— ***The Missing Scripts***
— Les écritures manquantes de l’Unicode

Atelier national de recherche typographique *— Nancy, France*
Designlabor Gutenberg, Hochschule Mainz *— Mayence, Allemagne*
Department of Linguistics, University of Berkeley *— Berkeley, USA*

Participants :
Arthur Francietta, Morgane Pierson, Émilie Aurat, Alexandre Bassi, Parimal Parmar

Remerciement :
Decodeunicode, The Unicode consortium, Alphabetum Den Haag, Région Grand Est

Partenaires :
Deborah Anderson, Johannes Bergerhausen, Jérôme Knebusch, Thomas Huot-Marchand

El

Foreword

In roughly 5,000 years, mankind has created 290 writing systems like Latin, Greek, Arabic or Chinese. As of today, we can use 150 of them on our computers and smart phones. But at the same time this means that 140 scripts are still missing on our computers. These are the obscure, the historical and the so-called ‘Minority Scripts’.

The Missing Scripts Project is a long-term initiative to focus on research and type-design for these lesser known writing systems. Started in 2016, it is a joint effort of Hochschule Mainz, Germany, the Atelier national de recherche typographique (3rd cycle of the École nationale supérieure d’art et de design) Nancy, France, and the Script Encoding Initiative (Department of Linguistics, UC Berkeley), USA.

Fr

Avant-propos

Sur une période d’environ 500 ans, 290 systèmes d’écritures ont été créés par l’homme, tels que le Latin, le Grec, l’Arabe ou le Chinois. 150 d’entre eux sont aujourd’hui accessibles sur nos ordinateurs et smartphones ; et par conséquent, 140 manquent encore. Ils s’agit d’écritures complexes, disparues ou indéchiffrées, et des écritures dites « minoritaires ».

The Missing Scripts est un projet à long terme, qui vise à développer des recherches et des créations typographiques pour ces systèmes d’écritures méconnus. Initié en 2016, il réunit la Hochschule de Mayence, en Allemagne, l’Atelier national de recherche typographique (3e cycle de l’École nationale supérieure d’art et de design) de Nancy, France, et le Script Encoding Initiative (Department of Linguistics), de l’Universtité de Berkeley, en Californie.

— *Half of the writing systems of the history of mankind remain to be encoded*

— *Le moitié des écritures de l'histoire de l'humanité ne sont pas encodées*

Auteurs :
Johannes Bergerhausen, Thomas Huot-Marchand, Morgane Pierson

The Missing Scripts project brings together experts in linguistics, typography and type design. It aims to develop typefaces for writing systems which remain to be encoded. Most of these scripts do not have any typographic form.

The Unicode standard

The Unicode consortium is a non-profit organization. Members include the giants of the tech industry (Apple, Microsoft, Google, Adobe, Facebook, Amazon, Netflix, etc.). Based in Silicon Valley, its goal is to develop a single standard that integrates all the signs of all the writing systems in the world. This standardization makes it possible to exchange these signs on all digital platforms. The standard is divided into ranges (which cover sets of characters, such as Latin, Greek, Cyrillic, etc.) which group together codepoints (the unique identifier associated with each sign or character). Founded in 1991, it is updated regularly (currently, at an annual pace). Version 12 currently includes 137,928 characters.

The process of normalizing a script for its integration into Unicode is long and complex. It is necessary to submit a proposal which is studied by technical committees, which are responsible for assigning ranges and codepoints, and to determine the technical specifications for using these scripts. However, anyone can submit a proposal. To be accepted, the nature of the writing must be recognized: that it has an existence, historical sources, an attested community of scripters, and operates as a system (type of writing, number of signs, order of signs , reading direction, possible combinations...).

Almost all of the text exchanges in the world are done today via the Unicode standard, which greatly facilitated this interoperability. Unicode allows each writing system (and each culture) to exist, regardless of the number of users. As such, it represents great progress in the expression of so-called «non-Latin» scripts, long overshadowed by an essentially Western and Latin-centric industry.

The role of GAFAM in the Unicode consortium is to enable the implementation of writing systems in the various platforms and operating systems. It was under their impetus that emojis, very popular today, have developed considerably; part of the scientific community deplores the part which is granted to them, to the detriment of other less known writings.

For the moment, there is no digital font that includes all the signs encoded by Unicode. This is the ambition of Google with Noto (for ***No Tofu***, a name which designates the rectangle crossed out by a cross which is displayed when a glyph is missing in a font), open-source project developed since 2012. This text is composed in Noto Sans.

The missing scripts

In 2004, Johannes Bergerhausen founded a research project on Unicode, called decodeunicode. the first step was a printed poster with all Unicode characters: the first version is from 2004, the second 2007. In 2011, he published with Siri Poarangan ***decodeunicode – Die Schriftzeichen der Welt*** [1], a 656 p. book showing all the Unicode ranges and characters. This database is visible on its website, decodeunicode.org.

Since 2013, Johannes is a visiting professor at the Atelier national de recherche typographique, in Nancy. In 2015, he asked Jérôme Knebusch (instructor at ANRT) to design a typeface, Decode BlockDock, with one glyph for each Unicode range, to be used on the website navigation bar.

In 2015, we asked a simple question to Deborah Anderson, an american linguist and member of the Unicode consortium, who runs the Script Encoding Initiative in the University of Berkeley.

How many writing systems are there, in the history of humanity?

Answer: 292.

How many of it are actually encoded?

Answer: 146.

Half of it. 50% of the job remain to be done. We decided then to work on these missing scripts, which are the more obscure, rare or complex ones.

The first results of this research have been revealed in a silk-screen 4 color poster, presenting all the writing systems by color : Historic and encoded, historic unencoded, living encoded and living unencoded. The basic idea is to present a reference glyph for each script: the letter A for an alphabet, the letter KA for Syllabaries, and a part of the human body for pictographic/ideographic scripts (there are some exceptions: the letter Omega stands for Greek, for instance).

The type design aspect was central and raised many questions. Our sources for each scripts was very different and the shapes very diverse. We chose a monolinear approach with the goal to be as close as possible to the ductus: no serif-like details, medium weight and low contrast. We are aware that this approach could make us loose some information, but the intention here was to focus on the basic structure and see all the writing systems of the world in the same way.

The first edition of the poster, published in 2018, presented the 146 writing systems encoded in Unicode 11, and 146 missing scripts. The 2nd edition, published in 2019, presents a total of 290 writing systems, given that 3 different Chinese scripts (Oracle bone script, Bronze script, and seal script) were merged into one (Old Hanzi) in Unicode 12.

In the meantime, several «missing scripts» fonts have been developed at ANRT Nancy, in partnership with scholars involved in Unicode proposals: Palaeo-hispanic (Arthur Francietta, 2016-2018), Elymaic (Morgane Pierson, 2017-2019), Afaka (Émilie Aurat, 2018-2020) or Sharada (Parimal Parmar, 2019-2021) and even Mayan hieroglyphs (Alexandre Bassi, 2019-2021). These fonts will be published under SIL Open Font License. Morgane Pierson designed the Noto Elymaic in 2019 for Google.

Le standard Unicode est une organisation non-lucrative où siègent les principaux acteurs de l'industrie numérique (Apple, Microsoft, Google, Adobe, Facebook, Amazon, Netflix, etc.). Basé dans la Silicon Valley, son objectif est de développer un standard unique qui intègre tous les signes de toutes les écritures du monde. Cette normalisation permet d'échanger ces signes sur toutes les plates-formes numériques. Le standard est divisé en plages (qui couvrent des ensembles de caractères, tels que le Latin, le grec, le cyrillique, etc.) qui regroupent des

1. **Decodeunicode: Die Schriftzeichen der Welt.**
Johannes Bergerhausen & Siri Poarangan.
Hermann Schmidt Verlag, Mainz, Germany, 2011. ISBN 3874398137

codepoints (l'identifiant unique associé à chaque signe ou caractère). Fondé en 1991, il est mis à jour régulièrement (à l'heure actuelle, chaque année). La version 12 intègre à ce jour 137 928 caractères.

Le processus de normalisation d'une écriture pour son intégration à l'Unicode est un processus long et complexe. Il est nécessaire de soumettre une proposition qui est étudiée par des comités techniques, qui se chargent d'attribuer les plages et les codepoints, et de déterminer les spécificités techniques d'utilisation de ces écritures. Néanmoins, tout le monde peut soumettre une proposition. Pour être acceptée, il faut que la nature de l'écriture soit reconnue : qu'elle ait une histoire, des sources historiques, une communauté de scripteurs attestée, et un fonctionnement précis (type d'écriture, nombre de signes, ordre des signes, sens de lecture, combinaisons éventuelles…).

La quasi-totalité des échanges de textes dans le monde se fait aujourd'hui via le standard Unicode, qui a grandement facilité cette inter-opérabilité. L'Unicode permet à chaque écriture d'exister, quelque soit le nombre de ses utilisateurs. À ce titre, il représente un grand progrès dans l'expression des écritures dites « non-latines », longtemps éclipsées par une industrie essentiellement occidentale et latino-centrée.

Le rôle des GAFAM dans le consortium Unicode est de permettre l'implémentation des systèmes d'écritures dans les différentes plates-formes et systèmes d'exploitation. C'est sous leur impulsion que se sont considérablement développés les emojis, aujourd'hui très populaires ; une partie de la communauté scientifique déplore la part qui leur est accordée, au détriment d'autres écritures moins connues.

Il n'existe pour le moment aucune fonte qui regroupe tous les signes encodés par l'Unicode. C'est l'ambition de Google avec Noto (pour *No Tofu*, nom qui désigne le rectangle barré d'une croix qui s'affiche lorsqu'un glyphe est manquant dans une fonte), projet open-source développé depuis 2012. Ce texte est composé en Noto Sans.

The missing scripts

En 2004, Johannes Bergerhausen a initié un projet de recherche sur l'Unicode, decodeunicode. Le premier pas était la publication d'un poster présentant tous les caractères de la version 6 du standard. La seconde édition est parue en 2007. En 2011, il publie avec Siri Poarangan ***decodeunicode – Die Schriftzeichen der Welt,*** un livre de 656 pages qui présente tous les caractères de l'Unicode. Cette ressource est également visible en ligne sur le site decodeunicode.org.

Depuis 2013, Johannes Bergerhausen est professeur associé à l'Atelier national de recherche typographique (ANRT) à Nancy. En 2015, il commande à Jérôme Knebusch, enseignant à l'ANRT, une fonte qui contienne un glyphe par plage Unicode, decode BlockDock, pour la navigation du site.

