛ	ⳛ	Ⳝ	ⳝ	Ⳟ
/k/	ⳟ	Ⳡ	ⳡ	Ⳣ	ⳣ
/l/	ⳤ	⳥	⳦	⳧	⳨
/m/	⳩	⳪	Ⳬ	ⳬ	Ⳮ
/n/	ⳮ	⳯	⳰	⳱	Ⳳ
/ŋ/	ⳳ	⳴	⳵	⳶	⳷
/p/	⳸	⳹	⳺	⳻	⳼
/r/	⳾	⳿	ⴀ	ⴁ	ⴂ
/s/	ⴃ	ⴄ	ⴅ	ⴆ	ⴇ
/ʃ/	ⴈ	ⴉ	ⴊ	ⴋ	ⴌ
/t/	ⴍ	ⴎ	ⴏ	ⴐ	ⴑ
/ts/	ⴒ	ⴓ	ⴔ	ⴕ	ⴖ
/pʰ/	ⴗ	ⴘ	ⴙ	ⴚ	ⴛ
/v/	ⴜ	ⴝ	ⴞ	ⴟ	ⴠ
/w/	ⴡ	ⴢ	ⴣ	ⴤ	ⴥ
/j/	⴦	ⴧ	⴨	⴩	⴪
/z/	⴫	⴬	ⴭ	⴮	⴯
/dz/	ⴰ	ⴱ	ⴲ	ⴳ	ⴴ
/dʰ/	ⴵ	ⴶ	ⴷ	ⴸ	ⴹ
/tʰ/	ⴺ	ⴻ	ⴼ	ⴽ	ⴾ
/lʰ/	ⴿ	ⵀ	ⵁ	ⵂ	ⵃ
/!/	ⵄ	ⵅ	ⵆ	ⵇ	ⵈ
/ð/	ⵉ	ⵊ	ⵋ	ⵌ	ⵍ

Table 1. Inventory of the basic V and CV syllabic graphemes in the Mwangwego script.

To change the inherent /a/ vowel of Misiri to /ɛ/, /i/, /ɔ/, or /u/, you fuse Masiri (vowel modifiers) to the bottom-right of Misiri:

Emwa: ◌◌ Example: ʊ (ba) + ◌◌ (-ɛ) = ʌ (be)

Ima: ◌◌ Example: ʊ (ba) + ◌◌ (-i) = ɪ (bi)

Ota: ◌◌ Example: ʊ (ba) + ◌◌ (-ɔ) = ɔ (ba)

Uyu: ◌◌ Example: ʊ (ba) + ◌◌ (-u) = ʊ (bu)

### Mutuyo & Mituyo:

In addition to these vowel modifiers, some consonant (or tone) modifiers appear to the left (spacing) of the basic grapheme, or above or below (non-spacing) the basic grapheme. These can also be used in combination with one another to further extend the repertoire of consonant onsets or, in one case, to mark high-tone to distinguish between homographs. Not all of these modifiers can be used with all basic graphemes. Section X show which marks are possible for the Misiri. All valid possibilities are possible for the Misiri counterparts.

Any one of these marks is called **Mutuyo**. You can attach multiple Mutuyo onto a single basic grapheme. The plural of Mutuyo is **Mituyo**. Some Mituyo configurations produce more complex spacing characters.

The script's previous proposal (Section 4, [L2/12-311](#)) proposed to encode all spacing Mituyo configurations due to the constraints of ligation at the time. For compound consonant modifiers one could use the 'rlig' or 'ccmp' OpenType features to replace a sequent of modifiers with a precomposed stacked version. 'ccmp' would be the most reliable across platforms. Therefore, we propose to only encode the standalone modifiers (i.e., Mutuyo). The set of combinations (i.e., Mituyo) is finite, as is the order in which combinations are combined. It is never correct (i.e., legible) to string them horizontally, and making them "ligatures" may easily fail in many rendering environments, which is unnecessary and undesirable. Readers do not parse the stacks per se, but read the whole cluster as a whole.

#### 1. **MUTUYO** (spacing):

1.1 WAYA. - labializes consonants. There is a unique, non-spacing counterpart of Waya that appears under a letter instead of to the left; see Mutuyo 2.1 below.

Examples of use:

- (waya) + ʊ (ba) = -ʊ (bwa)    - (waya) + ɔ (ma) = -ɔ (mwa)

Example words:

-ʊɓ (bwato)    -ɔɣ (mwala)

1.2 NI. " is primarily used for homorganic palatalization (which may not be reflected in the transliterated romanization).

Examples of use:

" (ni) + ɓ (da) = "ɓ (nda) – tip of the tongue touches the front part of the palate

" (ni) + ʃ (ta) = "ʃ (nta)

" (ni) + ʃ (tsa) = "ʃ (ntsa)

" (ni) + f (dza) = "f (ndza)

" (ni) + ɰ (a) = "ɰ (ng'a) – rear of the tongue touches the palate

" (ni) + ɕ (ga) = "ɕ (nga)

" (ni) + ɟ (cha) = "ɟ (ncha) – middle of the tongue touches the palate

" (ni) + ɟ (ja) = "ɟ (nja)

- " (ni) + ʃ (sa) = "ʃ (nsa) – tongue slightly touches the palate
- " (ni) + ʃ (sha) = "ʃ (nsha)
- " (ni) + ɟ (fa) = "ɟ (mfa) – labiodentalization
- " (ni) + ʋ (va) = "ʋ (mva)

Example words:

"ɓɓ (ndati), "ɛɛ (ng'ona), "ʃɔ (nsapato), "ʃɔ (nchalo)

1.3 HI. ʰ aspirates consonants. Its use may be limited to only a few consonants.

Examples of use:

- ʰ (hi) + ʃ (cha) = ʰʃ (tcha), ʰ (hi) + ɾ (ka) = ʰɾ (kha), ʰ (hi) + ɗ (pa) = ʰɗ (pha)
- ʰ (hi) + ʃ (ta) = ʰʃ (tha) ʰ (hi) + ʃ (tsa) = ʰʃ (tsha)

Example words:

ʰʃɔ (khasu) ʰɾɔ (khama) ʰɗɔ (phala) ʰɔ (thobwa) ʰʃɔ (tchimo)

1.4 MI. ʱ pre-nasalizes labial consonants. It is described as “used when both lips meet heavily.” It is used with 2 Misisi (and of course their corresponding Misiri): ʱ (/ba/) and ɗ (/pa/).

Examples of use:

ʱ (mi) + ʊ (ba) = ʱʊ (mba) ʱ (mi) + ɗ (pa) = ʱɗ (mpa)

Example words:

ʱʊ (mbala) ʱʊ (mbiri) ʱʊ (mbatata) ʱɗ (mpaka)

1.5 MYU. ʷ pre-nasalizes non-labial consonants. It is described as “used when pronouncing a word which involves a slight meeting of both lips.” Myu occurs with many Misisi.

Examples of use:

- ʷ (myu) + ʃ (cha) = ʷʃ (mcha) ʷ (myu) + ɾ (ka) = ʷɾ (mka) ʷ (myu) + ɗ (ma) = ʷɗ (m'ma)
- ʷ (myu) + ʃ (ta) = ʷʃ (mta) ʷ (myu) + ɗ (dza) = ʷɗ (mdza)

Example words:

ʷʃ (mkaka) ʷɾ (mkanda) ʷɗ (m'dziko) ʷɗ (m'mudzi)

1.6 SISA. 's- prefixes 's-' to consonants. Very few words use Sisa as it is mainly used for foreign loan words (e.g., English; see 7:16 of reference 3 in Section VII below).

Examples of use:

'(sisa) + ɾ (ka) = 'ɾ (ska) '(sisa) + ɗ (ma) = 'ɗ (sma) '(sisa) + ʃ (ta) = 'ʃ (sta)

Example words:

'sɾ (stima) 'sɾ (sketi)

1.7 TUMBU. ' causes prenasalization. It is only used for Yao and Nyakyusa/Ngonde.

Examples of use:

- ' (tumbu) + ɗ (da) = 'ɗ (n'da)
- ' (tumbu) + ʎ (nya) = 'ʎ (n'nya)
- ' (tumbu) + ʎ (ya) = 'ʎ (n'ya) – in Yao

' (tumbu) + E (wa) = ' (n'wa)

Example words:

ᑲᑲ, ᑲᑲᑲ, ᑲᑲᑲ

2. **MUTUYO (non-spacing):**

2.1 WAYA-BELOW. ◌ adds a following y-glide (palatalization) to consonants. This is the non-spacing counterpart of WAYA in 1.1 above.

Examples of use:

ᑲ (da) + ◌ (waya) = ᑲᑲ (dya)

ᑲᑲ (ma) + ◌ (waya) = ᑲᑲᑲ (mya)

Example words:

ᑲᑲᑲ, ᑲᑲᑲ, ᑲᑲᑲ

2.2 MURA. ◌ adds a following r-glide to consonants. This Mutuyo is also used for foreign words (e.g., English).

Examples of use:

ᑲ (ba) + ◌ (mura) = ᑲᑲ (bra)

ᑲᑲ (ka) + ◌ (mura) = ᑲᑲᑲ (kra)

ᑲᑲ (ta) + ◌ (mura) = ᑲᑲᑲ (tra)

Example words:

ᑲᑲᑲ, ᑲᑲᑲ

2.3 MULA. ◌ adds a following l-glide to consonants. This Mutuyo is also used for foreign words (e.g., English).

Examples of use:

ᑲ (ba) + ◌ (mula) = ᑲᑲ (bla)

ᑲᑲ (ka) + ◌ (mula) = ᑲᑲᑲ (kla)

ᑲᑲ (ta) + ◌ (mula) = ᑲᑲᑲ (tla)

Example word:

ᑲᑲᑲ (translation: Blantyre)

2.4 PEWA. ◌ serves a variety of purposes, indicating affrication and other consonant modifications. It is particularly used a lot in Tumbuka, Kyangonde (a dialect of Nyakyusa; possibly other Nyakyusa dialects as well), and Yao.

Examples of use:

ᑲ (ba) + ◌ (pewa) = ᑲᑲ (Chichewa Latin transliteration is w̄a;

Tumbuka Latin transliteration is ba; IPA: /βa/)

ᑲᑲ (va) + ◌ (pewa) = ᑲᑲᑲ (bva)

ᑲᑲ (za) + ◌ (pewa) = ᑲᑲᑲ (bza)

ᑲᑲ (fa) + ◌ (pewa) = ᑲᑲᑲ (pfa)

ᑲᑲ (tha) + ◌ (pewa) = ᑲᑲᑲ (IPA: /θa/) – in Lomwe

Example words:

ᵐᵐᵐ, ᵐᵐᵐ

2.5 KWANTHU. ˊ marks high tone, at least on words which might otherwise be misread. It is very important in Chichewa because there are 2 tones (in contrast to a language like Tumbuka having no tones).

