

Development of Fonts for African Scripts: Using Computer Technologies to Preserve Africa's Written Heritage

Andrij Rovenchak (Ivan Franko National University of Lviv, Ukraine)

Zusammenfassung

Das Problem der Fonterstellung für moderne indigene afrikanische Schriftsysteme wird kurz besprochen, ebenso wie Kodierungsschwierigkeiten, den Unicode Standard eingeschlossen. Für einige der Schriften werden Schriftproben dargestellt.

Abstract

The issue of the font making for modern indigenous African scripts is briefly discussed. Encoding problems, including the Unicode standard, are addressed. Font samples are presented for some of the scripts.

Résumé

L'issue de la police conduisant aux écritures africains indigènes modernes est brièvement discutée. Des problèmes de codage, y compris la norme d'Unicode, sont abordés. Des échantillons de police sont présentés pour certains des écritures.

1. Scripts of Africa in the Modern Age

<1>

Africa is a homeland of one of the most ancient writing systems, Egyptian hieroglyphs. An ongoing competition with the Sumerian cuneiform for the oldest script will hardly have a sure winner in the nearest future but recently the evidences supporting Africa's side were revealed (Mitchell 1999).

<2>

In the course of history, new scripts appeared on the African continent, Hieratic and Demotic forms were the simplifications of Egyptian hieroglyphs, Greek-based Coptic and Old Nubian alphabets developed, as well as Punic scripts, Lybian script, Tifinagh.

<3>

Under the influence of the Arabic script, the so-called sub-Arabic (magic and secret) alphabets appeared (Dalby 1968). The adaptations of the Arabic alphabet for recording of African languages (under a general term *ajami*) are also known.

<4>

Today, three scripts are officially adopted in Africa: **Roman**, **Arabic**, and **Ethiopic** (cf. Pasch 2008). In 2003, **Neo-Tifinagh** (Tifinagh IRCAM) alphabet was confirmed for an official use in Morocco for the Berber (Tamazight or Amazigh) language (Mafundikwa 2004: 46), upon King Mohamed VI's decision in 2002 (IRCAM n.d.).

<5>

Numerous writing systems are known in Africa in the Modern Age, starting from the 19th century and especially in the course of the 20th century (Dalby 1967; 1969; Coulmas 2004; Mafundikwa 2004; Tuchscherer 2005; 2007; Kootz & Pasch 2008; Rovenchak & Glavy 2009), see Table 1 and Figure 1.

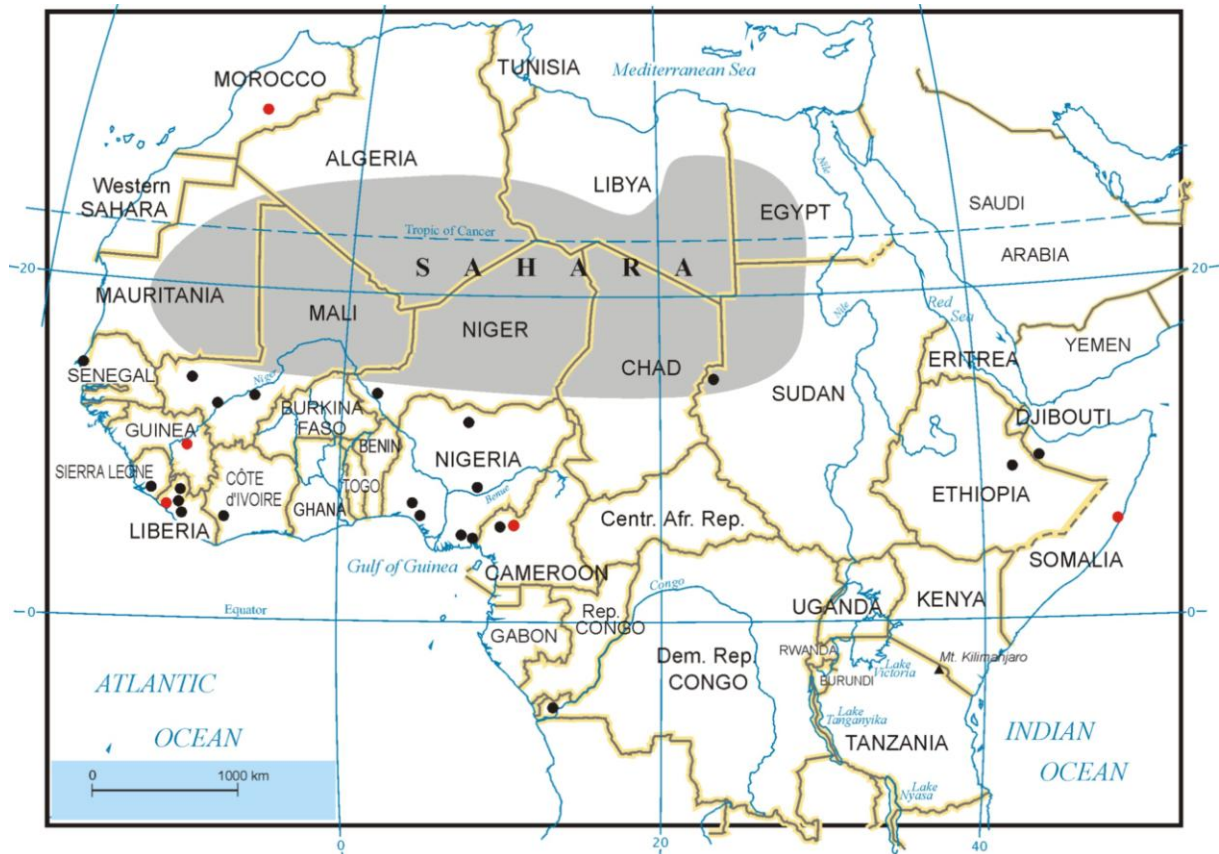
Table 1: Provisional classification of indigenous African scripts