En 2015, nous avons posé une question simple à Deborah Anderson, linguiste américaine, membre de l'Unicode, qui a créé le Script Encoding Initiative à l'Université de Berkeley.

Combien d'écritures ont été créées, dans l'histoire de l'humanité ?

Réponse: 292.

Combien d'entre elles sont encodées ?

Réponse: 146.

La moitié. 50% du travail reste à faire. Nous avons alors décidé de nous pencher sur ces écritures, qui sont les plus obscures, les plus rares ou les plus complexes.

Les premiers résutlats de ce projet de recherche ont été révélés sous la forme d'un poster sérigraphié qui présente tous les systèmes d'écritures par couleur : les écritures historiques encodées, historiques non-encodées, et les écritures vivantes encodées ou non-encodées. L'idée de base est de présneter un glyphe de référence par système d'écriture : pour les alphabets, la lettre A ; pour les syllabaires, le son KA ; pour les systèmes pictographiques ou idéographiques, une partie du corps humain. Il y a quelques exceptions, comme par exemple pour le Grec, représenté par l'Omega plutôt que l'Alpha.

Le dessin des caractères était un aspect central de ce projet, et a posé de nombreuses questions. Les sources disponibles étaient très diverses, etr les formes très variées. Nous avons choisi, pour plus de clarté, un dessin monolinéaire, sans empattements ou terminaisons, une graisse moyenne et un minimum de contraste. Tout en étant conscient que ce dessin pouvat faire perdre quelques détails pour certains signes, l'intention était de se concentrer sur la structure essentielle des signes, et de représenter toutes ces écritures d'une même façon.

La première édition du poster, publiée en 2018, présente les 146 systèmes d'écriture présents dans l'Unicode, et les 146 ***missing scripts***. La deuxième version présente 150 écritures encodées et 140 missing, pour un total de 290: entre-temps, 3 écritures de Chine (Oracle bone script, Bronze script, and

The complete database is online on the website worldswritingsystems.org, designed by Johannes Bergerhausen. The scripts can be sorted by name, time, region, unicode and status. This tool is meant to share knowledge and useful links with designers and experts, to build new proposals and digital fonts and propose these scripts to Unicode.

This presentation will focus on the key approaches of this international research and design project and show why it is important to get these scripts on the computer, even the historical ones. The problems posed by typographical transcription of complex scripts, or for which sources are rare, will also be addressed. And finally, to advocate for better interaction between researchers, designers and engineers in the font encoding process, so that these scripts are no longer missing in the future.

1

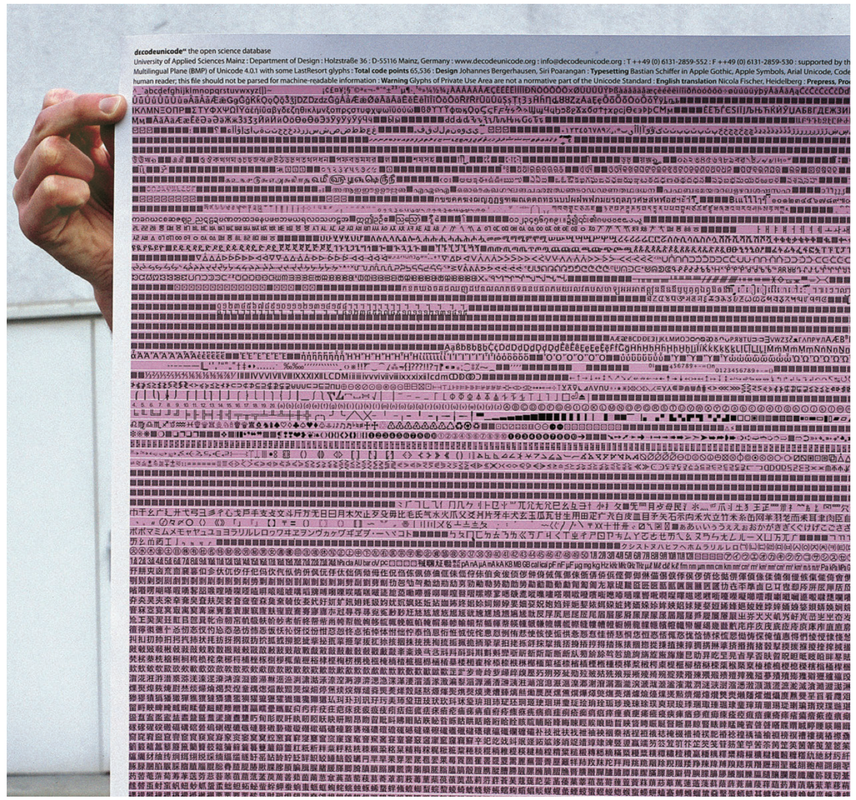
seal script) ont en effet été réunie sur une seule plage (Old Hanzi) pour la mise-à-jour de l'Unicode 12.

En parallèle, plusieurs missing scripts ont été dessinés à l'ANRT, en collaboration avec le Script Encoding Initiative et les chercheurs impliqués dans leurs propositions d'encodage : Paléo-hispanique (Arthur Francietta, 2016-2018), Elymaic (Morgane Pierson, 2017-2019), Afaka (Émilie Aurat, 2018-2020) ou Sharada (Parimal Parmar, 2019-2021) et même les hiéroglyphes mayas (Alexandre Bassi, 2019-2021). En 2019, Morgane Pierson a également dessiné le Noto Elymaic pour Google.

L'ensemble de la base de données est consultable sur le site worldswritingsystems.org conçu par Johannes Bergerhausen. Les systèmes d'écriture peuvent y être organisés par nom, par date, par région géographique, par encodage ou par statut. Cet outil a pour vocation de faciliter la mise en partage des connaissances entre chercheurs et designers, pour élaborer de nouvelles propositions d'encodage, et faire en sorte qu'à l'avenir, ces écritures ne soient plus manquantes.

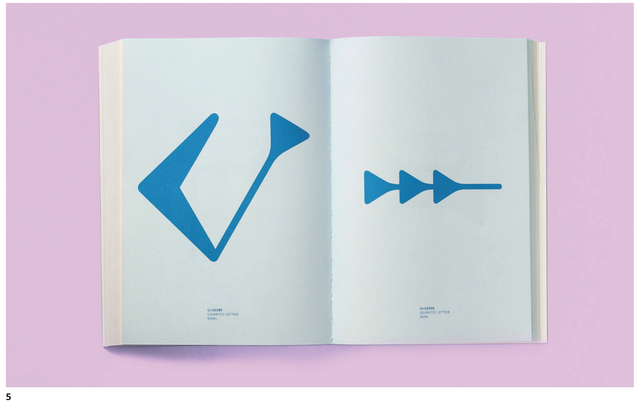
2

1



3

4



5

6

1. *Decodeunicode: Die Schriftzeichen der Welt.* Johannes Bergerhausen & Siri Poarangan, Hermann Schmidt Verlag, Mainz, Germany, 2011
2. ibid.
3. decodeunicode 1st poster, 2004
4. *Digitale Keilschrift / Digital cuneiform.* Johannes Bergerhausen, Hermann Schmidt Verlag, Mainz, Germany, 2014
5. ibid.
6. *Decodeunicode: Die Schriftzeichen der Welt.* Johannes Bergerhausen & Siri Poarangan, japanese edition
7. *The World's Writing Systems.* 80 x 120 cm silkscreen poster, 1st edition. Hochscule Mainz, ANRT Nancy, SEI Berkeley. Graphic design : Johannes Bergerhausen. Type design : Arthur Francietta (ANRT 2017) & Morgane Pierson (ANRT 2018)
8. *The World's Writing Systems.* 1st edition, detail
9. *The World's Writing Systems.* 2nd edition, detail
10. *The World's Writing Systems.* 2nd edition, detail


THE WORLD'S WRITING SYSTEMS


GRANTHA
SOUTH ASIA
7c — today
GLAGOLITIC
EUROPE
862 — 1893
SHARADA
SOUTH ASIA
DEVANAGARI
SOUTH ASIA
11 c — today
TAI THAM
SOUTHEAST ASIA
TELUGU
SOUTH ASIA
13 c — today
LAHNDA
PUNC

The Missing Scripts Project is a long-term initiative that aims to identify writing systems which are not yet encoded in the Unicode standard.

This poster presents one glyph for each of the world's writing systems.

This presentation should be seen as a snapshot of the state of research in november 2019.

The number of scripts could change in the future due to further research.

For the following elements it is not certain if they are to be considered scripts. These elements will need further research:

Archaic Miao Square Script, Asho Chin, Cacaxtla, Duota, Fakkham, Goya Kannadi, Izapa, Jing, Kaminaljuyu, Khamyang, Lik Hto Ngouk, Old Khmer, Old Mon, Pale

Palaung, Rakhawunna, Rencong, Savara, Tajin, Takalik Abaj, Thai Nithet, Thai Noi (Lao Buhan), Tula, Vinca.

If you have any reliable information on any of these elements please contact Dr. Deborah Anderson at Department of Linguistics, SEI, UC Berkeley, USA: dwanders@berkeley.edu

THE WORLD'S WRITING SYSTEMS

Historical scripts encoded in Unicode 12.0
Historical scripts not yet encoded in Unicode

Living scripts encoded in Unicode 12.0
Living scripts not yet encoded in Unicode

~35 c

PROTO-CUNEIFORM — MIDDLE EAST — ~33 c — ~2901
EGYPTIAN HIEROGLYPHS — AFRICA — ~31 c — 1 c
PROTO-ELAMITE — MIDDLE EAST — ~31 c — ~29 c
EARLY DYNASTIC CUNEIFORM — MIDDLE EAST — ~29 c — ~2350
HIERATIC — AFRICA — ~29 c — 200
INDUS VALLEY SCRIPT — SOUTH ASIA — ~25 c — ~19 c
CUNEIFORM — MIDDLE EAST — ~2350 — 1 c
BYBLOS — MIDDLE EAST — ~18 c — ~15 c

~33 c

~12 c

PHOENICIAN — MIDDLE EAST — ~12 c — ~2 c
CYPRIOT SYLLABARY — EUROPE — ~11 c — ~3 c
BRONZE SCRIPTS — EAST ASIA — ~1000 — ~3 c
OLMEC — AMERICA — ~900 — ~400
GREEK — EUROPE — ~8 c — today
IMPERIAL ARAMAIC — MIDDLE EAST — ~8 c — ~4 c
LYDIAN — MIDDLE EAST — ~8 c — ~3 c
OLD ITALIC — EUROPE — ~8 c — ~1 c