Examples of use:

ᵐ (di) + ˊ (kwanthu) = ˊᵐ (ndi)

Example words:

ᵐᵐ (mtengo; translation: tree) to distinguish from ˊᵐᵐ (mtengo; translation: price)

3. **MITUYO “stacks”:**

As Mituyo is the plural of Mutuyo, any combination of 2 individual Mutuyo on a single grapheme can be considered a Mituyo combination. For example, “ᵐ and ˊ both combine a spacing Mutuyo (NI “ and WAYA -, respectively) with a non-spacing Mutuyo (WAYA-BELOW ˊ and PEWA ˆ, respectively). These are considered Mituyo combinations. However, it is worth specifically highlighting how the *spacing* Mutuyo (described in 1.1-1.7 above) can create spacing Mituyo “stacks” that are written on the left of a grapheme. There are 16 possible Mituyo stacks:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ᵐ ᵐᵐ	ˊ ᵐᵐ	ˊ ᵐ	ᵐᵐ ᵐᵐ	ᵐᵐ ᵐ	ᵐᵐ ᵐᵐ	ᵐᵐ ᵐ	ᵐᵐ ᵐᵐ	ᵐᵐ ᵐᵐ	ᵐᵐ ᵐ	ᵐᵐ ᵐᵐ	ᵐᵐ ᵐᵐ	ᵐᵐ ᵐᵐ	ᵐᵐ ᵐᵐ	ᵐᵐ ᵐᵐ	ᵐᵐ ᵐᵐ
MYU NI	MYU HI	MYU WAYA	MI HI	MI WAYA	NI HI	NI WAYA	HI WAYA	SISA NI	TUMBU WAYA	MYU NI HI	MYU HI WAYA	MI HI WAYA	NI HI WAYA	SISA NI HI	MYU NI HI WAYA

Table 2. Inventory of the 16 spacing Mituyo “stacks”.

Similar to the (individual) Mutuyo, not all Mituyo are used for all languages. For example, the Mituyo stack TUMBU+WAYA (numbered 10 in Table 2) is only used in Nyakyusa/Ngonde.

3.1. MYU-NI. ˆ

Examples of use:

ˆ MYU-NI + 3 (da) = ˆ3 (mnda)                      ˆ MYU-NI + ʔ (ka) = ˆʔ (mnka)

Example words:

ˆ3ʔ3ʔ, ˆ3ʔ3ʔ

3.2. MYU-HI. ˆ

Examples of use:

ˆ MYU-HI + ʒ (cha) = ˆʒ (mchha)                      ˆ MYU-HI + ʔ (ka) = ˆʔ (mkha)

Example words:

ˆʒʔ, ˆʒʔ

3.3. MYU-WAYA. ᵃ

Examples of use:

ᵃ MYU-WAYA + ᵀ (ba) = ᵃᵀ (mbwa)

ᵃ MYU-WAYA + ᵎ (cha) = ᵃᵎ (mchwa)

Example words:

ᵃᵀ, ᵃᵎᵀ, ᵃᵎᵎ

3.4. MI-HI. ᵃ

Examples of use:

ᵃ MI-HI + ᵀ (pa) = ᵃᵀ (mphā)

Example words:

ᵃᵀᵀ, ᵃᵀᵎ

3.5. MI-WAYA. ᵃ

Examples of use:

ᵃ MI-WAYA + ᵀ (ba) = ᵃᵀ (mbwa)

ᵃ MI-WAYA + ᵀ (pa) = ᵃᵀ (mpwa)

Example words:

ᵃᵀᵎᵎ, ᵃᵀᵀ, ᵃᵀᵎ

3.6. HI-WAYA. ᵃ

Examples of use:

ᵃ HI-WAYA + ᵀ (ka) = ᵃᵀ (khwa)

ᵃ HI-WAYA + ᵎ (ta) = ᵃᵎ (thwa)

Example words:

ᵃᵀᵎ, ᵃᵀᵎᵎ

3.7. NI-HI. ᵃ

Examples of use:

ᵃ NI-HI + ᵎ (cha) = ᵃᵎ (nchha)

ᵃ NI-HI + ᵀ (ka) = ᵃᵀ (nkha)

Example words:

ᵃᵎᵎᵎ, ᵃᵎᵎ, ᵃᵎᵎᵎ

3.8. NI-WAYA. ᵃ

Examples of use:

ᵃ NI-WAYA + ᵎ (a) = ᵃᵎ (nwa)

ᵃ NI-WAYA + ᵎ (da) = ᵃᵎ (ndwa)

Example words:

ᵃᵎᵎᵎ, ᵃᵎᵎ, ᵃᵎᵎᵎ

3.9. SISA-NI. ᵃ

Examples of use:

ᵃ HI-WAYA + ᵎ (da) = ᵃᵎ (snda)

ᵃ HI-WAYA + ᵎ (ga) = ᵃᵎ (snga)



Example words:

ᄃᄆ

3.10. TUMBU-WAYA. ᄃ

Examples of use:

ᄃ TUMBU-WAYA + ᄆ (gha) = ᄆᄆ (n'ghwa) ᄃ TUMBU-WAYA + ᄇ (ha) = ᄃᄇ (n'hwa)

Example words:

ᄃᄆᄇ

3.11. MYU-NI-HI. ᄃ

Examples of use:

ᄃ MYU-NI-HI + ᄆ (ka) = ᄃᄆ (mnkha) ᄃ MYU-NI-HI + ᄇ (ta) = ᄃᄇ (mntha)

Example words:

ᄃᄆᄇ

3.12. MYU-HI-WAYA. ᄃ

Example of use:

ᄃ MYU-HI-WAYA + ᄉ (cha) = ᄃᄉ (mchhwa)

Example words:

ᄃᄉᄆ

3.13. MI-HI-WAYA. ᄃ

Examples of use:

ᄃ MI-HI-WAYA + ᄆ (pa) = ᄃᄆ (mphwa)

Example words:

ᄃᄆᄆ

3.14. NI-HI-WAYA. ᄃ

Examples of use:

ᄃ NI-HI-WAYA + ᄉ (cha) = ᄃᄉ (nchhwa) ᄃ NI-HI-WAYA + ᄆ (ka) = ᄃᄆ (nkhwa)

Example words:

ᄃᄆᄆ ᄃᄆᄇ

3.15. SISA-NI-HI. ᄃ

Examples of use:

ᄃ SISA-NI-HI + ᄆ (ka) = ᄃᄆ (snkha) ᄃ SISA-NI-HI + ᄇ (ta) = ᄃᄇ (sntha)

Example words:

ᄃᄆᄇ

3.16. MYU-NI-HI-WAYA. 𑌵

Examples of use:

𑌵 MYU-NI-HI-WAYA + 𑌶 (ka) = 𑌶𑌵 (mnkhwa)      𑌵 MYU-NI-HI-WAYA + 𑌷 (ta) = 𑌷𑌵 (mnthwa)

Example words:

𑌶𑌵      𑌷𑌵

In summary, there are 32 Misisi (inherent /a/ vowel graphemes), 4 Masiri (vowel modifiers), 12 Mutuyo (11 consonant modifiers; 1 tone modifier), and 16 Mituyo (“stacks”) to encode.

- It is worth mentioning that the WAYA Mutuyo and the WAYA-BELOW Mutuyo *must* be encoded as two symbols and not only one. This is because if one were to process plain text (e.g., transliteration) one needs to be able to interpret the bytes as being “wa” (from WAYA) and “ya” (from WAYA-BELOW), which one couldn’t do with a single character point as position information is lost in plain text.

**Punctuation and Numerals/Digits:**

There are no script-specific digits in the script; Hindu-Arabic digits (i.e., 0123456789) are used. There are no script-specific punctuation marks. Words are separated using U+0020 SPACE .

**IV Character Repertoire**

Table 3 presents the character names for the 32 Mwanwego Misisi (singular Musisi; inherent -/a/ graphemes/letters), 4 Masiri (singular Siri; vowel marks), 12 Mutuyo (consonant/tone modifiers), and 16 Mituyo (complex Mutuyo combinations). The Chichewa language terms for the orthographic elements have been employed to clearly and distinctly identify the characters by their encoded names.

𑌵	U+16E00 MWANGWEGO LETTER A
𑌶	U+16E01 MWANGWEGO LETTER BA
𑌷	U+16E02 MWANGWEGO LETTER CHA
𑌸	U+16E03 MWANGWEGO LETTER DA
𑌹	U+16E04 MWANGWEGO LETTER FA
𑌺	U+16E05 MWANGWEGO LETTER GA
𑌻	U+16E06 MWANGWEGO LETTER GHA
𑌼	U+16E07 MWANGWEGO LETTER HA
𑌽	U+16E08 MWANGWEGO LETTER JA
𑌾	U+16E09 MWANGWEGO LETTER ZHA
𑌿	U+16E0A MWANGWEGO LETTER KA
𑍀	U+16E0B MWANGWEGO LETTER LA
𑍁	U+16E0C MWANGWEGO LETTER MA
𑍂	U+16E0D MWANGWEGO LETTER NA

Ƴ	U+16E0E MWANGWEGO LETTER NYA
ɗ	U+16E0F MWANGWEGO LETTER PA
ɓ	U+16E10 MWANGWEGO LETTER RA
ḡ	U+16E11 MWANGWEGO LETTER SA
ḥ	U+16E12 MWANGWEGO LETTER SHA
ƶ	U+16E13 MWANGWEGO LETTER TA
ɗ	U+16E14 MWANGWEGO LETTER TSA
ɓ	U+16E15 MWANGWEGO LETTER PSA
ɓ	U+16E16 MWANGWEGO LETTER VA
Ɛ	U+16E17 MWANGWEGO LETTER WA
ɔ	U+16E18 MWANGWEGO LETTER YA
ɓ	U+16E19 MWANGWEGO LETTER ZA
ɓ	U+16E1A MWANGWEGO LETTER DZA
ɓ	U+16E1B MWANGWEGO LETTER DHLA
ɓ	U+16E1C MWANGWEGO LETTER HLA
ɓ	U+16E1D MWANGWEGO LETTER XA
ɓ	U+16E1E MWANGWEGO LETTER QA
ɓ	U+16E1F MWANGWEGO LETTER THA
◌̣	U+16E20 MWANGWEGO VOWEL SIGN EMWA
◌̤	U+16E21 MWANGWEGO VOWEL SIGN IMA
◌̥	U+16E22 MWANGWEGO VOWEL SIGN OTA
◌̦	U+16E23 MWANGWEGO VOWEL SIGN UYU
‘	U+16E24 MWANGWEGO MODIFIER MYU
“	U+16E25 MWANGWEGO MODIFIER MI
”	U+16E26 MWANGWEGO MODIFIER NI
..	U+16E27 MWANGWEGO MODIFIER HI
-	U+16E28 MWANGWEGO MODIFIER WAYA
◌̣	U+16E29 MWANGWEGO MODIFIER WAYA BELOW
’	U+16E2A MWANGWEGO MODIFIER SISA
◌̣	U+16E2B MWANGWEGO MODIFIER MURA
◌̣	U+16E2C MWANGWEGO MODIFIER MULA
◌̣	U+16E2D MWANGWEGO MODIFIER PEWA
’	U+16E2E MWANGWEGO MODIFIER TUMBU
◌̣	U+16E2F MWANGWEGO MODIFIER KWANTHU
ɨ	U+16E30 MWANGWEGO MODIFIER MYU-NI