Mande syllabaries	Other West-African alphabets	Further West-African scripts	Religious*	Egypt, Sudan, Ethiopia, Somali
Vai	N'ko	Bamum	Oberi Okaime	Coptic
Mende	Bassa (Vah)	Bagam (Eghap)	Yoruba Holy script	Nubian Kenzi alphabet
Kpelle	Wolof Garay	Bété	Mandombe	New Nubian (Nobiin)
Loma	Wolof Saaliw wi	Nwagu Aneke		Zaghawa Beria
Bambara	Fula Ba	Aka Umuagbara		Somali Osmanya
	Fula Dita			Somali Gadabuursi
	Hausa Raina Kama**			Somali Kaddare
	Hausa Salifou (Gobiri)**			Oromo
	Hausa Tafi**			

* Linked to some indigenous African church.

** For some introductory information on the Hausa scripts having rather limited usage, see [this link](#).

Figure 1: Map showing the locations of African script created in the Modern Age.



Red dots indicate the scripts already represented in Unicode, remaining black circles show the locations of other numerous indigenous African scripts.

<6>

Usage of the various scripts shows significant variation. A few still have (or had in the past) considerable popularity among the speakers of a particular language (like Vai and Bamum) or a group of languages (like N’ko). Some scripts are/were used within indigenous African churches (Yoruba Holy script, Oberi Okaime, Mandombe). Many scripts are used within smaller communities, reduced sometimes to a particular family or a circle of close friends, and even the so called ‘individual scripts’ are known. It is not always possible to draw a strict dividing line between the script groups within this classification. The process of script creation was urged to a large extent by the end of colonial epoch in Africa in 1950s-1960s as an element of national identity.

2. Unicode

<7>

Of all the mentioned African scripts, only a few are represented in the [Unicode](#), an international standard for text representation in the majority of the world’s writing systems. These are:

- *N’ko* (07C0–07FF block)
- Coptic and Nubian (2C80–2CFF block)
- *Tifinagh* (2D30–2D7F block)
- Vai (A500–A63F block)
- Somali *Osmanya* (10480–104AF block)
- Bamum (A6A0–A6FF block)
- Egyptian hieroglyphs (13000–1342F block)

<8>

Some scripts are waiting for a final approval which is expected in the nearest future:

- Meroitic (10980–109FF block)
- Old Bamum (16800–16A3F block)

<9>

The Bamum script and the Egyptian hieroglyphs are the most recent additions to the Unicode ([Version 5.2](#)) released in October 2009.

<10>

While these additions will certainly take into account most of the new African scripts being represented by a relatively large amount of texts each (Bamum, Vai, N’ko, and Osmanya), many less popular scripts remain un-encoded and any relevant information exchange is still a big problem.