~6 c

OLD PERSIAN — MIDDLE EAST — ~525 c — ~4 c
LYCIAN — MIDDLE EAST — ~5 c — ~3 c
SIDETIC — MIDDLE EAST — ~5 c — ~3 c
ZAPOTEC — AMERICA — ~500 — ~100
EPI-OLMEC — AMERICA — ~400 — 100
ETHIOPIC — AFRICA — ~4 c — today
BRAHMI — SOUTH ASIA — ~3 c — 10 c
ELYMAIC — MIDDLE EAST — ~3 c — 5 c

~3 c

SATAVAHANA — SOUTH ASIA — ~220 — 220
NABATAEAN — MIDDLE EAST — ~2 c — 4 c
NUMIDIAN — AFRICA — ~2 c — 3 c
PALMYRENE — MIDDLE EAST — ~1 c — ~1 c
HATRAN — MIDDLE EAST — ~98 — 240
HAN — EAST ASIA — 1 c — today
RUNIC — EUROPE — 1 c — 19 c
SEAL — EAST ASIA — 121 — 19 c

3 c

TIFINAGH — AFRICA — 3 c — today
COPTIC — AFRICA — 4 c — today
GOTHIC — EUROPE — 4 c — 9 c
KADAMBA — SOUTH ASIA — 4 c — 6 c
SHANKHA (SHELL SCRIPT) — SOUTH ASIA — 4 c — 9 c
ARMENIAN — EUROPE — 406 — today
CAUCASIAN ALBANIAN — EUROPE — 5 c — ?
GEORGIAN — EUROPE — 5 c — today

6 c

PALLAVA — SOUTH ASIA — 6 c — 9 c
PSALTER PAHLAVI — MIDDLE EAST — 6 c — 7 c
SYRIAC — MIDDLE EAST — 6 c — today
TIBETAN — CENTRAL ASIA — 6 c — today
VATTELUTTU — SOUTH ASIA — 6 c — 14 c
BOOK PAHLAVI — MIDDLE EAST — 7 c — 9 c
GRANTHA — SOUTH ASIA — 7 c — today
SIDDHAM — EAST ASIA — 7 c — today

8 c

KATAKANA — EAST ASIA — 8 c — today
KAWI — SOUTHEAST ASIA — 8 c — 16 c
NANDINAGARI — SOUTH ASIA — 8 c — 18 c
OLD TURKIC — CENTRAL ASIA — 8 c — 9 c
OLD UYGHUR — CENTRAL ASIA — 8 c — 18 c
SHARADA — SOUTH ASIA — 8 c — 20 c
GLAGOLITIC — EUROPE — 862 — 1893
CYRILLIC — EUROPE — 890s — today

10 c

NEWA — SOUTH ASIA — 10 c — today
WESTERN CHAM — SOUTHEAST ASIA — 10 c ? — today
TANGUT — EAST ASIA — 1036 — 16 c
ORIYA — SOUTH ASIA — 1051 — today
BALINESE — SOUTHEAST ASIA — 11 c — today
BENGALI — SOUTH ASIA — 11 c — today
BHAIKSUKI — SOUTH ASIA — 11 c — 12 c
DEVANAGARI — SOUTH ASIA — 11 c — today

13 c

MALAYALAM — SOUTH ASIA — 13 c — today
MONGOLIAN — CENTRAL ASIA — 13 c — today
NAXI DONGBA — EAST ASIA — 13 c — today
TAI THAM — SOUTHEAST ASIA — 13 c — today
NAXI GEBA — EAST ASIA — 13 c — today
TELUGU — SOUTH ASIA — 13 c — today
YEZIDI — MIDDLE EAST — ? — today
TIRHUTA — SOUTH ASIA — 13 c — today

Concept
Johannes Bergerhausen
Institut Designlabor
Gutenberg (IDG)
Hochschule Mainz
Germany

Research
Dr. Deborah Anderson
Script Encoding Initiative (SEI)
Department of Linguistics
UC Berkeley, USA

Type Design
Johannes Bergerhausen
Arthur Francietta
Jérome Knebusch
Morgane Pierson
ANRT, Nancy, France
2016 — 2019

Poster Design
Ilka Helmig, Johannes
Bergerhausen
Cologne, Germany, 2019
helmigbergerhausen.de

Printed at
Lézard Graphique
Brumath, France
2019

Second edition
400 copies
silkscreen printing
© Johannes
Bergerhausen
2019

Contact
the-missing-scripts@
anrt-nancy.fr
worldswritingsystems.org

Atelier National de Recherche Typographique (ANRT), Nancy, France
Institut Designlabor Gutenberg (IDG), Hochschule Mainz, Germany
Script Encoding Initiative (SEI), Department of Linguistics, UC Berkeley, USA

-35 c

LINEAR A
EUROPE
~18 c — ~15 c

PHAISTOS DISC
EUROPE
~18 c — ~14 c

CYPRO-MINOAN
EUROPE
~16 c — ~11 c

ANATOLIAN HIEROGLYPHS
MIDDLE EAST
~15 c — ~7 c

LINEAR B
EUROPE
~14 c — ~12 c

UGARITIC
MIDDLE EAST
~14 c — ~12 c

ORACLE BONE SCRIPT
EAST ASIA
~1300 — ~1050

-13 c

OLD SOUTH ARABIAN
MIDDLE EAST
~8 c — 7 c

TOCHARIAN
CENTRAL ASIA
~8 c — ~8 c

CARIAN
MIDDLE EAST
~7 c — ~3 c

LATIN
EUROPE
~7 c — today

PALAEOHISPANIC
EUROPE
~7 c — 1 c

DEMOTIC
AFRICA
~664 — 452

OLD NORTH ARABIAN
MIDDLE EAST
~350 c — 4 c

-6 c

HEBREW
MIDDLE EAST
~3 c — today

KHAROSHTHI
SOUTH ASIA
~3 c — 7 c

MAYAN HIEROGLYPHS
AMERICA
~300 — 1500

MEROITIC CURSIVE
AFRICA
~3 c — 4 c

MEROITIC HIEROGLYPHS
AFRICA
~3 c — 4 c

SAMARITAN
MIDDLE EAST
~3 c — today

SINHALA
SOUTH ASIA
~3 c — today

-3 c

INSCRIPTIONAL PAHLAVI
MIDDLE EAST
2 c — 5 c

INSCRIPTIONAL PARTHIAN
MIDDLE EAST
2 c — 292

CHORASMIAN
CENTRAL ASIA
2 c — 7 c

MANDAIC
MIDDLE EAST
2 c — today

TEOTIHUACAN
AMERICA
250 — 500

MANICHAEAN
MIDDLE EAST
3 c — 10 c

OLD SOGDIAN
CENTRAL ASIA
3 c — 6 c

3 c

KHOTANESE
CENTRAL ASIA
5 c — 11 c

OGHAM
EUROPE
5 c — 7 c

PYU
SOUTHEAST ASIA
5 c — 13 c

ARABIC
MIDDLE EAST
6 c — today

AVESTAN
MIDDLE EAST
6 c — today

CHALUKYA
SOUTH ASIA
6 c — 11 c

KHMER
SOUTHEAST ASIA
6 c — today

6 c

SOGDIAN
CENTRAL ASIA
7 c — 14 c

TAMIL
SOUTH ASIA
7 c — today

YI
EAST ASIA
7 c — today

ZHUANG SQUARE
EAST ASIA
7 c — 7

CHAKMA
SOUTH ASIA
8 c — today

HENTAIGANA
EAST ASIA
8 c — today

HIRAGANA
EAST ASIA
8 c — today

8 c

CHOLA
SOUTH ASIA
9 c — 12 c

OLD HUNGARIAN
EUROPE
9 c — today

DIVES AKURU
SOUTH ASIA
9 c — 20 c

KHITAN LARGE SCRIPT
EAST ASIA
920 — 1191

KHITAN SMALL SCRIPT
EAST ASIA
925 — 1191

CHAM
SOUTHEAST ASIA
10 c — today

RANJANA
SOUTH ASIA
10 c — today

10 c

MEETEI MAYEK
SOUTH ASIA
11 c — today

MYANMAR
SOUTHEAST ASIA
11 c — today

MIXTEC
AMERICA
1100 — 1519

JURCHEN
EAST ASIA
1120 — 16 c

ERSU SHABA
EAST ASIA
12 c — today

PHAGS-PA
CENTRAL ASIA
1260 — 1368

THAI
SOUTHEAST ASIA
1283 — today

13 c

TIGALARI
SOUTH ASIA

AZTEC PICTOGRAMS

OLD PERMIC
EUROPE

BATAK
SOUTHEAST ASIA

BUGINESE
SOUTHEAST ASIA

SUNDANESE
SOUTHEAST ASIA

SYLOTI NAGRI
SOUTH ASIA

14 c

BALTI A
SOUTH ASIA
1400 — 20 c

HANGUL
EAST ASIA
1444 — today

AHOM
SOUTH ASIA
15 c — today

BRUSHA
CENTRAL ASIA
15 c — ?

DOGRA
SOUTH ASIA
15 c — 20 c

LANDA
SOUTH ASIA
15 c — 20 c

PUNGCHEN
CENTRAL ASIA
15 c — 15 c

PUNGCHUNG
CENTRAL ASIA
15 c — 15 c

16 c

KHOJKI
SOUTH ASIA
16 c — today

LAO
SOUTHEAST ASIA
16 c — today

MARCHEN
CENTRAL ASIA
16 c — 20 c

MARCHUNG
CENTRAL ASIA
16 c — 20 c

MULTANI
SOUTH ASIA
16 c — 20 c

TAI VIET
SOUTHEAST ASIA
16 c — today

TAI YO
SOUTHEAST ASIA
16 c — 20 c

SOYOMBO
CENTRAL ASIA
17 c — 17 c

17 c

SHUISHU LOGOGRAMS
EAST ASIA
17 c — today

TAKRI
SOUTH ASIA
17 c — 20 c

ZANABAZAR SQUARE
CENTRAL ASIA
17 c — 17 c

LEPCHA
SOUTH ASIA
1720 — today

ELBASAN
EUROPE
1761 — ?

VESO BEY
EUROPE
late 18 c — early 19 c

TODHRI
EUROPE
1795 — 1805

BUHID
OCEANIA
18 c — today

18 c

RONGO RONGO
OCEANIA
18 c — 1860s

TAGBANWA
OCEANIA
18 c — today

THAANA
SOUTH ASIA
18 c — today

GABELSBERGER SHORTHAND
EUROPE
1817 — 1924 ?