ⱱ	U+16E31 MWANGWEGO MODIFIER MYU-HI
Ⱳ	U+16E32 MWANGWEGO MODIFIER MYU-WAYA
ⱳ	U+16E33 MWANGWEGO MODIFIER MI-HI
ⱴ	U+16E34 MWANGWEGO MODIFIER MI-WAYA
Ⱶ	U+16E35 MWANGWEGO MODIFIER NI-HI
ⱶ	U+16E36 MWANGWEGO MODIFIER NI-WAYA
ⱷ	U+16E37 MWANGWEGO MODIFIER HI-WAYA
ⱸ	U+16E38 MWANGWEGO MODIFIER SISA-NI
ⱹ	U+16E39 MWANGWEGO MODIFIER TUMBU-WAYA
ⱺ	U+16E3A MWANGWEGO MODIFIER MYU-NI-HI
ⱻ	U+16E3B MWANGWEGO MODIFIER MYU-HI-WAYA
ⱼ	U+16E3C MWANGWEGO MODIFIER MI-HI-WAYA
ⱽ	U+16E3D MWANGWEGO MODIFIER NI-HI-WAYA
Ȿ	U+16E3E MWANGWEGO MODIFIER SISA-NI-HI
Ɀ	U+16E3F MWANGWEGO MODIFIER MYU-NI-HI-WAYA

Table 3. Character Names of the Mwangwego Orthography

The Mwangwego script is used for the languages of Malawi, which include Chewa (nya), Lomwe (ngl), Sena (swk in Malawi, seh in Mozambican, bwg for the divergent Barwe dialect), Tonga (tog), Tumbuka (tum), Yao (yao), Nyakyusa (nyy).

	16E0	16E1	16E2	16E3
0	16E00	16E10	16E20	16E30
1	16E01	16E11	16E21	16E31
2	16E02	16E12	16E22	16E32
3	16E03	16E13	16E23	16E33
4	16E04	16E14	16E24	16E34
5	16E05	16E15	16E25	16E35
6	16E06	16E16	16E26	16E36
7	16E07	16E17	16E27	16E37
8	16E08	16E18	16E28	16E38
9	16E09	16E19	16E29	16E39
A	16E0A	16E1A	16E2A	16E3A
B	16E0B	16E1B	16E2B	16E3B
C	16E0C	16E1C	16E2C	16E3C
D	16E0D	16E1D	16E2D	16E3D
E	16E0E	16E1E	16E2E	16E3E
F	16E0F	16E1F	16E2F	16E3F

**Letters (Musisi)**

16E00		MWANGWEGO LETTER A
16E01		MWANGWEGO LETTER BA
16E02		MWANGWEGO LETTER CHA
16E03		MWANGWEGO LETTER DA
16E04		MWANGWEGO LETTER FA
16E05		MWANGWEGO LETTER GA
16E06		MWANGWEGO LETTER GHA
16E07		MWANGWEGO LETTER HA
16E08		MWANGWEGO LETTER JA
16E09		MWANGWEGO LETTER ZHA
16E0A		MWANGWEGO LETTER KA
16E0B		MWANGWEGO LETTER LA
16E0C		MWANGWEGO LETTER MA
16E0D		MWANGWEGO LETTER NA
16E0E		MWANGWEGO LETTER NYA
16E0F		MWANGWEGO LETTER PA
16E10		MWANGWEGO LETTER RA
16E11		MWANGWEGO LETTER SA
16E12		MWANGWEGO LETTER SHA
16E13		MWANGWEGO LETTER TA
16E14		MWANGWEGO LETTER TSA
16E15		MWANGWEGO LETTER PSA
16E16		MWANGWEGO LETTER VA
16E17		MWANGWEGO LETTER WA
16E18		MWANGWEGO LETTER YA
16E19		MWANGWEGO LETTER ZA
16E1A		MWANGWEGO LETTER DZA
16E1B		MWANGWEGO LETTER DHLA
16E1C		MWANGWEGO LETTER HLA
16E1D		MWANGWEGO LETTER XA
16E1E		MWANGWEGO LETTER QA
16E1F		MWANGWEGO LETTER THA

**Vowel Signs (Siri)**

16E20		MWANGWEGO VOWEL SIGN EMWA
16E21		MWANGWEGO VOWEL SIGN ITA
16E22		MWANGWEGO VOWEL SIGN OTA
16E23		MWANGWEGO VOWEL SIGN UYU

**Modifiers (Mutuyo)**

16E24		MWANGWEGO MODIFIER MYU
16E25		MWANGWEGO MODIFIER MI
16E26		MWANGWEGO MODIFIER NI
16E27		MWANGWEGO MODIFIER HI
16E28		MWANGWEGO MODIFIER WAYA
16E29		MWANGWEGO MODIFIER WAYA BELOW
16E2A		MWANGWEGO MODIFIER SISA
16E2B		MWANGWEGO MODIFIER MURA
16E2C		MWANGWEGO MODIFIER MULA
16E2D		MWANGWEGO MODIFIER PEWA
16E2E		MWANGWEGO MODIFIER TUMBU
16E2F		MWANGWEGO MODIFIER KWANTHU

**Compound Modifiers (Mituyo)**

16E30		MWANGWEGO MODIFIER MYU-NI
16E31		MWANGWEGO MODIFIER MYU-HI
16E32		MWANGWEGO MODIFIER MYU-WAYA
16E33		MWANGWEGO MODIFIER MI-HI
16E34		MWANGWEGO MODIFIER MI-WAYA
16E35		MWANGWEGO MODIFIER NI-HI
16E36		MWANGWEGO MODIFIER NI-WAYA
16E37		MWANGWEGO MODIFIER HI-WAYA
16E38		MWANGWEGO MODIFIER SISA-NI
16E39		MWANGWEGO MODIFIER TUMBU-WAYA
16E3A		MWANGWEGO MODIFIER MYU-NI-HI
16E3B		MWANGWEGO MODIFIER MYU-HI-WAYA
16E3C		MWANGWEGO MODIFIER MI-HI-WAYA
16E3D		MWANGWEGO MODIFIER NI-HI-WAYA
16E3E		MWANGWEGO MODIFIER SISA-NI-HI
16E3F		MWANGWEGO MODIFIER MYU-NI-HI-WAYA

**Additional information on characters**

*Phonetic value*

The Mutuyo TUMBU ' is only used for Yao, and Nyakyusa/Ngonde. The Mutuyo PEWA ̂ is mostly used in Tumbuka, Kyangonde (a dialect of Nyakyusa; possibly other Nyakyusa dialects as well), and Yao.

*Joining information*

Masiri (e.g., Vowel modifiers; singular: Siri) are attached to base letters as described above, but letters themselves do not join at all like they do in Arabic.

For the MUSISI BA (U), and the Misiri counterparts (U, U, U, U), placement of the Mutuyo PEWA ̂ should be above the right-side vertical line (U U U U), instead of directly above the grapheme as it is for all other graphemes (e.g., A, A). See line 3 of Figure 10.1 in the Google Drive in Section IX.

**Note for typographers/font designers:** the placement of the Mutuyo/Mituyo in relation to the graphemes (Misisi/Misiri) should be done the same as in Figures 3.1-3.22 and 10.1-10.9 in the Google Drive. These images should be the reference when making basic letterforms and relative position of most Mutuyo/Mituyo to the graphemes. The following are exceptions to this based on input by the user community:

- When Mutuyo/Mituyo that appear on the left of MUSISI PA ɗ, MUSISI TA ʃ, MUSISI TSA ʃ, and MUSISI DHLA ɗ, and their Misiri counterparts ( ), should make use of the empty space available for these graphemes. They should “fill up”/utilize the empty space. Again, this logic extends to the Misiri counterparts for these 4 graphemes.
  - See Figure 10.5 in the Google Drive for MUSISI PA ɗ. Same for Misiri ɗ, ɗ, ɗ, ɗ.
  - See Figures 10.6-10.7 in the Google Drive for MUSISI TA ʃ. Same for Misiri ʃ, ʃ, ʃ, ʃ.
  - See Figure 10.7 in the Google Drive for MUSISI TSA ʃ. Same for Misiri ʃ, ʃ, ʃ, ʃ.
  - See Figure 10.8 in the Google Drive for MUSISI DHLA ɗ. Same for Misiri ɗ, ɗ, ɗ, ɗ.
- The stacked Mituyo combinations on the left of graphemes should be perfectly symmetrical as requested by the user community:
  - Symmetrical examples: ʃ ʃ ʃ ʃ ʃ ʃ ʃ ʃ ʃ ʃ ʃ ʃ
  - The font used in Figures 10.1-10.9 in the Google Drive doesn't have some aspects of a Mituyo stack centered, such as Mutuyo MYU ʃ. The examples above should be the reference for this aspect of the script/future fonts.

*Visual vs Logical Order*

It is worth noting for implementers that the visual order of the Mwangwego glyphs differs from the logical order used to persist text. In the visual order, the elements appear in the left-to-right reading order, while the logical order follows the pedagogical sequencing where the Mituyo are terminal. Table 4 presents two examples:

	Visual Order (mituyo+musisi+siri)	Logical Order (musisi+siri+mituyo)
ʃ	ʃ + ʃ + ʃ	ʃ + ʃ + ʃ
ʃ	ʃ + ʃ + ʃ + ʃ	ʃ + ʃ + ʃ + ʃ

Table 4. Comparison of the visual and logical orders of Mwanwego letter elements.

### Punctuation

There are no script-specific punctuation marks. Latin punctuation is used.

### Numbers

There are no script-specific numerals/digits. Hindu-Arabic numerals/digits (0123456789) are used.

### Mutuyo glyph uniqueness:

Many Mutuyo glyphs are visually similar to existing diacritical marks presently in the Unicode inventory. The authors have considered utilization of the graphically similar marks with the Mwangwego letters and determined that doing so is not in the best interests of the user community. While the marks are graphically similar, the abstract characters that the graphs are referents for are distinctly different; which in turn would lead to cognition difficulties in their Mwangwego utilization. A discussion and comparison of the diacritic and Mutuyo marks is given in the following.