<11>

For the preparation of Unicode proposals samples of script usage are crucial, and the lack of sufficient indigenous text materials is the main obstacle to develop a proper proposal.

<12>

For many of those non-Unicode scripts various computer fonts were created. This fact facilitates the representation of indigenous African scripts in electronic form, requiring further standardization agreements though. One should note that this is not the problem of non-Unicode scripts only, e.g., most of the N’ko texts available electronically use a couple of pre-Unicode fonts with *different* character mapping.

<13>

For the scripts covered by the Unicode fonts are available and this makes character shapes more or less standard. One should note, however, that character shapes themselves are not a subject of the Unicode encoding, neither are these shapes superimposed by any Unicode font.

<14>

Many indigenous African scripts presently remain beyond the Unicode. The texts are mostly handwritten and character shapes vary significantly, cf. the variety of Brahmi-derived scripts in India and adjacent lands that appeared due to different writing styles, writing media, etc. before the printing was invented. As indigenous scripts are/were used mostly for personal communication and record keeping, only few appeared in printing with movable type in pre-computer era: Bassa, Osmanya, N'ko, and it is likely that this short list has no other items.

<15>

The change of glyph shapes with the lapse of time is shown in Fig. 2 for the Kpelle script. The respective typefaces are based on different character tables collected by David Dalby (1967) and Ruth Stone (1990), respectively.

Figure 2: Kpelle script, samples of different versions

	i	a	u	e	ε	ɔ	o
p / b			#				
ɓ / m							
kp / gb							

JG Kpelle A / JG Kpelle B © GlavyFonts, based on Dalby (1967)

	i	a	u	e	ε	ɔ	o
p / b			#				
ɓ / m							
kp / gb							

Kpelle New © Andrij Rovenchak, based on (Stone 1990)

3. Available fonts and font samples

<16>

At present, the fonts for African indigenous scripts, both Unicode and non-Unicode, are known to be created by:

- SIL: SIL Vai, Zaghawa Beria, etc.;
- Evertype: Dukor (for Vai), N'ko, Osmanya, etc.;
- Various vendors for separate scripts;
- *Jason Glavy* (GlavyFonts):
JG Bamum (set), JG Bassa Vah Print, JG Bete, JG Gadabuursi Somali, JG Kpelle A, JG Kpelle B, JG Loma, JG Mende, JG Nko, JG Oromo, JG Vai (set);
- *the present author*:
AkaUli, Bagam, Bambara Ma-sa-ba, Fula Ba, Fula Dita, Hausa Raina Kama, Hausa Salifou, HausaTafi, Kpelle New, Mandombe, Menelik, NeoTifinagh, OberiOkaiame, Somali Osmanya, Yoruba 'Holy', Tifinagh, Wolof.

<17>

This list, of course, is not intended as a complete one, and any information helping to expand the ‘various vendors’ item is highly appreciated.

<18>

Below, the samples of some of the abovementioned typefaces are given (Figs. 3-11).

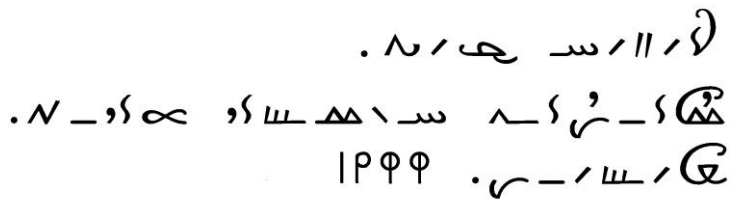
Figure 3: JG Bamum Akauku

	a	ε	e	i	ɔ	u	ü	ɯ	uə	ie	—
—	ᵛ		ᵛ	ᵛ	ᵛ	ᵛ	ᵛ	[ᵛ]			
p			ᵛ				ᵛ		ᵛ		
t					ᵛ						
nd	ᵛ										
k	ᵛ					ᵛ					
ŋg	ᵛ		ᵛ		(ᵛ)						
kp	ᵛ		ᵛ		ᵛ						
m				ᵛ		ᵛ					ᵛ
n	ᵛ	ᵛ	ᵛ	ᵛ	ᵛ	ᵛ	ᵛ	ᵛ	ᵛ		ᵛ
ny	ᵛ		ᵛ	ᵛ	ᵛ		ᵛ				
ŋ	ᵛ		ᵛ		ᵛ	ᵛ		ᵛ	ᵛ		[ᵛ]
l	ᵛ				ᵛ	ᵛ					