BRAILLE
EUROPE
1821 — today

CHEROKEE
AMERICA
1821 — today

UNIFIED CANADIAN ABORIGINAL SYLLABICS
AMERICA
1830s — today

VAI
AFRICA
1830 — today

19 c

INTERNATIONAL PHONETIC ALPHABET
EUROPE
1886 — today

GREGG SHORTHAND
EUROPE
1888 — today

OLD BAMUM
AFRICA
1896 — 20 c

BAMUM
AFRICA
1896 — today

BALTI B
SOUTH ASIA
pre 20 c — ?

GANGGA MALAYU
SOUTH ASIA
19 c — early 20 c

KAIDA
EAST ASIA
19 c — 20 c

LIMBU
SOUTH ASIA
19 c — today

20 c

WOLEAI
OCEANIA
1905 — 1950s

BASSA VAH
AFRICA
1907 — today

AFÁKA
AMERICA
1908 — today

BAGAM
AFRICA
1910 — late 20 c

BOPOMOFO
EAST ASIA
1911 — today

LISU
EAST ASIA
1915 — today

ESKAYA
OCEANIA
1920 — 1937

MENDE KIKAKUI
AFRICA
1920 — today

MEDEFAIDRIN
AFRICA
1930s — today

TENGWAR
EUROPE
1930s — today

BORAMA
AFRICA
1933 — today

SORA SOMPENG
SOUTH ASIA
1936 — today

IBAN
SOUTHEAST ASIA
1947 — today

BLISSYMBOLS
AUSTRALIA
1949 — today

N'KO
AFRICA
1949 — today

BÉTÉ
AFRICA
1956 — today

PAHAWH HMONG
SOUTHEAST ASIA
1959 — today

NWAGU ANEKE IGBO
AFRICA
1960s — 1991

SHAVIAN
EUROPE
1960s — today

SHAVIAN QUIKSCRIPT
EUROPE
1960s — today

STOKOE
AMERICA
1960 — today

GARAY (WOLOF)
AFRICA
1961 — today

KAYAH LI
SOUTHEAST ASIA
1962 — today

BA (FULA 2)
AFRICA
1963 — today

BERIA
AFRICA
1980s — today

MRO
SOUTH ASIA
1980s — today

NYIAKENG PUACHUE HMONG
SOUTHEAST ASIA
1980s — today

TOLONG SIKI
SOUTH ASIA
late 20 c — today

HAMNOSYS
EUROPE
1985 — today

KLINGON
AMERICA
1987 — today

NAASIOI
OCEANIA
1988 — today

RAINA KAMA (HAUSA 2)
AFRICA
1990s — today

JENTICHA
SOUTH ASIA
20 c — today

KHAMBU RAI
SOUTH ASIA
20 c — today

KHAMTI
SOUTHEAST ASIA
20 c — today

KIRAT RAI
SOUTH ASIA
20 c — today

KULITAN
OCEANIA
20 c — today

MAGAR AKKHA
SOUTH ASIA
20 c — today

MASARAM GONDI
SOUTH ASIA
20 c — today

NASU
EAST ASIA
20 c — today

21 c

TANI
SOUTH ASIA
2001 — today

WANCHO
SOUTH ASIA
2001 — today

OSAGE
AMERICA
2006 — today

BADAGA
SOUTH ASIA
2009 — today

LUO
AFRICA
2009 — today


SIRMAURI
SOUTH ASIA
15 c — 20 c
TAGALOG
OCEANIA
15 c — today
KANNADA
SOUTH ASIA
1500 — today
GUJARATI
SOUTH ASIA
1592 — today
GURMUKHI
SOUTH ASIA
16 c — today
KAITHI
SOUTH ASIA
16 c — 20 c
KHATT-I BABURI
CENTRAL ASIA
16 c — ?
16 c
BHUJINMOL
SOUTH ASIA
17 c — 20 c
JAVANESE
SOUTHEAST ASIA
17 c — today
KARANI
SOUTH ASIA
17 c — 20 c
KERINCI
SOUTHEAST ASIA
17 c — 20 c
LAMPUNG
SOUTHEAST ASIA
17 c — 20 c
MICMAC HIEROGLYPHS
AMERICA
17 c — 20 c
MODI
SOUTH ASIA
17 c — today
17 c
GUNJALA GONDI
SOUTH ASIA
18 c — today
HANUNOO
OCEANIA
18 c — today
LONTARA BILANG BILANG
SOUTHEAST ASIA
18 c — 20 c
MAKASAR
SOUTHEAST ASIA
18 c — 20 c
MINANGKABAU
SOUTHEAST ASIA
18 c — 18 c
OLD MINAHASA
SOUTHEAST ASIA
18 c — 18 c
REJANG
SOUTHEAST ASIA
18 c — today
18 c
PITMAN SHORTHAND
EUROPE
1837 — today
MOON
EUROPE
1845 — today
DESERET
AMERICA
1850 — 1869
DUPLOYAN
EUROPE
1860 — today
LEKE
SOUTHEAST ASIA
1860 — today
VISIBLE SPEECH
EUROPE
1867 — 20 c
KHUDAWADI
SOUTH ASIA
1868 — 20 c
19 c
MAHAJANI
SOUTH ASIA
19 c — 20 c
NÜSHU
EAST ASIA
19 c — today
SAURASHTRA
SOUTH ASIA
19 c — today
VITHKUQI
EUROPE
19 c — 19 c
PAU CIN HAU
SOUTHEAST ASIA
1902 — today
PAU CIN HAU LOGOGRAPHS
SOUTHEAST ASIA
1902 — today
MIAO
EAST ASIA
1904 — today
20 c
OSMANYA
AFRICA
1920 — 1973
OL CHIKI
SOUTH ASIA
1920s — today
KHOM
SOUTHEAST ASIA
1924 — 1956
MASABA
AFRICA
1930 — today
CIRTH
EUROPE
1930s — today
KPELLE
AFRICA
1930s — today
LOMA
AFRICA
1930s — today
20 c
UNIFON
AMERICA
1950s — today
WARANG CITI
SOUTH ASIA
1950s — today
KADDARE
AFRICA
1952 — today
ZOU
SOUTH ASIA
1952 — today
TAI LE
SOUTHEAST ASIA
1954 — today
FULA DITA (FULA 1)
AFRICA
1958 — today
PAHAWH HMONG FIRST STAGE
SOUTHEAST ASIA
1959 — end of 20 c
20 c
SUTTON SIGNWRITING
AMERICA
1974 — today
TAFI (HAUSA 3)
AFRICA
1977 — today
EEBEE HMONG
SOUTHEAST ASIA
1978 — today
MANDOMBE
AFRICA
1978 — today
MWANGWEGO
AFRICA
1979 — today
ADLAM
AFRICA
1980s — today
AVOIULI
OCEANIA
1980s — today
20 c
SALIFOU HAUSA (HAUSA 1)
AFRICA
1998 — today
COORGI-COX
SOUTH ASIA
20 c — today
DHIMAL
SOUTH ASIA
20 c — today
GURUNG (KHE PHRI)
SOUTH ASIA
20 c — today
GURUNG (KHEMA)
SOUTH ASIA
20 c — today
HANIFI ROHINGYA
SOUTHEAST ASIA
20 c — today
ISIBHEQE SOHLAMVU
AFRICA
20 c — today ?
20 c
NEW TAI LUE
SOUTHEAST ASIA
20 c — today
NISU
EAST ASIA
20 c — today
TANGSA (KHIMHUN)
SOUTH ASIA
20 c — today
TANGSA (MOSSANG)
SOUTH ASIA
20 c — today
TIKAMULI
SOUTH ASIA
20 c — today
CHUXIONG YI
EAST ASIA
20 c — today
SANI YI
EAST ASIA
20 c — today
20 c
21 c

— The Missing Scripts — *The African legacy in the Afáka writing system*
— The Missing Scripts — *L'héritage africain dans le système d'écriture Afáka*

Auteur :
Émilie Aurat
Partenariat :
Atelier National de Recherche Typographique, SEI Berkeley
Remerciement :
Deborah Anderson, Johannes Bergerhausen, Jérémie Hornus, Thomas Huot-Marchand, Jérôme Knebusch, Charles Mazé, André Pakosie, Émilie Rigaud, Alice Savoie

Émilie Aurat is a French student in graphic design and typography. She joined ANRT and the Missing Script program in 2018. Interested in the issues of an African legacy in contemporary art and design, she specifically studies the African diasporas' writing systems, and the social impact of their integration to Unicode.

Émilie Aurat est un étudiante française en design graphique et typographique. Elle intègre l'ANRT et le programme Missing Script en 2018. Intéressée par les enjeux d'un héritage africain dans l'art et le design contemporain, elle étudie spécifiquement le cas des jeunes systèmes d'écriture de la diasporas africaine et l'impact social de leur intégration à l'Unicode.

Les systèmes d'écritures africain

L'histoire des systèmes d'écritures africains peut être séparée en deux périodes. La première regroupe les premiers temps de l'écriture, jusqu'au XIVe s. La seconde débute à partir de 1800 et comprend jusqu'à aujourd'hui une trentaine de systèmes d'écritures. Cette recrudescence correspond à une période de décolonisation et d'indépendance entre les populations dominées et dominantes. Les systèmes d'écritures créés durant cette période sont marqués par ces problématiques identitaires. Certains, comme le système d'écriture Medefaidrin sont inspirés et adaptés de languages écrits antérieur suite à un souhait d'émancipation culturelle. Certains créateurs, comme l'artiste et auteur du Bété, Frédéric Bruly Bouabré, ont la volonté de créer un système d'écriture spécifique aux cultures de la diaspora africaine. Leurs disparitions sont aussi le résultat d'une politique culturelle. Le système d'écriture Afáka, sur lequel se base ce projet de recherche, est familier aux systèmes d'écritures situés à l'ouest du continent, appelés Mende, et partage beaucoup de similarités formelles avec le Vaï.

Le système d'écriture Afáka

L'histoire de l'Afáka est représentative de cet héritage africain. Ce syllabaire a été créé au Suriname vers 1900 pour le dialecte Ndjuka, un créole anglais. Son créateur, Afáka Atumisi, fait parti de la tribu marronne des Ndjuka. D'après la légende, il aurait eu l'idée de créer un système d'écriture au cours d'un songe pendant lequel un homme le lui aurait ordonné. C'est en 1908, lors du passage de la Comète de Halley, qu'il décide de le diffuser, prenant cet événement céleste comme un signe. Il est le premier *Edebukuman* (littéralement «*Head-Book-Man*», le grand connaisseur du système d'écriture) d'une tradition écrite qui perdure encore. Les archives de missionnaires rapportent qu'ils rencontrèrent Afáka Atumisi afin de diffuser leur textes religieux. Toutefois les Ndjukas revendiquent une identité Marron fondée sur leur résistance aux colonialismes. Leur société est construite autour de la problématique d'intégrer ou non la culture occidentale. La reprise de l' Afáka par des missionnaires n'est donc pas bien accueillie par la hiérarchie des Ndjuka qui décide de l'interdire.