The Chichewa and other languages of Malawi use a Latin-based orthography that includes “*w*” to denote the voiced bilabial fricative /β/. Accordingly, the user community is already familiar with the shape of the mark and its phonetical augmentation to /w/. Circumflex applied to letters of the Mwangwego script would *not* signal the *same* phonetic change. Not only might this inconsistency in the use of the symbol be confusing to users, but visually the Latin circumflex is not optimal for publishing in Mwangwego script. The visual difference between the symbols is depicted in the following tables:

<b>Reference Typeface</b>	Ŵ ŵ	ŵ ŵ
<b>Sans Serif Typeface</b>	Ŵ ŵ	ŵ ŵ

Table 5. Comparison of Chichewa Latin Circumflex on Ŵ to Mutuyo Pewa.

<b>Reference Typeface</b>	Ū Â	Ū Â
<b>Sans Serif Typeface</b>	Ū Â	Ū Â

Table 6. Comparison of Circumflex to Mutuyo Pewa applied to similarly shaped base letters.

Visible differences between the shapes of Circumflex and Pewa in the above examples include: stroke weight, stroke taper, inner angle, top angle, and mark positioning.

It can be expected that materials, particularly educational, will be produced that render Malawi languages in both orthographies. For these readers we believe that not conflating Circumflex and Pewa, for example, would better facilitate reading comprehension and the visual quality of publications. Maintaining the visual distinction between the symbols is also advantageous in any plain text context.

Unlike the practice with Latin diacritic, the combining Mutuyo do not change the phonetic value of a consonant letter (e.g. n + ̃ → ñ, phonetically /n/ → /ɲ/). Rather, they either append or prefix a phoneme to the consonant (note that with a single exception, the *non*-combining Mutuyo will prefix a phoneme).

For example:

- Ƀ (da) vs Ƀ (dya)
- ʉ (ba) vs ʉ (bra)
- ɔ̣ (ka) vs ɔ̣ (kla)
- ɹ (za) vs ɹ (bza)
- ɕ (di) vs ɕ (ndi)

A noteworthy distinction between the application of the combining Mutuyo, that is unprecedented for the diacritical marks, appears in the last example above. The Mutuyo mark is the third glyph in the composition sequence. In keeping with the handwritten practices, the Mutuyo is written *after* the Masiri vowel mark while it visually appears above the consonant glyph -no different than when a Masiri is not present. Thus, the combining Mutuyo may be either the 2<sup>nd</sup> or 3<sup>rd</sup> codepoint in composed character (e.g. <C><M> or <C><V><M>). This is believed to be a different combining behavior than that exhibited by comparable diacritical marks which will always be the 2<sup>nd</sup> codepoint in a composition sequence (unless combining with another combinable mark).

This last point helps highlight that Latin based combining marks may be inherently unsuitable for Mwangwego script which, being an Abugida script, is not sufficiently *Latin-like*. Review of the Unicode Character Database's "NormalizationTest.txt" finds the comparable marks applied only to the more closely related scripts Latin, Greek, and Cyrillic. Applying the marks outside of this family may also be problematic for existing text processors that make the assumption that the marks are erroneously applied when found elsewhere.

A degree of internal similarity to the Mutuyo mark is readily observed. For example: ˘ (MYU) with ˘ (MI), ˘ (TUMBU) with ˘ (NI), and ˘ (MULA) with ˘ (MURA). Discussion with the user community and educators we find that users embody a phonological understanding of the glyphs and do not apply the visual similarity in any practical way. For example, MI (˘) is not perceived as a "Double MYU" (˘) which is not logical phonetically. Education of the marks also does not follow what would logically be the "stroke order" of the glyphs (˘ NI precedes ˘ TUMBU, ˘ MURA precedes ˘ MULA). Thus, we have proposed encoding the marks distinctly in keeping with the user community's perception and practices. Doing so also avoids entirely the inevitable problem of text editing where during a "copy & paste" operation, one mark is selected and pasted but not the other, or a deletion is incomplete, or a second keystroke missed in their composition.



## V Properties

### General Category and other properties

The Mwangwego inventory in this proposal includes the Misi syllable bases as type Letter Other, their combining Masiri and Mutuyo diacritic marks.

16E00;MWANGWEGO	LETTER	A;Lo;0;L; ; ; ; ;N; ; ; ; ;
16E01;MWANGWEGO	LETTER	BA;Lo;0;L; ; ; ; ;N; ; ; ; ;
16E02;MWANGWEGO	LETTER	CHA;Lo;0;L; ; ; ; ;N; ; ; ; ;
16E03;MWANGWEGO	LETTER	DA;Lo;0;L; ; ; ; ;N; ; ; ; ;
16E04;MWANGWEGO	LETTER	FA;Lo;0;L; ; ; ; ;N; ; ; ; ;
16E05;MWANGWEGO	LETTER	GA;Lo;0;L; ; ; ; ;N; ; ; ; ;
16E06;MWANGWEGO	LETTER	GHA;Lo;0;L; ; ; ; ;N; ; ; ; ;
16E07;MWANGWEGO	LETTER	HA;Lo;0;L; ; ; ; ;N; ; ; ; ;
16E08;MWANGWEGO	LETTER	JA;Lo;0;L; ; ; ; ;N; ; ; ; ;
16E09;MWANGWEGO	LETTER	ZHA;Lo;0;L; ; ; ; ;N; ; ; ; ;
16E0A;MWANGWEGO	LETTER	KA;Lo;0;L; ; ; ; ;N; ; ; ; ;
16E0B;MWANGWEGO	LETTER	LA;Lo;0;L; ; ; ; ;N; ; ; ; ;
16E0C;MWANGWEGO	LETTER	MA;Lo;0;L; ; ; ; ;N; ; ; ; ;
16E0D;MWANGWEGO	LETTER	NA;Lo;0;L; ; ; ; ;N; ; ; ; ;
16E0E;MWANGWEGO	LETTER	NYA;Lo;0;L; ; ; ; ;N; ; ; ; ;
16E0F;MWANGWEGO	LETTER	PA;Lo;0;L; ; ; ; ;N; ; ; ; ;
16E10;MWANGWEGO	LETTER	RA;Lo;0;L; ; ; ; ;N; ; ; ; ;
16E11;MWANGWEGO	LETTER	SA;Lo;0;L; ; ; ; ;N; ; ; ; ;
16E12;MWANGWEGO	LETTER	SHA;Lo;0;L; ; ; ; ;N; ; ; ; ;
16E13;MWANGWEGO	LETTER	TA;Lo;0;L; ; ; ; ;N; ; ; ; ;
16E14;MWANGWEGO	LETTER	TSA;Lo;0;L; ; ; ; ;N; ; ; ; ;
16E15;MWANGWEGO	LETTER	PSA;Lo;0;L; ; ; ; ;N; ; ; ; ;
16E16;MWANGWEGO	LETTER	VA;Lo;0;L; ; ; ; ;N; ; ; ; ;
16E17;MWANGWEGO	LETTER	WA;Lo;0;L; ; ; ; ;N; ; ; ; ;
16E18;MWANGWEGO	LETTER	YA;Lo;0;L; ; ; ; ;N; ; ; ; ;
16E19;MWANGWEGO	LETTER	ZA;Lo;0;L; ; ; ; ;N; ; ; ; ;
16E1A;MWANGWEGO	LETTER	DZA;Lo;0;L; ; ; ; ;N; ; ; ; ;
16E1B;MWANGWEGO	LETTER	DHLA;Lo;0;L; ; ; ; ;N; ; ; ; ;
16E1C;MWANGWEGO	LETTER	HLA;Lo;0;L; ; ; ; ;N; ; ; ; ;
16E1D;MWANGWEGO	LETTER	XA;Lo;0;L; ; ; ; ;N; ; ; ; ;
16E1E;MWANGWEGO	LETTER	QA;Lo;0;L; ; ; ; ;N; ; ; ; ;
16E1F;MWANGWEGO	LETTER	THA;Lo;0;L; ; ; ; ;N; ; ; ; ;
16E20;MWANGWEGO	VOWEL SIGN	EMWA;Mc;204;L; ; ; ; ;N; ; ; ; ;
16E21;MWANGWEGO	VOWEL SIGN	IMA;Mc;204;L; ; ; ; ;N; ; ; ; ;
16E22;MWANGWEGO	VOWEL SIGN	OTA;Mc;204;L; ; ; ; ;N; ; ; ; ;
16E23;MWANGWEGO	VOWEL SIGN	UYU;Mc;204;L; ; ; ; ;N; ; ; ; ;
16E24;MWANGWEGO	MODIFIER	MYU;Lm;0;L; ; ; ; ;N; ; ; ; ;
16E25;MWANGWEGO	MODIFIER	MI;Lm;0;L; ; ; ; ;N; ; ; ; ;
16E26;MWANGWEGO	MODIFIER	NI;Lm;0;L; ; ; ; ;N; ; ; ; ;
16E27;MWANGWEGO	MODIFIER	HI;Lm;0;L; ; ; ; ;N; ; ; ; ;
16E28;MWANGWEGO	MODIFIER	WAYA;Lm;0;L; ; ; ; ;N; ; ; ; ;
16E29;MWANGWEGO	MODIFIER	WAYA BELOW;Mn;220;NSM; ; ; ; ;N; ; ; ; ;
16E2A;MWANGWEGO	MODIFIER	SISA;Lm;0;L; ; ; ; ;N; ; ; ; ;
16E2B;MWANGWEGO	MODIFIER	MURA;Mn;230;NSM; ; ; ; ;N; ; ; ; ;
16E2C;MWANGWEGO	MODIFIER	MULA;Mn;230;NSM; ; ; ; ;N; ; ; ; ;
16E2D;MWANGWEGO	MODIFIER	PEWA;Mn;230;NSM; ; ; ; ;N; ; ; ; ;
16E2E;MWANGWEGO	MODIFIER	TUMBU;Lm;0;L; ; ; ; ;N; ; ; ; ;