Figure 4: JG Gadabuursi Somali

3HΓTJ
 QTTGIL TU PHJGT 4C3HU. 3TGT-
 NTT. TUT9C QT UT4TT. SHS IL QC-
 4C YTΓ OQ4C. TQS IL QHUT QT-
 4T JCUY ΓI4TY. JTΓI UT OCC

Figure 11: Wolof



Asan Fay. Tēreb Nitku Nyūl. Dakār. 1966

4. Final remarks

<20>

Script materials are highly dispersed; usually the manuscripts are not preserved in good conditions (Tuchscherer 1995). The Bamum script is an exception as a [project](#) aiming the preservation of the Bamum script materials was initiated recently.

<21>

Computer fonts can attribute to saving those materials by means of converting them into an electronic form, which is otherwise available only via scanning. Availability of electronic texts is a prerequisite for any broad linguistic analysis, which is yet to be done for texts written in indigenous African scripts.

<22>

Of course, there is something beyond practical applications of the font making, something like a pure interest. And – fortunately – one can take advantage of this pure interest for the preservation of Africa's written heritage.

<23>

Acknowledgements. I am grateful to Fritz-Thyssen-Stiftung for the opportunity to participate in the Workshop *5000 Jahre Schrift in Afrika: Entstehung, Funktionen und Wechsel von Schriftsystemen* (November 2008, Köln).

References

- Coulmas, Florian 2004
The Blackwell Encyclopedia of Writing Systems. Blackwell Publishing
- Dalby, David 1967
'A survey of the indigenous scripts of Liberia and Sierra Leone: Vai, Mende, Loma, Kpelle and Bassa.' In: *African Language Studies* 8: 1-51
- Dalby, David 1968
'The indigenous scripts of West Africa and Surinam: Their inspiration and design.' In: *African Language Studies*, 9: 156-197
- Dalby, David 1969
'Further indigenous scripts of West Africa: Manding, Wolof and Fula alphabets and Yoruba 'holy' writing.' In: *African Language Studies*, 10: 161-181
- IRCAM n.d.
Institut Royal de la Culture Amazighe. <http://www.ircam.ma/fr/index.php?soc=ircam&rd=5>
(25.11.2010)
- Kootz, Anja and Helma Pasch (eds.) 2008
5000 Jahre Schrift in Afrika. Universitäts und Stadtbibliothek Köln.
- Mafundikwa, Saki 2004
Afrikan Alphabets: The story of writing in Afrika. Mark Batty Publisher
- Mitchell, Larkin 1999
'Earliest Egyptian glyphs.' In: *Archeology*, 52, 2: 28-29
- Pasch, Helma 2008
'Competing scripts: the introduction of the Roman alphabet in Africa.' In: *International Journal of the Sociology of Language* 191: 65-109
- Rovenchak, Andrij and Jason M. Glavy 2009
Afrykans 'ki systemy pys 'ma novoho chasu: region Sub-Sakhary [African Writing Systems of the Modern Age: the Sub-Sahara Region]. New Haven; Lviv; Abidjan: Athinkra. (in Ukrainian)
- Stone, Ruth M. 1990
'Ingenious Invention: The Indigenous Kpelle Script in the Late Twentieth Century.' In: *Liberian Studies Journal* XV, 2: 135-144
- Tuchscherer, Konrad 1995
'African Script and Scripture: The History of the *Kikakui* (Mende) Writing System for Bible Translations.' In: *African Languages and Cultures* 8, 2: 169-188
- Tuchscherer, Konrad 2005
'History of writing in Africa.' In: Apiah, Kwame Anthony and Henry Louis Gates, Jr. (eds.) *Africana: The Encyclopedia of the African and African American Experience. 2nd edition*, pp. 476-480. New York: Oxford University Press
- Tuchscherer, Konrad 2007
'Recording, communicating and making visible: A history of writing and systems of graphic symbolism in Africa.' In: *Inscribing Meaning: Writing and Graphic Systems in African Art*, pp. 37-53. Smithsonian Institution