Aujourd'hui l'Afáka est utilisé par 5% des 50 000 usagers de la langue Ndjuka. L'enjeu de son encodage et de son dessin typographique interroge le futur d'une culture développée dans le contexte colonial. L'intégration et la diffusion de l'Afáka dans les outils numérique permettra-t-il sa visibilité et sa survie? Ce projet de recherche cherche à fixer au mieux les premières formes de cette intégration. Le design de l'Afáka s'est donc déroulé aux plus proches des sources et des conseils du spécialiste et actuel *Edebukuman* André Pakosie.

1. **Familiarity between Afáka and Vai writing Systems**
Source extracted from «Het Afákaschrift van de Tapanahoni in Suriname» C.N. Dubelaar & Andre R.M. Pakosie, 1999
2. **Map of the African West Coast populations**
Source extracted from «Who were the Vai?» in The Journal of African History, A. Jones, 1981
3. **Mende Writing Systems Family**
Source extracted from « Histoire de l'écriture » Louis-Jean Calvet, Paris, Plon, 1996

1. **Familiarités entre les system d'écriture Afáka et Vai**
Source extraite de «Het Afákaschrift van de Tapanahoni in Suriname» C.N. Dubelaar & Andre R.M. Pakosie, 1999
2. **Carte des populations de la Côte Ouest Africaine**
Source extraite du chapitre «Who were the Vai» dans The Journal of African History, A. jones, 1981
3. **Famille des systèmes d'écritures Mende**
Source extraite de « Histoire de l'écriture » Louis-Jean Calvet, Paris, Plon, 1996

African writing systems

The History of African writing system can be separate in two periods. The first one is the beginning of writing until the 3000c. The second starts from 1800 and involves about thirty writing systems. This intense phase of creation was directly connected to the period of decolonization that simultaneously took place in Africa. The writing systems developed during this period are representatives of this identity issues. Some of them, like Medefaidrin writing system, are inspired and adapted from older scripts, and directly stem from people's desire to emancipate themselves. Some creators, like Frédéric Bruly Bouabré who created the Bete wanted to develop writing systems specifically for the African diaspora. The Afáka writing system, which form the basis of this research project, is connected to many of these African writing systems, specifically the ones from the West which are part of the Mende language family. It shares a lot of similarity with the Vaï writing system.

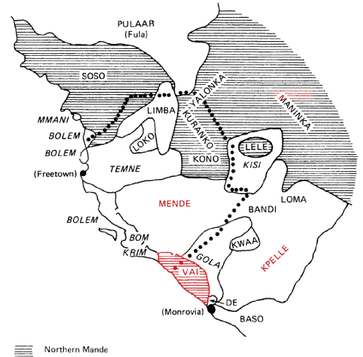
Afáka writing system

The Afáka writing systems provides an excellent example of the history underlying the creation of many African writing systems. This syllabary was created in Suriname, around 1900, to write the Ndjuka dialect, an English Creolian language. Its creator, Afáka Atumisi, is part of the Marroon tribe called the Ndjuka. The story says that Afáka Atumisi dreamt of a man who asked him to design a writing system. He then drew each glyph one by one. In 1908, when the Halley's comet passed through the sky, Afáka Atumisi took this as a sign to spread the Afáka writing system. Atumisi was the first *Edebukuman* (Literally « Head-Book-Man », the great specialist of the writing system) of this writing tradition, a role that still exist today. Missionaries' archives report that they started to meet Afáka Atumisi because of their interest for the script, as a mean to spread their religious texts. However, the Maroon identity of the Ndjuka people was built on their wish to resist colonialism, which was still embodied by missionaries. Their society was built around the issue of integrating or rejecting the dominant culture. The idea that missionaries could use their new script to spread their ideas didn't please the Ndjuka... They decided to ban it.

Today, the Afáka writing system is used by around 5% of the 50.000 users of the Ndjuka language. The issue of the encodage and typeface design raises questions about the future of this culture which was developed in a colonial context. What would be the consequences of its circulation in a digital form for its visibility and its survival? The goal of this research is to establish the basis of Afaka's digital form. The design of the Afaka typefaces is based on historical sources and follows the guidelines set out by the specialist and current *Edebukuman* André Pakosie.

	AFAKA-SCHRIFT		VAI-SCHRIFT				
	klank-waarde	teken	teken Koelle	teken Forbes	teken Delafosse	teken Lib.Univ.	klank-waarde
1	bi			–	–	–	ku
2	bo			–	–	–	ŋde
3	fa						fa,va
4	fi			–	–	–	dòn
5	fo			–	–	–	to
							kyó
6	ja						ki
							ngi
7	ka				–	–	tu
8	ke						gba
9	ki			–	–	–	gbe
							kpe
10	kloe:		–	–	–		ne
11	la(ra)						la(ra)
12	le(li)		–		–	–	è
13	ne		+	+	+	–	ñgbe
14	nja					–	ñgã
							nka
15	o		–	–		–	tã
16	pi		–		–	–	dó
17	po		–		–	–	fó
18	sa						a
19	te			–	–		lu(ru)

1



2

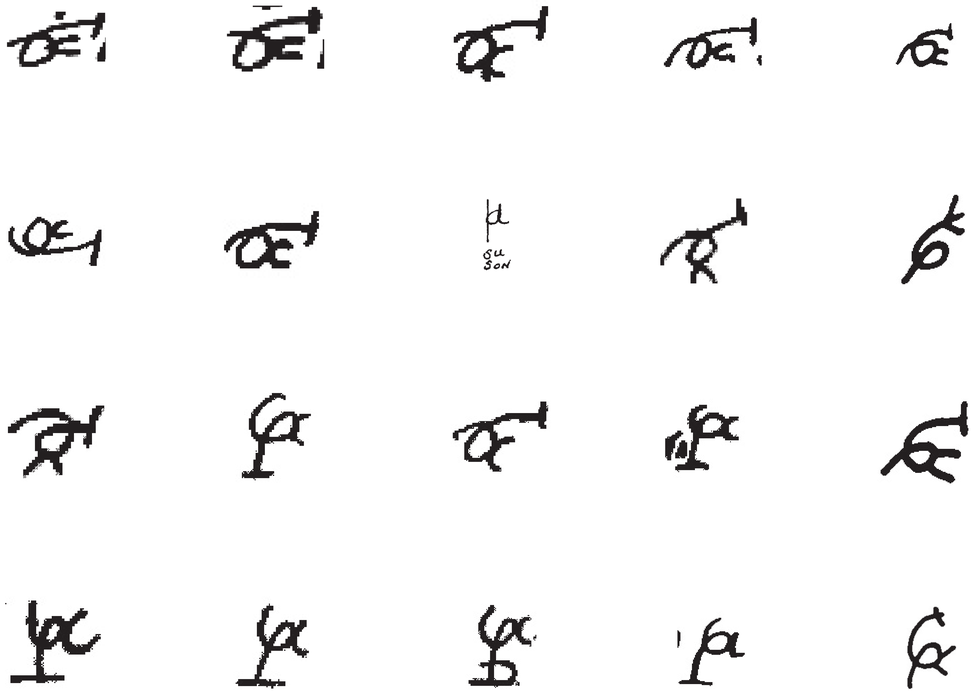
3

1. **List of the Afáka symbols in alphabetical order (Dubelaar & Gonggryp 1968:243)**
Source extraite de «Kago Buku: Notes By Captain Kago From Tabiki, Tapanahoni River, Suriname,Written In Afáka Script», C.N. Dubelaar et André Pakosie 1993

	a	e	i	o	oe
	1 [a:]	2 [e]	3 [i:]	4 [ɔ]	5 [u]
b	6 [ba:]	7 [be]	8 [bi:]	9 [bɔ]	=9 [bu]
d	10 [da:]	11 [de]	12 [di:]	13 [dɔ]	=13 [du]
dj				14 [djɔ]	=14 [dju]
f	15 [fa:]	16 [fe]	17 [fi:]	18 [fɔ]	=18 [fu]
g	19 [ga:]	20 [ge]	21 [gi:]	22 [gɔ]	=22 [gu]
j	23 [ja:]	24 [je]			25 [ju]
k	26 [ka:]	27 [ke]	28 [ki:]	29 [kɔ]	=5 [ku]
kw	30 [kwa:]				
l=r	31 [la:]	32 [le]	=32 [li:]	33 [lɔ]	=33 [lu]
m	34 [ma:]	35 [me]	=35 [mi:]	36 [mɔ]	=36 [mu]
n	37 [na:]	38 [ne]	39 [ni:]	40 [nɔ]	=40 [nu]
nj	41 [nja:]				
p	=6 [pa:]	42 [pe]	43 [pi:]	44 [pɔ]	45 [pu]
s	46 [sa:]	47 [se]	=47 [si:]	48 [sɔ]	=48 [su]
t	49 [ta:]	50 [te]	51 [ti:]	52 [tɔ]	53 [tu]
tj	54 [tja:]				
w	55 [wa:]	56 [we]	=56 [wi:]		

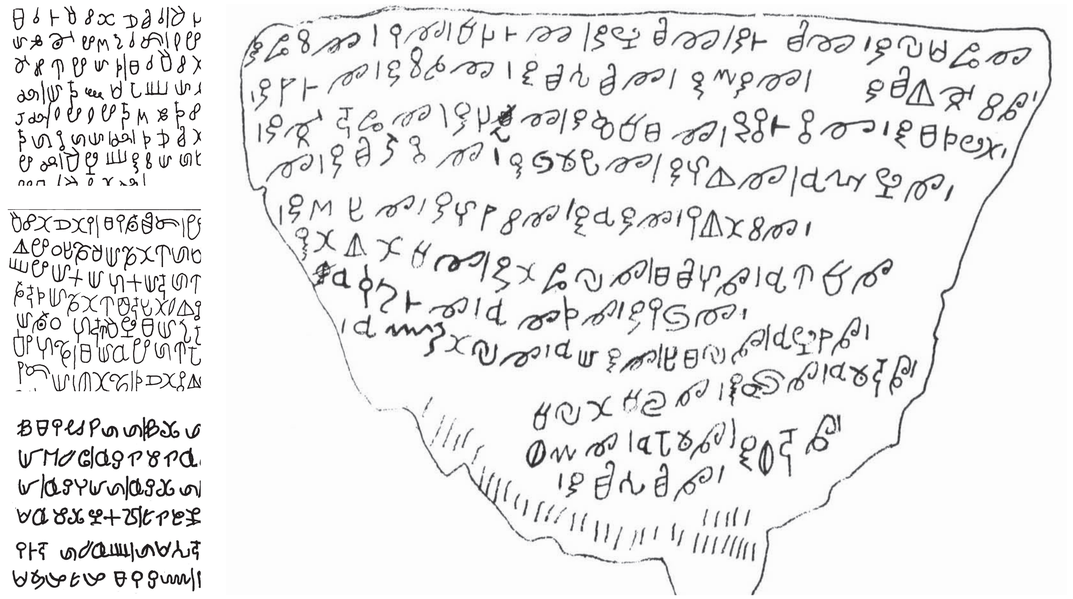
1. **List of the Afáka symbols in alphabetical order (Dubelaar & Gonggryp 1968:243)**
Source extracted from «Kago Buku: Notes By Captain Kago From Tabiki, Tapanahoni River, Suriname,Written In Afáka Script», C.N. Dubelaar and André Pakosie, 1993