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16E2F;MWANGWEGO MODIFIER KWANTHU;Mn;230;NSM;;;N;;;
16E30;MWANGWEGO MODIFIER MYU-NI;Lm;0;L;;;N;;;
16E31;MWANGWEGO MODIFIER MYU-HI;Lm;0;L;;;N;;;
16E32;MWANGWEGO MODIFIER MYU-WAYA;Lm;0;L;;;N;;;
16E33;MWANGWEGO MODIFIER MI-HI;Lm;0;L;;;N;;;
16E34;MWANGWEGO MODIFIER MI-WAYA;Lm;0;L;;;N;;;
16E35;MWANGWEGO MODIFIER NI-HI;Lm;0;L;;;N;;;
16E36;MWANGWEGO MODIFIER NI-WAYA;Lm;0;L;;;N;;;
16E37;MWANGWEGO MODIFIER HI-WAYA;Lm;0;L;;;N;;;
16E38;MWANGWEGO MODIFIER SISA-NI;Lm;0;L;;;N;;;
16E39;MWANGWEGO MODIFIER TUMBU-WAYA;Lm;0;L;;;N;;;
16E3A;MWANGWEGO MODIFIER MYU-NI-HI;Lm;0;L;;;N;;;
16E3B;MWANGWEGO MODIFIER MYU-HI-WAYA;Lm;0;L;;;N;;;
16E3C;MWANGWEGO MODIFIER MI-HI-WAYA;Lm;0;L;;;N;;;
16E3D;MWANGWEGO MODIFIER NI-HI-WAYA;Lm;0;L;;;N;;;
16E3E;MWANGWEGO MODIFIER SISA-NI-HI;Lm;0;L;;;N;;;
16E3F;MWANGWEGO MODIFIER MYU-NI-HI-WAYA;Lm;0;L;;;N;;;

```

## Line breaking information

Line Breaking rules for the Mwangwego script are as follows:

- Words are separated with U+0020 SPACE. There are no other word separators in historical documents.
- Line breaks only occur at word boundaries.
- There is not a special mode found that allows line breaks within words at select positions, such as using a hyphen sign (U+002D HYPHEN-MINUS) that other scripts apply.
- Line breaks cannot occur within numbers. Numbers must always be kept together.
- There are no restrictions explicitly stated on line breaking before or after certain punctuation characters.

The Mwangwego script is likely to occur with the Latin script.

## VI Collation

### Misisi/Musiri

The sorting order of the basic syllabic graphemes of the script follows the ordering used in education and is shown in Table 1, starting with Ɔ, Ɔ, Ɔ, Ɔ, Ɔ, then Ɔ, Ɔ, Ɔ, Ɔ, Ɔ, ..., all the way to Ɔ, Ɔ, Ɔ, Ɔ.

However, attaching Mutuyo/Mituyo to Misisi/Musiri significantly influences the ordering of said Misisi/Musiri; see directly below.

### Mutuyo

When Mutuyo (i.e., a single modifying mark as defined in Section III) are attached to Misisi/Musiri the collation adheres to the following order:



## 2-part Mituyo

Below are all 19 linguistically possible 2-part Mituyo combinations. This is also their order (from left to right):

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
ᵀ	ᵀ	ᵀ	ᵀ	ᵀ	ᵀ	ᵀ	ᵀ	ᵀ	ᵀ	ᵀ	ᵀ	ᵀ	ᵀ	ᵀ	ᵀ	ᵀ	ᵀ	ᵀ

Table 7. Order of all 2-part Mituyo.

For convenience, the order of individual Mutuyo is: MYU ' < MI " < NI " < HI - < WAYA - < WAYA BELOW ◯ < SISA ' < MURA ◊ < MULA ◊ < PEWA ◊ < TUMBU ' < KWANTHU ◊.

Therefore, we can see in Table 7 that all 2-part Mituyo that contain a MYU ' are ordered first before 2-part Mituyo that "start with" a MI ", etc.

Furthermore, as we can see in Table 7, the 2-part Mituyo combinations that are labeled as 1, 2, and 3 are all "stacks" that would appear on the left side of a grapheme. Stacks 1, 2, and 3 all have a MYU ' at the top of their stacks. The ordering of these 3 stacks is determined by parsing the stacks' Mutuyo components from top to bottom. They each start with MYU ', which can be ignored. The second Mutuyo in stacks 1, 2, and 3 are NI ", HI -, and WAYA -, respectively. As NI " comes before HI - and WAYA - in the Mutuyo ordering, ᵀ is ordered before ᵀ and ᵀ. Then, as HI - comes before WAYA - in the Mutuyo ordering, ᵀ is ordered before ᵀ.

Another example are the 2-part Mituyo combinations labeled under 14, 15, and 16 in Table 7 ( "◊, -◊, and ◊). They have top-left, top-left, and top-bottom configurations around a grapheme, respectively. They each begin with a PEWA ◊. Their order is also determined by looking at the second Mutuyo in the Mityuo combination. Combination 14 has a NI ", 15 has a WAYA -, and 16 has a WAYA BELOW ◯ as their second Mutuyo (according to the order of reading their respective configurations). As NI " comes before WAYA - in the Mutuyo ordering, and WAYA - comes before WAYA BELOW ◯, their order as "◊ < -◊ < ◊.

## 3-part Mituyo

Below are the 7 linguistically possible 3-part Mituyo combinations. This is also their order (from left to right):

1	2	3	4	5	6	7
ᵀ	ᵀ	ᵀ	ᵀ	ᵀ	ᵀ	ᵀ

Table 8. Order of all 3-part Mituyo

The exact same logic applies to 3-part Mituyo.

### 4-part Mituyo

There is only one linguistically possible 4-part Mituyo combination. It is ordered after 3-part Mituyo combinations.

<b>1</b>

Table 9. The sole 4-part Mituyo combination.

The exact same logic applies to 4-part Mituyo.

### Complete collation example

1. A basic grapheme (Misisi) is ordered first.
  - a. Example: ᳵ /ka/
2. Then all valid Mutuyo for that basic grapheme are ordered.
  - a. Example: ᳶ ᳷ ᳸ ᳹ ᳺ ᳻ ᳼
3. Then all valid 2-part Mituyo for that basic grapheme are ordered.
  - a. Example: ᳽ ᳾ ᳿ ᳼ ᳽ ᳾ ᳿ ᳼ ᳽ ᳾ ᳿ ᳼ ᳽ ᳾ ᳿ ᳼
4. Then all valid 3-part Mituyo for that basic grapheme are ordered.
  - a. Example: ᳾ ᳿ ᳼ ᳽ ᳾ ᳿ ᳼ ᳽ ᳾ ᳿ ᳼ ᳽ ᳾ ᳿ ᳼ ᳽ ᳾ ᳿ ᳼
5. Then all valid 4-part Mituyo for that basic grapheme are ordered.
  - a. Example: ᳾ ᳿ ᳼ ᳽ ᳾ ᳿ ᳼ ᳽ ᳾ ᳿ ᳼ ᳽ ᳾ ᳿ ᳼ ᳽ ᳾ ᳿ ᳼
6. Then the next vocalization for that basic grapheme is ordered.
  - a. Example: ᳿ /ke/
7. Then the ordering continues for all the same Mutuyo, and 2/3/4-part Mituyo for that new vocalized grapheme.