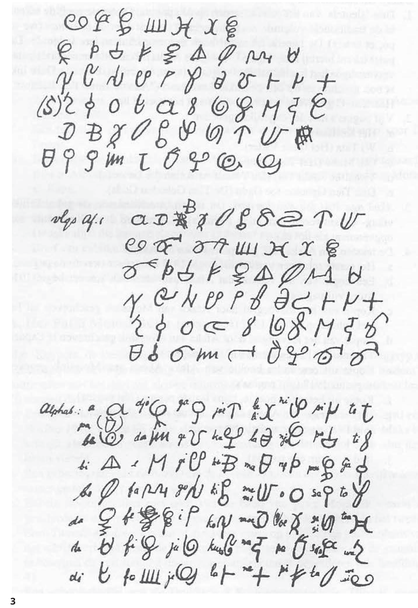
5

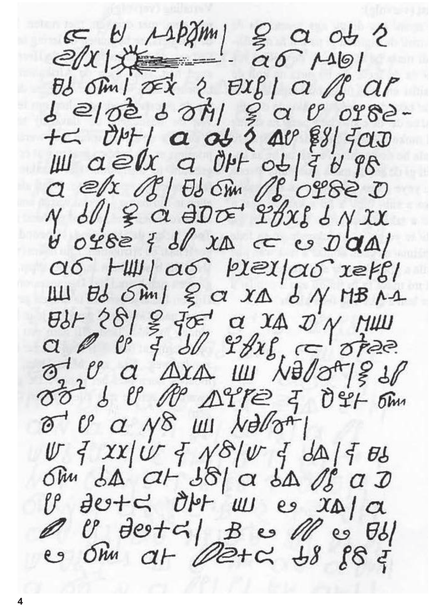


1

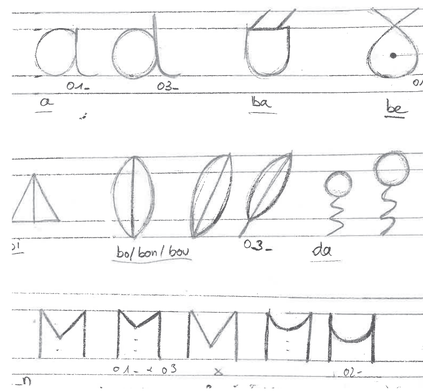
2



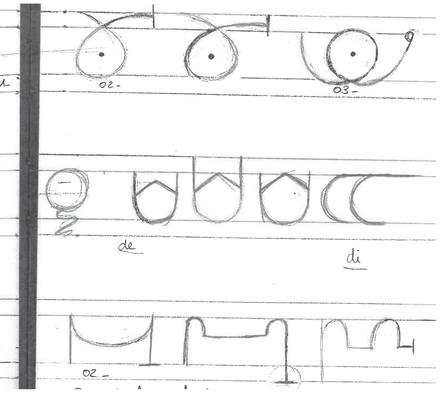




3



4



5

1. **Source's sample**
Sources extracted from «Kago Buku: Notes By Captain Kago From Tabiki, Tapanahoni River, Suriname,Written In Afáka Script» , C.N. Dubelaar and André Pakosie, 1993, and «Seven notes in Afáka script», C.N. Dubelaar and André Pakosie, 1988
2. **An Enumeration of the Inhabitants of the Village of Saaje.**
Source extracted from «Kago Buku: Notes By Captain Kago From Tabiki, Tapanahoni River, Suriname,Written In Afáka Script» , 1993
3. **The Creation of the Afáka writing system**
Source extracted from « Proposal for encoding the Afáka script in the SMP of the UCS », 2011
4. **Three alphabetical orders for the Afáka script drawn by C. Morssink**
Source extracted from « Proposal for encoding the Afáka script in the SMP of the UCS », 2011
5. **First drawing of Afáka's glyphs**
Émilie Aurat, Nom de l'oeuvre, 2019

1. **Échantillon des sources**
Sources extraites de «Kago Buku: Notes By Captain Kago From Tabiki, Tapanahoni River, Suriname,Written In Afáka Script», C.N. Dubelaar et André Pakosie, 1993, et «Seven notes in Afáka script», C.N. Dubelaar et André Pakosie, 1988
2. **An Enumeration of the Inhabitants of the Village of Saaje.**
Source extraite de «Kago Buku: Notes By Captain Kago From Tabiki, Tapanahoni River, Suriname,Written In Afáka Script» , C.N. Dubelaar et André Pakosie 1993
3. **The Creation of the Afáka writing system**
Source extraite de « Proposal for encoding the Afáka script in the SMP of the UCS », Mickaël Everson, 2011
4. **Three alphabetical orders for the Afáka script drawn by C. Morssink**
Source extraite de « Proposal for encoding the Afáka script in the SMP of the UCS », Mickaël Everson, 2011
5. **First drawings of Afáka's glyphs**
Émilie Aurat, Nom de l'oeuvre, 2019

1

2

1. **An Enumeration of the Inhabitants of the Village of Saaje.**
Afáka Decode Blockdock, fonte designed by Émilie Aurat, 2020
2. **The Creation of the Afáka writing system**
Afáka Decode Blockdock, fonte designed by Émilie Aurat, 2020

1. **An Enumeration of the Inhabitants of the Village of Saaje.**
Afáka Decode Blockdock, fonte dessinée par Émilie Aurat, 2020
2. **The Creation of the Afáka writing system**
Afáka Decode Blockdock, fonte dessinée par Émilie Aurat, 2020

AFRICAN WRITING SYSTEMS
LES SYSTÈMES D'ÉCRITURES AFRICAINS

Historical scripts encoded in Unicode 12.0
Systèmes d'écritures historiques encodés dans l'Unicode 12.0
Historical scripts not yet encoded in Unicode 12.0
Systèmes d'écritures historiques non-encodés dans l'Unicode 12.0

Living scripts encoded in Unicode 12.0
Systèmes d'écritures vivants encodés dans l'Unicode 12.0
Living scripts not yet encoded in Unicode 12.0
Systèmes d'écritures vivants non-encodés dans l'Unicode 12.0

This poster, which presents one glyph for each script from the African continent, is derived from the World's Writing System poster.
The World's Writing Systems poster is the first step of the Missing Scripts Project, a long-term initiative that aims to identify writing systems which are not yet encoded in the Unicode standard. As of today, there are still 146 scripts not yet encoded in Unicode.
The Missing Scripts Project is a joint effort of Atelier National de Recherche Typographique (ANRT), Nancy, Hochschule Mainz, Germany (DDC), and Script Encoding Initiative (SEI), Berkeley.
The glyphs were drawn at ANRT, Nancy, France.

Ce poster est une version du poster World's Writing Systems concentrée sur le continent africain.
Le poster World's Writing Systems est la première étape du programme Missing Script, un projet au long terme qui tend à identifier les systèmes d'écritures qui ne sont pas encore intégrés à l'Unicode. Aujourd'hui, 146 scripts ne sont pas encore encodés.
Le Projet Missing Scripts joint les travaux de l'Atelier National de Recherches Typographiques (ANRT) à Nancy, Hochschule Mainz en Script Encoding Initiative (SEI), à Berkeley.
Les glyphes ont été dessinés à l'ANRT, à Nancy.

Ancient writing systems : — 30 c — 14 c
Anciens systèmes d'écritures : — 3000 au XIV^e s

–30 c

EGYPTIAN HIEROGLYPH
–30 c — 1 c
Egypt

HIERATIC
–2900 — 200
Egypt

DEMOTIC
–650 — today
Egypt

ETHIOPIC
–4 c — today
Ethiopia and Eritrea

MEROITIC CURSIVE
–3 c — –4 c
North of actual Soudan

–3 c

MEROITIC HIEROGLYPH
–3 c — –4 c
North of actual Soudan

NUMIDIAN
–2 c — –3 c
Numidia

TIFINAGH
3 c — today
North Africa

COPTIC
4 c — 14 c
Egypt

14 c

Modern writing systems: 1830 — 2009
Systèmes d'écritures modernes : 1830 à 2009

1830

VAI
1830 — today
Liberia

OLD BAMUN
1896 — 20 c
Western Cameroon

BAMUN
1896 — today
Western Cameroon

ISIBHEQE SOHLAMVU
20 c — today
Southern Africa

BASSA VAH
1907 — today
Liberia, Sierra Leone, Brazil, Caribbean

1910

BAGAM
1910 — LATE 20 c
Western Cameroon

OSMANYA
1920 — 1973
Somalia

MENDE KIKAKUI
1920 — today
Sierra Leone

KPELLE
1930 — today
Liberia

LOMA
1930 — today
Liberia, Nigeria

1930

MASABA
1930 — today
Liberia, Nigeria

MEDEFAIDRIN
1930 — today
Nigeria

BORAMA
1933 — today
Northern Somalia

N'KO
1949 — today
Gambia

BETE
1950 — today
Central and Western Ivory Coast

1950

KADDARE
1952 — today
Somalia

FULA DITA (FULA 1)
1958 — today
Mali

NWAGU ANEKE IGBO
1960 — 1991
Southeastern Nigeria

GARAY (WOLOF)
1961–today
Senegal

BA (FULA2)
1963 — today
Mali

1970

TAFI (HAUSA3)
1977 — today
Southern Niger, Northern Nigeria

MANDOMBE
1978 — today
Congo

MWANGWEGO
1920 — today
Malawi

ADLAM
1980 — today
Guinea

BERIA
1980 — today
Chad, Sudan

1990

RAINA KAMA (HAUSA 2)
1990 — today
Southern Niger, Northern Nigeria

SALIFOU HAUSA (HAUSA1)
1998 — today
Southern Niger, Northern Nigeria

LUO
2009 — today
Kenya, Tanzania

2010

Graphic design: Émilie Aurat, ANRT researcher on the Missing Scripts Programme, 2018/2020.
The glyphs presented on this poster were drawn by Arthur Franchetta (Missing Scripts 2018/2019) and Morgane Pierson (Missing Scripts 2017/2019).

Latin typeface: Fedra Sans, Peter Bilak.
Printing: Apache Color (Nancy).

1

1. **Poster of the African Writing Systems**
Émilie Aurat, The African Writing Systems, 2019

1. **Poster des African Writing Systems**
Émilie Aurat, The African Writing Systems, 2019

— Missing scripts
— The Mayan Encoding Project

Auteur :
Alexandre Bassi
Partenariat :
Atelier National de Recherche Typographique, SEI Berkeley
Remerciement :
Deborah Anderson, Johannes Bergerhausen, Thomas Huot-Marchand, Carlos Pallán Gayol, Jérémie Hornus, Jérôme Knebusch, Charles Mazé, Émilie Rigaud, Alice Savoie

Alexandre Bassi est créateur de caractères. Il a rejoint l'Atelier Nationale de Recherche Typographique et le projet Missing Scripts en 2019 en vue d'offrir des solutions typographiques à la recherche dans le déchiffrement du système d'écriture maya grâce à son intégration à l'Unicode.

Alexandre Bassi is a type designer. He joined the Atelier Nationale de Recherche Typographique and the Missing Scripts project in 2019 in order to offer typographic solutions to research in the deciphering of the Mayan writing system through its Unicode integration.

Fr **Le système d'écriture maya**

Le système d'écriture maya remonte approximativement au IIIe siècle av J-C. Il s'est répandu en Amérique du Sud dans la péninsule du Yucatán, du sud du Mexique actuel au nord du Salvador et de l'Honduras. Cette écriture a été brutalement interrompue par l'arrivée de colons occidentaux lors de la conquête de l'Amérique en 1492.

Cette colonisation entraîna la disparition de ce système d'écriture provoquée par la répression inquisitoriale du catholicisme qui obligea les tribus autochtones à utiliser l'alphabet latin en détruisant toute trace de leur écriture première. Celle-ci tomba rapidement dans l'oubli jusqu'à ce qu'elle ne soit réduite pendant très longtemps qu'à une fonction purement décorative ; bien que le lien entre l'art et les hiéroglyphes semble indéniable[1].

De ce fait, le déchiffrage a été très tardif et il faudra attendre la seconde partie du XXe siècle pour enfin comprendre la complexité de ces hiéroglyphes, qui reste cependant incomplet à cette heure. La grande difficulté de l'écriture maya a été de comprendre devant quel genre de système nous étions confrontés. On parle alors d'un système logosyllabique, qui se caractérise par l'utilisation conjointe de logogrammes[2] et d'un syllabaire phonétique[3]. En effet, un glyphe peut représenter un mot, une idée ou un concept, mais aussi des symboles phonétiques, où un signe fait référence à une syllabe. De plus, de nombreux glyphes sont allographiques[4], ce qui signifie qu'une multitude de signes différents peuvent être utilisés pour exprimer le même mot.

Le sens de lecture[5] spécifique des textes mayas a aussi été un frein à la compréhension de cette écriture puisqu'il s'effectue par colonnes de deux signes, lu de gauche à droite et de haut en bas. Les hiéroglyphes se composent également dans cet ordre, sous la forme de blocs, en utilisant un ou plusieurs signes syllabiques, logographiques et parfois même les deux à la fois.

Cette écriture semble également varier selon le support tant dans son style graphique induit par l'outil utilisé que dans le sujet traité. Les hiéroglyphes gravés dans la pierre[6] sont très ornementés et géométriques, relataient surtout des faits historiques liés aux règnes des rois, de leurs succès militaires jusqu'à leurs mort. Tandis que les textes issus des quatre codex mayas ayant survécus aux flammes répressives coloniales, employaient un style plus relâché et simplifié[7]. Ils content les événements calendaires et astronomiques qui rythmaient la vie de la cité.

Au-devant de la complexité de ce système d'écriture, les hiéroglyphes mayas ne sont pas encore intégrés dans le système Unicode. Le but de ce projet sera donc de développer une solution typographique permettant la diffusion et l'utilisation numérique du système d'écriture maya. Cela offrira un outil permettant de faciliter et harmoniser la diffusion de recherches sur ce sujet, mais plus généralement de mieux comprendre et faire perdurer cette culture[8].

En **The Mayan writting system**

The Mayan writing system dates back approximately to the 3rd century BC. It spread in South America in the Yucatán Peninsula, from the south of present-day Mexico to the north of El Salvador and Honduras. This writing was brutally interrupted by the arrival of western settlers during the conquest of America in 1492.

This colonisation led to the extinction of this writing system caused by the inquisitorial repression of Catholicism, which forced the indigenous tribes to use the Latin alphabet, destroying all traces of their original writing. The original script soon fell into oblivion until it was reduced for a very long time to a purely decorative function, although the link between art and hieroglyphics seems undeniable[1].

As a result, the deciphering was very late and it was not until the second half of the 20th century that the complexity of these hieroglyphs was finally understood, although it remains incomplete at this time. The great difficulty of Mayan writing was to understand what kind of system we were facing. We speak then of a logosyllabic system, which is characterised by the use of both logograms[2] and a phonetic syllabary[3]. Indeed, a glyph can represent a word, an idea or a concept, but also phonetic symbols, where a sign refers to a syllable. In addition, many glyphs are allographic[4], which means that a large number of different signs can be used to express the same word. The specific reading direction[5] of Mayan texts has also been an obstacle to the comprehension of this writing since it is written in columns of two signs, read from left to right and from top to bottom. The hieroglyphs are also composed in this order, in blocks, using one or more syllables, logographs and possibly both at the same time.

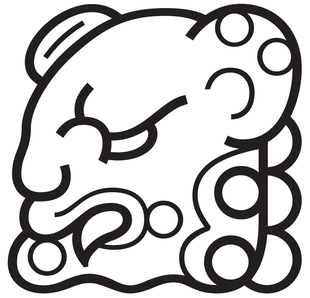
This writing also seems to vary according to the support both in its graphical style induced by the tool used and in the subject matter. The hieroglyphs carved[6] in the stone are highly ornate and geometric, relating mainly historical facts related to the reigns of kings, from their military successes to their deaths. While the texts from the four Mayan codices that survived the repressive colonial flames used a more relaxed and simplified style[7]. They relate calendar and astronomical events that punctuated the city's life.

Ahead of the complexity of this writing system, Mayan hieroglyphics are not yet integrated into the Unicode system. The aim of this project will therefore be to develop a typographic solution allowing the digital diffusion and use of the Mayan writing system. This will provide a tool to facilitate and harmonise the dissemination of research on this subject, but more generally to better understand and perpetuate this culture[8].

1. Illustration basée sur la page 27 du codex de Dresden, représentant un rituel effectué par un prêtre, ici déguisé en dieu de la mort, au cours des cinq derniers jours de l'année solaire.

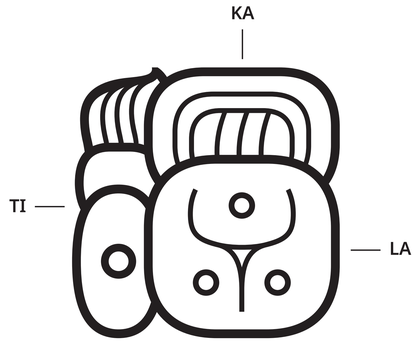
   Illustration based on page 27 of the Dresden codex, where it appears that the ritual by a priest, here disguised as a god of death, during the last five days of the solar year.

   Alexandre Bassi,
   The Mayan Encoding Project,
   2020

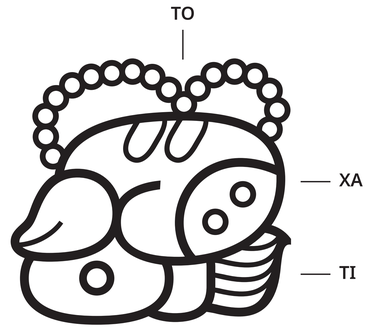


B'ALAM(A)
jaguar, se cacher
jaguar, hidden

YAL(A)
sa récolte, l'enfant (d'une mère)
her harvest, child (of mother)

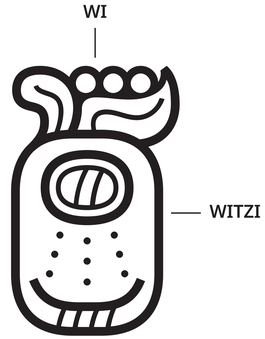


TIKAL(A)
s'enivrer (de)
to get drunk (on)

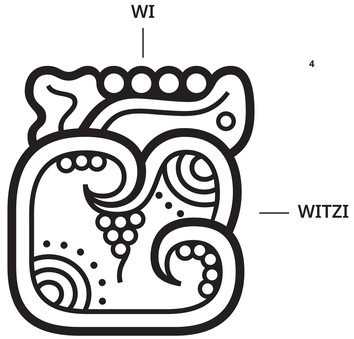


TOXAT(I)
pénis sanguinolent
bled penis

WITZ(I)
montagne
mountain



WITZ(I)
montagne
mountain



WITZ(I)
montagne
mountain

2. Hiéroglyphes logographiques : ici les mots jaguar et sa récolte. On remarque que les Mayas avaient une vision métaphorique du monde qui les entouraient. Ils pouvaient utiliser un glyphe pour plusieurs sens : Le jaguar se cache pour chasser ou l'enfant d'une mère assimilé à une récolte.

   Logographic hieroglyphs : here the words jaguar and its harvest. We notice that the Maya had a metaphorical vision of the world around them. Indeed, they could use the same glyph with several meanings : The jaguar hiding to hunt or the child of a mother assimilated to a harvest.

3. Hiéroglyphes syllabiques : ici, le mot tikal écrit « tikala » composé avec les syllabes « ti-ka-la ». Et le deuxième glyphe « toxat » écrit «toxati» avec les signes « to-xa-ti ». On peut remarquer ces deux hiéroglyphes utilisent la syllabe « ti » mais retournée à 90 degrés.