8. Then the next basic grapheme (Misisi) continues the entire cycle.

Section X shows every possible Mutuyo/Mituyo combination attached to the Misisi (i.e., all inherent /a/ syllabic graphemes).

## VII References

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## VIII Acknowledgements

We would like to humbly thank Nolence Mwangwego and the Mwangwego script user community that have immensely helped us understand the nuances of this script.

An endorsement letter for the encoding of the Mwangwego script written by a University of Malawi linguist is attached/included on the next page.

This project was made possible in part by a grant from the Mellon Foundation to the Script Encoding Initiative at the University of California, Berkeley.

### Endorsement/Recommendation for the Mwangwego script

I, the undersigned, would like to recommend the Mangwego script to be included into the Unicode and eventually be displayed on all digital devices.

When the Mwangwego script was launched in the late 90s, I happened to be one of its first learners.

The script is so easy to learn and to use and I wholeheartedly endorse its inclusion in the Unicode.

M.Chimasula

Mazunzo Prince Chimasula

Lecturer of French at University of Malawi  
princechimasula@gmail.com

The views expressed herein do not represent my employer. They are expressed in personal capacity as a student of the script.





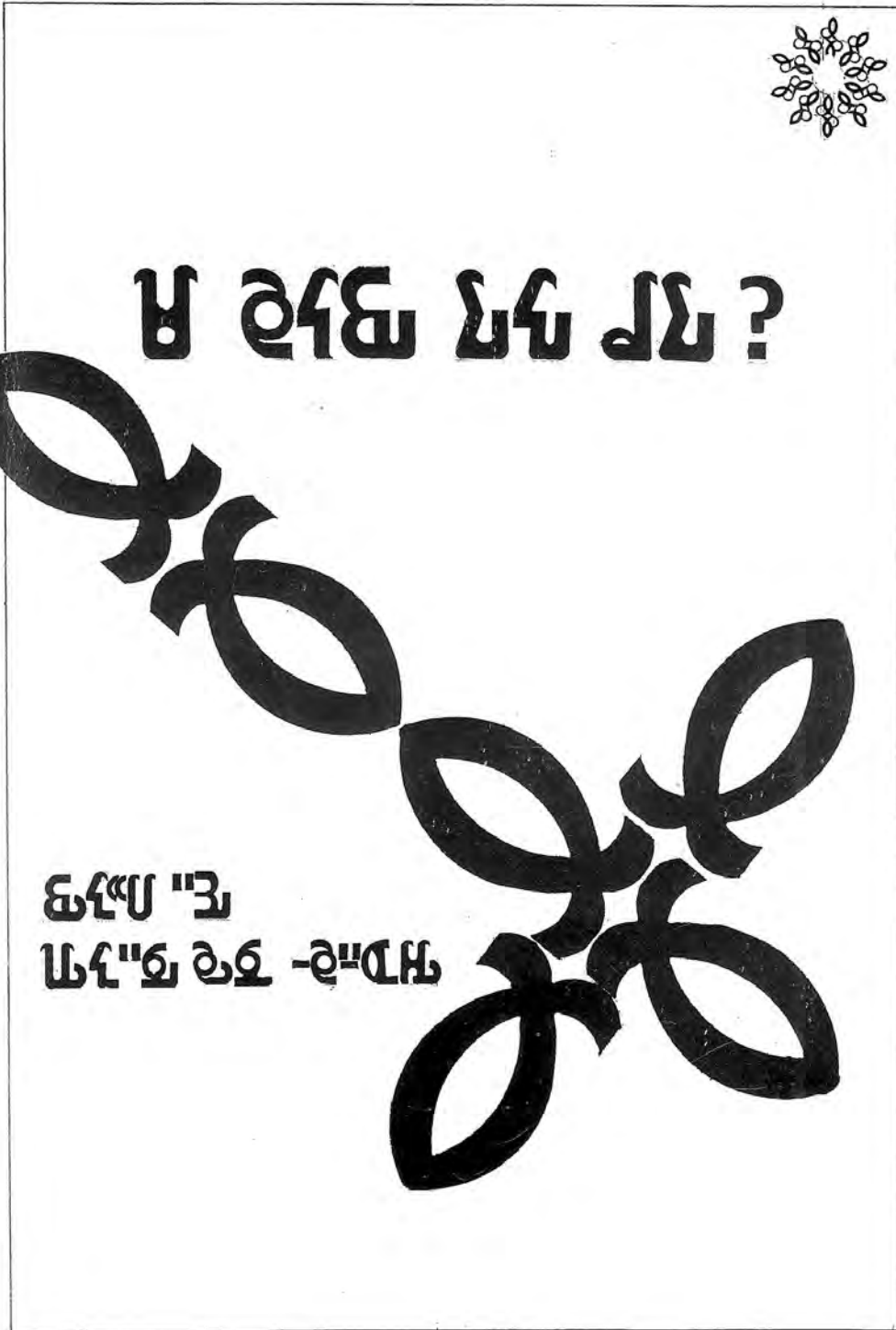


Figure 2.1. Cover page of the Chichewa language book “ᖃ ᑉᑎᑎᑎ ᑎᑎ ᑉᑎᑎ ?” (transliteration: “A Malawi Tili Pati”; translation: “Malawians, where are we?”). Mwangwego, Nolence. 2011. ᖃ ᑉᑎᑎᑎ ᑎᑎ ᑉᑎᑎ ? ᑎᑎᑎᑎ ᑉᑎᑎ ᑎᑎᑎᑎ ᑉᑎᑎᑎ ᑎᑎᑎᑎ (A Malawi tili pati? Wolemba ndi Nolensi Mose Mwangwegho). Blantyre: [self-published; printed by Blantyre Print and Packaging].

ፊደላዊነት

-ቶ ዘላ ገጠ "ፍ ጭጭ" ስራ ለፍ-3  
ቶሪ ለገጠ, ፍጥነት ዘላ "ፍ ጭጭ" ስራ ለፍ-3  
-ቶ ጭጭ ፊደላዊነት ጭጭ ስራ ለፍ-3.

"ጭጭ-ጭጭ ስራ -ቶ ስራ ስራ, ጭጭ  
ስራ "ፍ ጭጭ" ስራ -ቶ ስራ -ቶ ስራ ስራ  
ፍጥ ስራ.

"ጭጭ-ጭጭ ስራ -ቶ ስራ ስራ  
ፍጥ ስራ "ፍ ጭጭ" ስራ ስራ ስራ  
ስራ ፍጥ. "ጭጭ-ጭጭ" ስራ ስራ ስራ  
ስራ ፍጥ ስራ ስራ ስራ ስራ.  
ፍጥ ስራ -ቶ ስራ.

"ፍ ጭጭ ስራ ስራ

Figure 2.2. "ፍ ጭጭ ስራ ስራ" page iii.


	<b>ገ ገገገ</b>	
<b>"ጌገ</b>		
1	<b>ገገ ገገገ</b>	1
2	<b>ገገገ ገገገ</b>	10
3	<b>"ገገገ" ገገገገ</b>	18
4	<b>ገገገ ገገገ</b>	21
5	<b>ገገገገ</b>	23
6	<b>ገገገገገ</b>	25
7	<b>ገገገ ገገገ</b>	34
8	<b>ገገገገገ</b>	35
9	<b>ገገገ ገገገ</b>	37
10	<b>ገገገገገ-ገገ</b>	39
11	<b>ገገገገ</b>	40
12	<b>ገገገገገ</b>	54
13	<b>ገገገገ ገገገገገ-ገገገ</b>	55
14	<b>ገገገገ ገገገ</b>	59
15	<b>ገገገገ ገገገገ</b>	61
16	<b>ገገገገ ገገገ</b>	63
17	<b>ገገገገ ገገገገ</b>	66

Figure 2.3. Table of contents of "ገ ገገገ ገገገገ", page iv.







NOTE

X"U r R"2  
 2020 X"U r R"2 E"U G Y"U r R"2  
 182E 182 632"U "328 2020. d 23  
 482 2020 X"U r R"2. 62"3 2020 2020.  
 2020 2020 2020, "3 2020 2020 2020  
 2020, 2020"U 2020. 2020 2020 2020 2020  
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2020 2020, 2020"U 2020 "3 2020 2020 "3 2020  
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 2020, "3 2020 2020.

2020 2020, 2020-2020 2020 2020 2020 02 July  
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 2020 2020"U "3 2020 2020"U 2020 2020 2020  
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2020 2020, 2020 2020 2020 2020 2020 2020  
 2020

2020 2020"U 2020 2020

2020 2020"U 2020 "3 -2020 2020 2020 2020"U  
 2020. 2020 2020 2020"U 2020. 2020 2020, 2020  
 2020 2020 2020 2020.

Figure 5. Page from a very long diary that was mailed from the author (in Malawi) to other user(s) (in South Africa) for interpersonal communication/text interchange. A 40-page excerpt of the longer text is in the Google Drive.

ଅଧିକ "3" "3" "3" ୧୨ ୪ ୧୧"୫-୧୨  
୧ ୧୨୫ ୪ ୧୨୫ ୫୬ ୧୧"୫-୧୨

୧"୩ ଠି ୫୩୩

୧୩ ୩୫ ୩୫୫ ୧୧"୫-୧୨  
୧୨ ୧ ୧୨ ୪ ୫୬ ୧୨୫  
୧୨୫ ୧୨ ୫ ୧୨ ୧୨୫ ୧୨  
୧୨ ୧ ୧୨, "୩୫୬ ୧୨୫ ୧୨"  
୧୨. ୧୨-୧ ୩୫ ୩୫୫ ୧୨୫  
୧"୫ ୩-୧୨ ୩୫ ୧ ୧୨. "୩୫୬  
୧୨୫ ୧"୫ ୧୨୫ ୧୨. -୧୨  
୧୨-୧ ୧୨-୧୨"୫ ୧୨୫ ୧ ୧୨  
୪ ୧"୫୫୫ ୧୨ ୧୨

୧୨୫୫ ୧୨ ୩୫୫ ୧୨୫"୫  
୧"୫ ୧୨୫ ୧ ୩"୫ ୫ ୧୨ ୪  
୧"୫୫୫୫ ୧୨ "୫୫"୫ ୧୨୫୫

Figure 6 Handwritten journal entry from a user in Mzuzu.





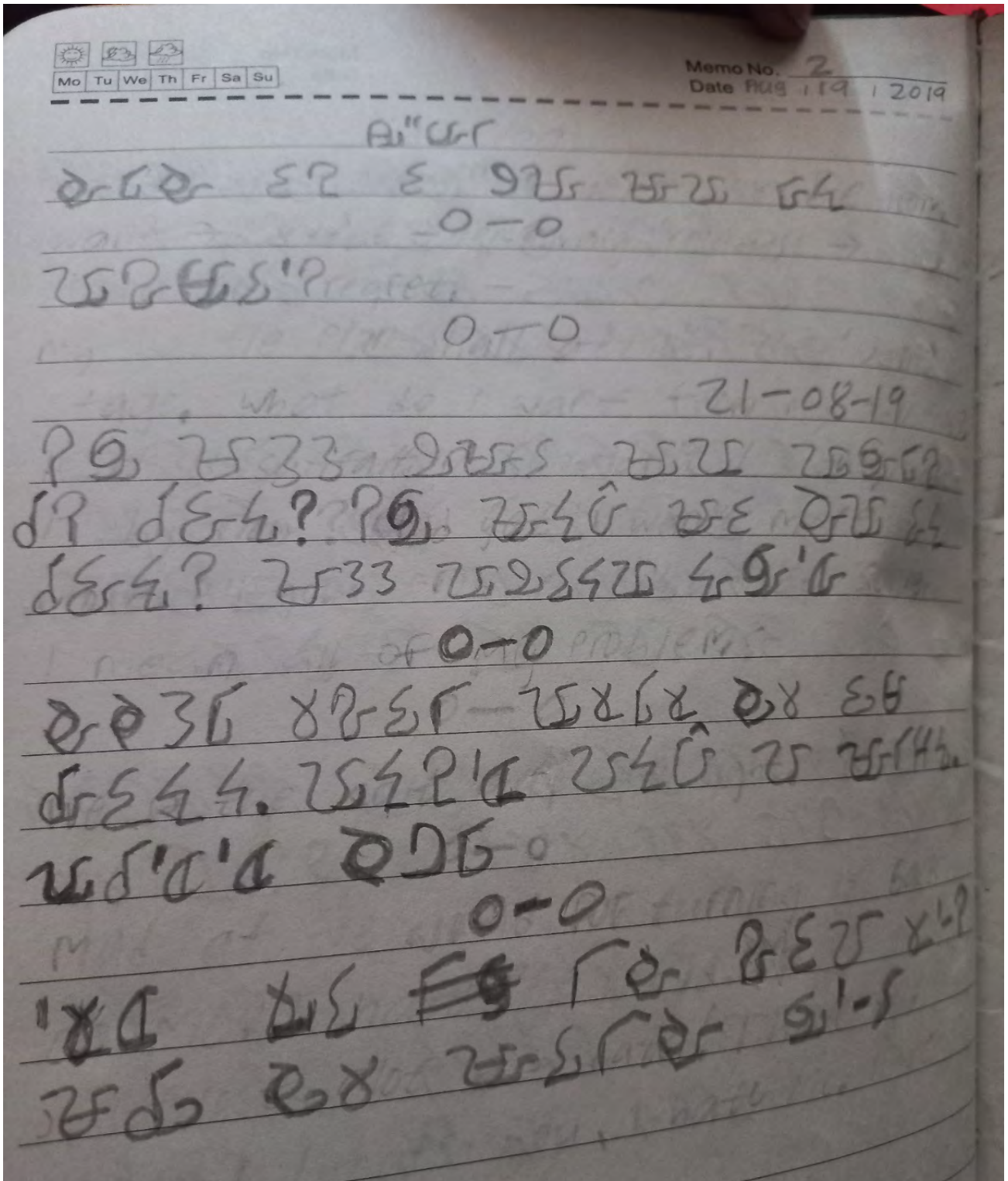


Figure 8. August 19, 2019 Tumbuka-language journal entry from a Malawian user in Mzuzu.

Please note, the last word on this image, ɔɔɔ, has the Mituyo stack deconstructed, with the Tumbu Mutuyo incorrectly written on the left of the Waya Mutuyo, instead of properly placing it on top of the latter. This is an error the student made, which is part of the learning curve. There are several instances of the user *correctly* constructing this same Mituyo in these journal entries in Figure 4.6 (twice in paragraph 3; again in paragraph 4).



Os CAMPONESES  
 15 PERU - 208  
 06 Egg d LOSTER - 2020  
 6 27"3 7 36 321"3 - 293  
 06 11"3 E d Campo - 2010 PA  
 0 Wages Date !! 2021 - 2020

Figure 10. List in Chichewa.

08 DE OUTUBRO 2023  
 NANFEI

1. 2023 10 08  
 2. 2023 10 08  
 3. 2023 10 08  
 4. 2023 10 08  
 5. 2023 10 08  
 6. 2023 10 08  
 7. 2023 10 08  
 8. 2023 10 08  
 9. 2023 10 08  
 10. 2023 10 08  
 11. 2023 10 08  
 12. 2023 10 08  
 13. 2023 10 08  
 14. 2023 10 08  
 15. 2023 10 08  
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 18. 2023 10 08  
 19. 2023 10 08  
 20. 2023 10 08  
 21. 2023 10 08  
 22. 2023 10 08  
 23. 2023 10 08  
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 25. 2023 10 08  
 26. 2023 10 08  
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 86. 2023 10 08  
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 88. 2023 10 08  
 89. 2023 10 08  
 90. 2023 10 08  
 91. 2023 10 08  
 92. 2023 10 08  
 93. 2023 10 08  
 94. 2023 10 08  
 95. 2023 10 08  
 96. 2023 10 08  
 97. 2023 10 08  
 98. 2023 10 08  
 99. 2023 10 08  
 100. 2023 10 08

Figure 11. 2023 Chichewa-language handwriting by a Malawian user. This image showcases some intralinear Portuguese words in the Latin script (important to typographers) as the user is a businessman that conducts international business in Portuguese. The topic is business.

Handwritten text in a non-Latin script, likely a journal entry.

The text is written on lined paper and is oriented vertically. It consists of two main sections of writing. The top section begins with a header that appears to be "Handwritten text" (though the characters are not clearly identifiable). The main body of the top section contains several lines of text, including what looks like a date "2015-12-27" and some numbers. The bottom section also contains several lines of text, including a date "2015-12-27" and some numbers. The handwriting is somewhat cursive and difficult to decipher.

Figure 12. A journal entry from a user in Blantyre.

MWANGWECO SCRIPT

LESSON 1

MISISI

ʌ	a	ɣ	nya
ʊ	ba	ɟ	pa
ɔ̃	cha	ʀ	ra
ɜ	da	ʂ	sa
ɔ̃	fa	ʂ	sha
ɛ	ga	ʃ	ta
ɦ	gha	ɟ	tʂa
ʃ	ha	h	psa
ʈ	ja	ʌ	va
ɓ	ja *	ɛ	wa
ʀ	ka	ɣ	ya
ɫ	la	ɹ	za
ɛ̃	ma	+	dza
ʌ	na		

\* ja pronounced like in measure, or treasure

Figure 13. Educational material for Misisi (lesson 1).

ʌ ʌ ʌ ʌ ʌ	a e l o u	Ṛ Ṛ Ṛ Ṛ Ṛ	ra re ri ro ru
u u u u u	ba be bi bo bu	Ṣ Ṣ Ṣ Ṣ Ṣ	sa se si so su
ʃ ʃ ʃ ʃ ʃ	cha che chi cho chu	Ṧ Ṧ Ṧ Ṧ Ṧ	sha she shi sho shu
ɔ ɔ ɔ ɔ ɔ	da de di do du	ʒ ʒ ʒ ʒ ʒ	ta te ti to tu
ɟ ɟ ɟ ɟ ɟ	fa fe fi fo fu	ɠ ɠ ɠ ɠ ɠ	tʃa tʃe tʃi tʃo tʃu
ɑ ɑ ɑ ɑ ɑ	ga ge gi go gu	h h h h h	psa pse psi pso psu
ɦ ɦ ɦ ɦ ɦ	gha ghe ghi gho ghu	A A A A A	va ve vi vo vu
ɸ ɸ ɸ ɸ ɸ	ha he hi ho hu	E E E E E	wa we wi wo wu
ɸ ɸ ɸ ɸ ɸ	ja je ji jo ju	ʎ ʎ ʎ ʎ ʎ	ya ye yi yo yu
ɸ ɸ ɸ ɸ ɸ	ja je ji jo ju *	ɹ ɹ ɹ ɹ ɹ	za ze zi zo zu
ɸ ɸ ɸ ɸ ɸ	ka ke ki ko ku	ɸ ɸ ɸ ɸ ɸ	dza dze dzi dzo dzu
ɸ ɸ ɸ ɸ ɸ	la le li lo lu		
ɸ ɸ ɸ ɸ ɸ	ma me mi mo mu		
ʌ ʌ ʌ ʌ ʌ	na ne ni no nu		
ɸ ɸ ɸ ɸ ɸ	nya nye nyi nyo nyu		
ɸ ɸ ɸ ɸ ɸ	pa pe pi po pu		

\* ja pronounced like in measure or treasure.

Figure 14. Educational material for Misiri (lesson 2).



LESSON 3

A) Mituyo and their uses

1

SYMBOL / NAME		USE			
-	WAYA	bwato -Uᵇ	mwala -ᵇᵇ		
		myala ᵇᵇ	kudya ᵇᵇ		
	Ni	Ndati "ᵇᵇ	<sup>ng'ona</sup> -ngona "ᵇᵇ		
		nsapato "ᵇᵇ	Nchalo "ᵇᵇ		
"	Hi	khasu ᵇᵇ	khama ᵇᵇ	phala ᵇᵇ	
		thobwa ᵇᵇ-U	tchimo ᵇᵇ		
cc	Mi	mbala "Uᵇ	mbiri "Uᵇ		
		mbatata "Uᵇ	mpaka "ᵇᵇ		
c	Myu	mkaka ᵇᵇ	mkanda ᵇᵇ	ᵇᵇ	
		m'dziko ᵇᵇ	-m'mudzi ᵇᵇ		
)	Sisa	sma ᵇᵇ	sketi ᵇᵇ		
		stima ᵇᵇ			
o	Mura	bra ᵇᵇ	kra ᵇᵇ	tra ᵇᵇ	
\	Mula	Blantyre ᵇᵇ	kla ᵇᵇ	tla ᵇᵇ	
^	Pewa	ba ᵇᵇ (Tumbuka)	wa ᵇᵇ (Chichewa)		
		bva ᵇᵇ	bza ᵇᵇ	pfa ᵇᵇ	*tba ᵇᵇ
	Tumbu	n'da 'ᵇ	n'nya 'ᵇ	n'ya 'ᵇ	n'wa 'ᵇ
'	Kwanthu	mtengo ᵇᵇ (tree) ;	mtengo ᵇᵇ (price)		

\*Pronounced like the English "th" in "thatch" (for Lomwe)

Figure 15. Educational material for Mituyo (lesson 3).



MWANGWEGO SCRIPT

Ɑ	Ɱ	Ɐ	Ɒ	ⱱ	Ⱳ	ⱳ	ⱴ	Ⱶ	ⱶ
ⱷ	ⱸ	ⱹ	ⱺ	ⱻ	ⱼ	ⱽ	Ȿ	Ɀ	Ⳁ
ⳁ	Ⳃ	ⳃ	Ⳅ	ⳅ	Ⳇ	ⳇ	Ⳉ	ⳉ	Ⳋ
ⳋ	Ⳍ	ⳍ	Ⳏ	ⳏ	Ⳑ	ⳑ	Ⳓ	ⳓ	Ⳕ
ⳕ	Ⳗ	ⳗ	Ⳙ	ⳙ	Ⳛ	ⳛ	Ⳝ	ⳝ	Ⳟ
ⳟ	Ⳡ	ⳡ	Ⳣ	ⳣ	ⳤ	⳥	⳦	⳧	⳨
⳩	⳪	ⳬ	ⳮ	⳰	⳱	Ⳳ	ⳳ	⳴	⳵
⳶	⳷	⳸	⳹	⳺	⳻	⳼	⳽	⳾	⳿
ⴀ	ⴁ	ⴂ	ⴃ	ⴄ	ⴅ	ⴆ	ⴇ	ⴈ	ⴉ
ⴊ	ⴋ	ⴌ	ⴍ	ⴎ	ⴏ	ⴐ	ⴑ	ⴒ	ⴓ
ⴔ	ⴕ	ⴖ	ⴗ	ⴘ	ⴙ	ⴚ	ⴛ	ⴜ	ⴝ
ⴞ	ⴟ	ⴠ	ⴡ	ⴢ	ⴣ	ⴤ	ⴥ	⴦	ⴧ
⴨	⴩	⴪	⴫	⴬	ⴭ	⴮	⴯	ⴰ	ⴱ
ⴲ	ⴳ	ⴴ	ⴵ	ⴶ	ⴷ	ⴸ	ⴹ	ⴺ	ⴻ
ⴼ	ⴽ	ⴾ	ⴿ	ⵀ	ⵁ	ⵂ	ⵃ	ⵄ	ⵅ
ⵆ	ⵇ	ⵈ	ⵉ	ⵊ	ⵋ	ⵌ	ⵍ	ⵎ	ⵏ
ⵐ	ⵑ	ⵒ	ⵓ	ⵔ	ⵕ	ⵖ	ⵗ	ⵘ	ⵙ
ⵚ	ⵛ	ⵜ	ⵝ	ⵞ	ⵟ	ⵠ	ⵡ	ⵢ	ⵣ
ⵤ	ⵥ	ⵦ	ⵧ	⵨	⵩	⵪	⵫	⵬	⵭

Figure 17. Educational material used to teach the basic syllabic graphemes of the Mwangwego script.



Figure 18. Most of the possible Mutuyo & Mituyo attachments onto Misisi (not according to collation/ordering).

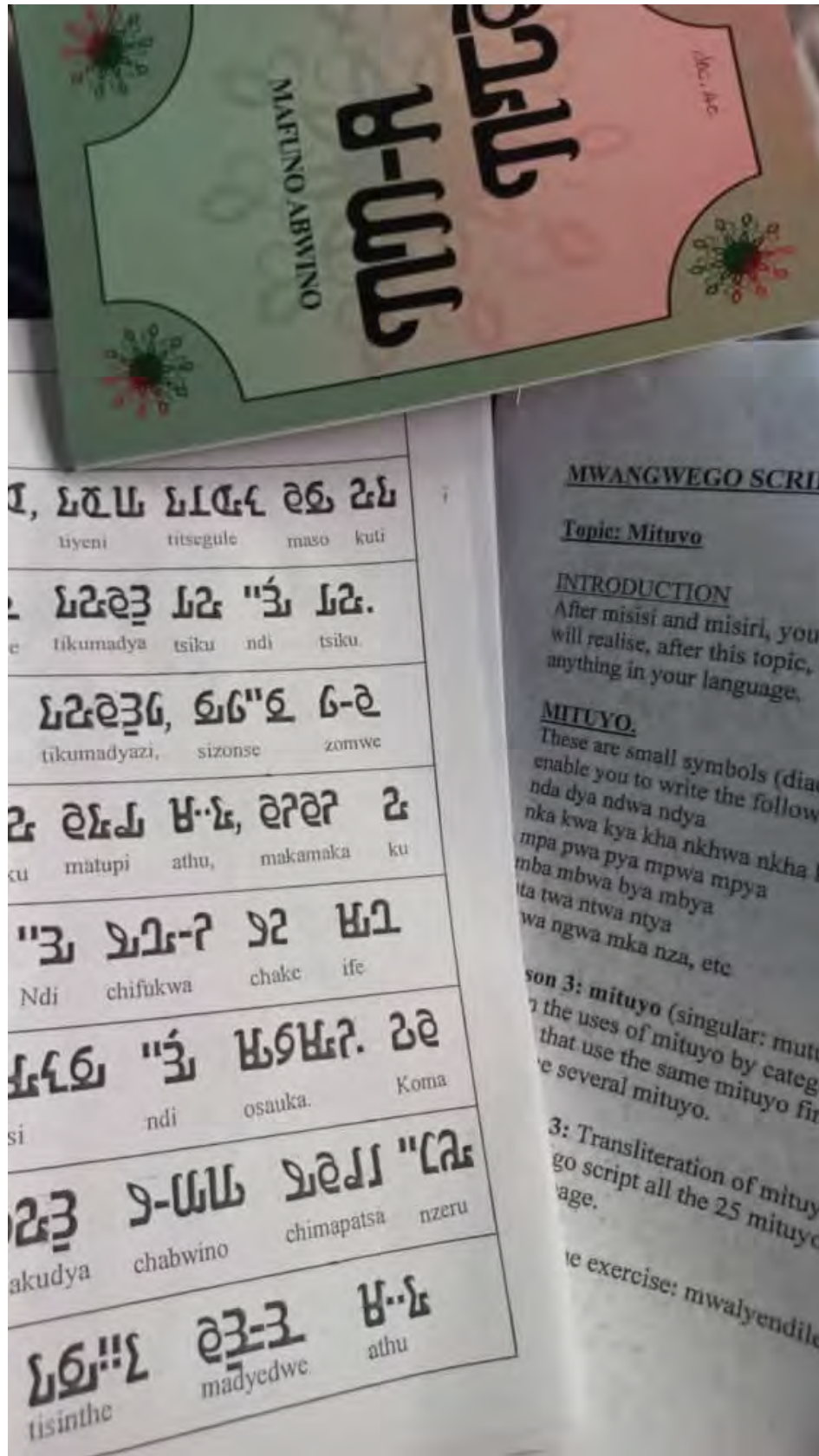


Figure 19. Educational materials used by teachers to teach the Mwangwego script.

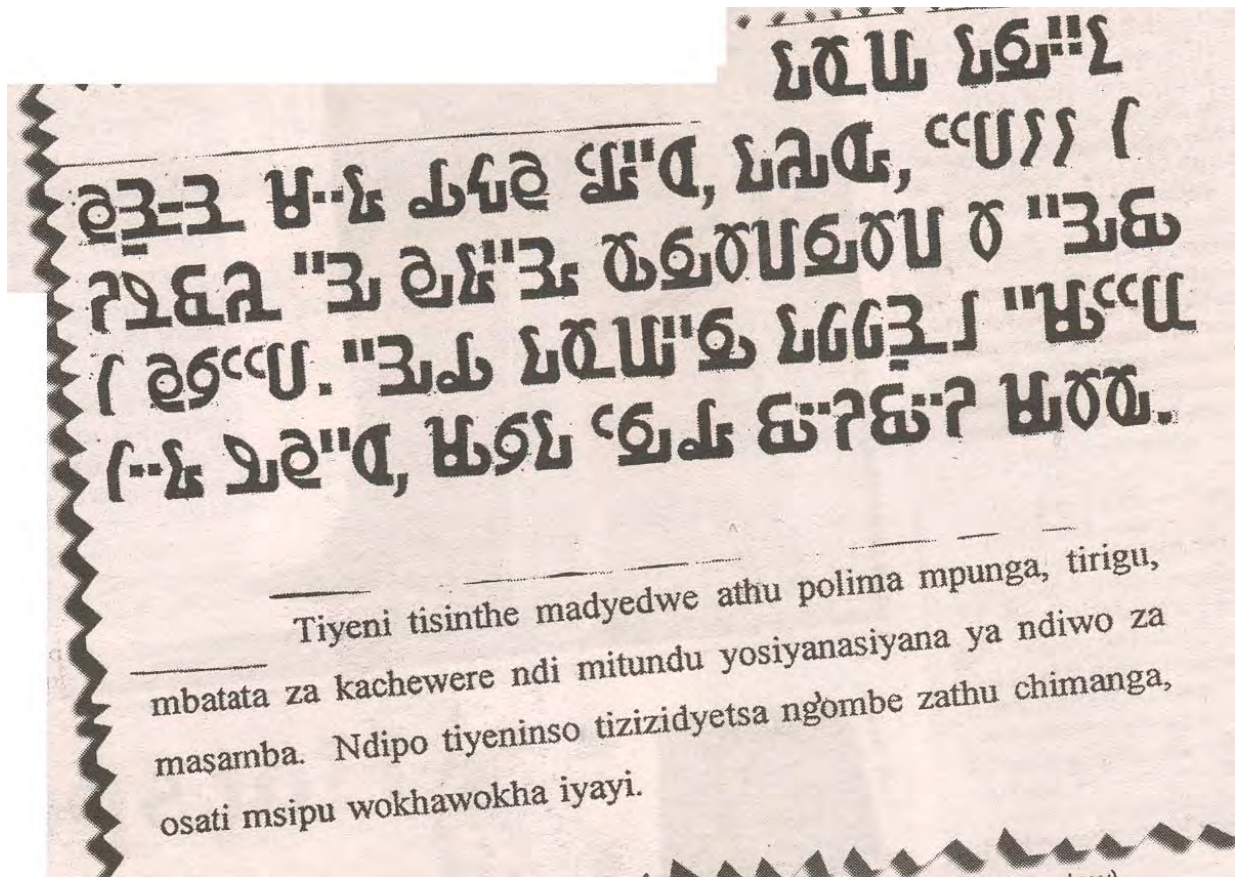


Figure 20. Excerpt from “H Ɔḡḡ ḡḡ ḡḡ?” with Latin transliteration below hosted on a news site discussing the script. English translation: “Let’s diversify our diet by growing rice, wheat, Irish potatoes and different types of vegetables. Let us feed our cattle with grains as well, not just fodder.”



Figure 21. Nolence Mwangwego teaching a classroom the Mwangwego script sometime before late-2010.







## XI ISO Proposal Summary Forms

### ISO/IEC JTC 1/SC 2/WG 2

#### PROPOSAL SUMMARY FORM TO ACCOMPANY SUBMISSIONS

#### FOR ADDITIONS TO THE REPERTOIRE OF ISO/IEC 10646<sup>1</sup>.

Please fill all the sections A, B and C below.

Please read Principles and Procedures Document (P & P) from <http://std.dkuug.dk/JTC1/SC2/WG2/docs/principles.html> for guidelines and details before filling this form.

Please ensure you are using the latest Form from <http://std.dkuug.dk/JTC1/SC2/WG2/docs/summaryform.html>.

See also <http://std.dkuug.dk/JTC1/SC2/WG2/docs/roadmaps.html> for latest *Roadmaps*.

#### A. Administrative

1. Title:	<i>Proposal for Encoding the Mwangwego Script in the UCS</i>	
2. Requester's name:	<i>Oreen Yousuf, Daniel Jacob</i>	
3. Requester type (Member body/Liaison/Individual contribution):	<i>Individual Contribution</i>	
4. Submission date:	<i>2025-10-09</i>	
5. Requester's reference (if applicable):		
6. Choose one of the following:		
This is a complete proposal:	<i>Yes</i>	
(or) More information will be provided later:		

#### B. Technical – General

1. Choose one of the following:					
a. This proposal is for a new script (set of characters):	<i>Yes</i>				
Proposed name of script:	<i>Mwangwego</i>				
b. The proposal is for addition of character(s) to an existing block:					
Name of the existing block:					
2. Number of characters in proposal:	<i>64</i>				
3. Proposed category (select one from below - see section 2.2 of P&P document):					
A-Contemporary	<input checked="" type="checkbox"/>	B.1-Specialized (small collection)	<input type="checkbox"/>	B.2-Specialized (large collection)	<input type="checkbox"/>
C-Major extinct	<input type="checkbox"/>	D-Attested extinct	<input type="checkbox"/>	E-Minor extinct	<input type="checkbox"/>
F-Archaic Hieroglyphic or Ideographic	<input type="checkbox"/>	G-Obscure or questionable usage symbols	<input type="checkbox"/>		
4. Is a repertoire including character names provided?	<i>Yes</i>				

<sup>1</sup> Form number: N4502-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, 2012-01)

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?

5. Fonts related:

a. Who will provide the appropriate computerized font to the Project Editor of 10646 for publishing the standard?

*Athinkra*

b. Identify the party granting a license for use of the font by the editors (include address, e-mail, ftp-site, etc.):

*Athinkra, LLC, [yacob@qeez.org](mailto:yacob@qeez.org), <https://github.com/athinkra/mwangwego-book>*

6. References:

a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided?

Yes

b. Are published examples of use (such as samples from newspapers, magazines, or other sources)  
of proposed characters attached?

Yes

7. Special encoding issues:

Does the proposal address other aspects of character data processing (if applicable) such as input,  
presentation, sorting, searching, indexing, transliteration etc. (if yes please enclose information)?

Yes

*A sorting description is enclosed.*

8. Additional Information:

Submitters are invited to provide any additional information about Properties of the proposed Character(s) or Script that will assist in correct understanding of and correct linguistic processing of the proposed character(s) or script. Examples of such properties are: Casing information, Numeric information, Currency information, Display behaviour information such as line breaks, widths etc., Combining behaviour, Spacing behaviour, Directional behaviour, Default Collation behaviour, relevance in Mark Up contexts, Compatibility equivalence and other Unicode normalization related information. See the Unicode standard at <http://www.unicode.org> for such information on other scripts. Also see Unicode Character Database ( <http://www.unicode.org/reports/tr44/> ) and associated Unicode Technical Reports for information needed for consideration by the Unicode Technical Committee for inclusion in the Unicode Standard.

**C. Technical - Justification**

1. Has this proposal for addition of character(s) been submitted before?	Yes
If YES explain	<i>Latest proposal <a href="#">L2/12-311</a></i>
2. Has contact been made to members of the user community (for example: National Body, user groups of the script or characters, other experts, etc.)?	Yes
If YES, with whom?	<i>Script creator, script users</i>
If YES, available relevant documents:	<i>Enclosed in the proposal</i>
3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included?	Yes
Reference:	<i>Enclosed in the proposal</i>
4. The context of use for the proposed characters (type of use; common or rare)	Rare
Reference:	<i>Enclosed in the proposal</i>
5. Are the proposed characters in current use by the user community?	Yes
If YES, where? Reference:	<i>Malawi</i>
6. After giving due considerations to the principles in the P&P document must the proposed characters be entirely in the BMP?	No
If YES, is a rationale provided?	
If YES, reference:	
7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)?	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, or could be confused with, an existing character?	Yes
If YES, is a rationale for its inclusion provided?	Yes

If YES, reference:	<i>Enclosed in the proposal</i>
<hr style="border-top: 1px dashed black;"/>	
11. Does the proposal include use of combining characters and/or use of composite sequences?	<i>No</i>
If YES, is a rationale for such use provided?	
If YES, reference:	
Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided?	
If YES, reference:	
<hr style="border-top: 1px dashed black;"/>	
12. Does the proposal contain characters with any special properties such as	
control function or similar semantics?	<i>No</i>
If YES, describe in detail (include attachment if necessary)	
<hr style="border-top: 1px dashed black;"/>	
13. Does the proposal contain any Ideographic compatibility characters?	<i>No</i>
If YES, are the equivalent corresponding unified ideographic characters identified?	
If YES, reference:	