   Syllabic hieroglyphs : here, the word tikal writes "tikala" composed of the syllables "ti-ka-la". And the second glyph "toxat" spelled «toxati» with the signs "to-xa-ti". We can notice these two hieroglyphs use the syllable "ti" but returned at 90 degrees.

4. Variation d'un hiéroglyphe : ici « witz » signifiant montagne écrit logographiquement et représentant l'esprit de la montagne, son équivalent syllabique «wi-tzi», et le dernier en utilisant les deux «wi-witzi». Les scribes aimaient jouer avec les variations picturales des mots.

   Variation of a hieroglyph : here the word "witz" which means mountain written logographically and representing the spirit of the mountain, its syllabic equivalent "wi-tzi", and the last one using both "wi-witzi". The scribes liked to play with pictural variations of words.

5

6

5. Stèle 47 composée en calcaire à grain fin, du site archéologique de Yaxchilan situé dans la partie orientale de l'État du Chiapas au Mexique. On remarque ici la composition des textes mayas sont composés en colonne de deux hiéroglyphes.

Stele 47 made of fine grained limestone from the archaeological site of Yaxchilan in the eastern part of the state of Chiapas in Mexico. We can noticed the composition in column of two hieroglyphs.

Mostardi Photography, National Museum of Anthropology of Mexico City, Mexico,

6. Hiéroglyphes mayas provenant des fouilles archéologiques du projet Tonina par Juan Yadeun. Celles-ci ont révélé un grand nombre de hiéroglyphes en stuc confondu avec l'architecture des édifices du site.

Mayan hieroglyphs from the archaeological excavations of the Tonina Project by Juan Yadeun. These have revealed a large number of stucco hieroglyphs that merged with the architecture of the buildings.

Joaquín Otero Ubeda, National Museum of Anthropology of Mexico City, Mexico

7

7. Page 41, 42 du codex de Dresden retraçant du voyage du dieu de la pluie et de Mars. Ce calendrier prophétique contenait des affirmations sur le temps qu'il faisait et la récolte, et servait également de guide pour les cultures.

Page 41, 42 of the Dresden codex: retracing the journey of the god of rain and Mars. This prophetic calendar contained statements about the weather and the harvest, and also served as an guide for crops.

Dresden Codex
9 x 20,5 x 356 cm
Museum of the Saxon State Library.

7

7. **Pages 48, 49 du codex de Dresden illustrant la divinité Vénus avec l'apparition de cette même planète. Elle était considérée comme une divinité agressive et le calendrier de Vénus était probablement utilisé pour calculer le succès des campagnes militaires.**

Pages 48, 49 of the Dresden codex illustrating the divinity Venus with the appearance of this planet. She was considered as an aggressive deity and the calendar of Venus was probably used to calculate success military campaigns.

Dresden Codex
9 x 20,5 x 356 cm
Museum of the Saxon State Library.

8. **Le hiéroglyphes du chiffre zéro, prononcé « mi-hi » inspiré du dessin du chercheur David Stuart tiré de la stèle 63 du site archéologique de Copán à l'extrémité ouest de l'Honduras. Un exemple de la complexité de l'écriture maya et de son encodage numérique.**

The hieroglyphs of the number zero, pronounced "mi-hi" inspired by the drawing of the researcher David Stuart, taken from stele 63 of the archaeological site of Copán in the western edge of Honduras. An example of the complexity of Mayan writing and its digital encoding.

Alexandre Bassi,
The Mayan Encoding Project,
2020

— खोई हुई लिपियाँ —
कश्मीर भारत की एक मूल एवं ऐतिहासिक लिपि शारदा

— *The Missing* ***Scripts*** *— Sharada, A native and historical script of Kashmir, India*

ग्रंथकर्ता :
परिमल परमार
सहकारिता:
राष्ट्रीय टाइपॉग्रफ़ी अन्वेषण कार्यशाला, नेन्सी फ्राँस
अभिस्वीकृति:
तूमा ह्यूओ-मॅख़शॉ, ज़ेहोम् कनेबुश्च, शाह्ल मज़्, एमिली इहिगु, ऍलीस सवुआ, ज़ेहेमी ओहन्यु, शिवानी धर, डॉ॰ त्रिलोकीनाथ गंजू, डॉ॰ श्रीनाथ तिक्कू, अंशुमान पांडे, राकेश कौल, श्रीदत्त, श्रीनिधी, लिआंग हाइ, करन रैना, ई-गंगोत्री ट्रस्ट

Author :
Parimal Parmar
Partnership :
Atelier National de Recherche Typographique, Nancy
Acknowledgements :
Thomas Huot-Marchand, Jérôme Knebusch, Charles Mazé, Émilie Rigaud, Alice Savoie, Jérémie Hornus, Peter Biľak, Shivani Dhar, Dr. Trilokinath Ganjoo, Dr. Shri Nath Tikkoo, Anshuman Pandey, Rakesh Koul, Sridatta, Srinidhi, Liang Hai, Karan Raina, eGangotri Trust

परिमल परमार ऐतिहासिक लिपियों और बहुभाषी टाइपडिज़ाइन में विशेष रुचि रखने वाले भारतीय डिजाइनर हैं। गुजराती, देवनागरी और लैटिन से परिचित होने के कारण, उन्होंने यह लिपि के लिए टाइपफेस डिज़ाइन किए है और वे सर्वत्र भारत के विभिन्न डिज़ाइन स्कूलों में मुलाक़ाती प्राध्यापक रह चुके हैं। वह वर्तमान में राष्ट्रीय टाइपॉग्रफ़ी अन्वेषण कार्यशाला, नेन्सी फ्राँस में एक शोध कार्यक्रम में भरती हैं।

Parimal Parmar is a designer from India with special interest in historical scripts and multilingual type design. Having been familiar with Gujarati, Devanagari and Latin, he has been designed typefaces for the same and has been a visiting faculty in a various design schools across India. He is currently enrolled in a research program at the Atelier national de recherche typographique (ANRT) Nancy.

शारदा लिपि का प्रस्तुतीकरण

शारदा दक्षिण एशिया की एक प्रमुख ऐतिहासिक ब्राह्मी-आधारित लिपि है। यह माना जाता है कि शारदादेश या शारदामंडला यह शब्द कश्मीर क्षेत्र के लिए एक पारंपरिक संस्कृत नाम है। यह ब्राह्मी के एक प्रमुख उप-परिवार का पूर्वज है और नागरी और प्रोटो-बंगाली परिवारों का सहोदर है। शारदा ८ वीं शताब्दी ईस्वी से २० वीं शताब्दी तक कश्मीर की प्रमुख शिलालेख के लिए और साहित्यिक लिपि थी। यह लिपि का उपयोग संस्कृत, कश्मीरी और उत्तरी दक्षिण एशिया की अन्य भाषाओं को लिखने के लिए किया गया था, पहले पत्थर, तांबे और फिर १९ वीं शताब्दी तक अन्य माध्यमो पर शिलालेखों के रूप में। १२ वीं शताब्दी से, शारदा का उपयोग वैदिक और शास्त्रीय संस्कृत ग्रंथों की पांडुलिपियों को लिखने के लिए किया जाता था।

१९ वीं शताब्दी में, फारसी लिपि के विस्तार और देवनागरी के विकास से कश्मीरी लिखने के लिए, शिक्षा और साहित्य उत्पादन के माध्यम में शारदा को अधिकारहीन कर दिया गया।

शारदा लिपि का विकास

शारदा कुटीला लिपि के माध्यम से गुप्त-ब्राह्मी से उत्पन्न हुइ। लिपि तीन अलग-अलग चरणों के माध्यम से अपने वर्तमान स्वरूप में विकसित हुई। सबसे शुरुआती चरण कुटिला लिपि से 'शारदा उचित' का एक परिवर्तन है जो ८ वीं शताब्दी के दौरान हुआ। इसके बाद ९ वीं - १० वीं शताब्दी के दौरान विकास की एक और अवधि थी। फिर ११ वीं -१३ वीं शताब्दी के दौरान अंतिम विकास का एक चरण हुआ।

शारदा लिपि की वर्तमान स्थिति

१९ वीं शताब्दी के बाद से, फारसी और टकरी लिपियों के बढ़ते प्रभाव ने शारदा के पतन में योगदान दिया। हालांकि १९ वीं शताब्दी के मध्य में सेरामपुर के धर्म-प्रचारकों ने शारदा में बाइबलों को छापा था जो बताता है कि उस समय शारदा में कुशल कश्मीरी बोलने वालों की संख्या काफी थी। शिक्षा और साहित्यिक उत्पादन के लिए शारदा का उपयोग, हालांकि, २० वीं शताब्दी की पहले चौथाई भाग के दौरान किया जाता था। वर्तमान में, कश्मीरी पंडितों द्वारा बहुत सीमित क्षमता के अलावा, शारदा का उपयोग नहीं किया जाता है, जो धार्मिक अनुष्ठानों के लिए और कुंडली लिखने के लिए लिपि का उपयोग करते हैं। स्वयं कश्मीरी भाषा अब फारसी और देवनागरी लिपि में लिखी जाती है, जिसमें कश्मीरी स्वरों का प्रतिनिधित्व करने के लिए नए चिन्ह जोड़े गए हैं।

Introduction to Śāradā (Sharada) Script

Sharada is a major historical Brahmi-based script from South Asia. It is believed that the term refers to a traditional Sanskrit name for the Kashmir region, Śāradādeśa or Śāradāmandala. It is the progenitor of a major sub-family of Brahmi and is a sibling of the Nagari and Proto-Bengali families. Sharada was the principal inscriptional and literary script of Kashmir from the 8th century CE until the 20th century. The script was used to write Sanskrit, Kashmiri and other languages of northern South Asia, first as inscriptions on stone, copper and then on other media up till the 19th century. From the 12th century, Sharada was used to write manuscripts of Vedic and classical Sanskrit texts.

In the 19th century, expanded use of the Persian script for writing Kashmiri and the growth of Devanagari, contributed to the marginalisation of Sharada as a medium of education and literary production.

Evolution of Sharada Script

Sharada descended from the Gupta-Brahmi through the Kutila script. The script evolved into its present form through three distinct stages of development. The earliest phase is a transition from the Kutila form to 'Sharada proper' during the 8th– 9th century. This was followed by another period of development during the 9th–10th centuries. Then a stage of final development during the 11th–13th centuries.

The form of Sharada of the earliest period is attested through inscriptions and coins of 8th to 10th centuries. The middle phase is evidenced by inscriptions and coins of the 11th through-14th centuries. The last phase is represented by inscriptional and manuscript records of the 15th and 16th centuries.

Current State of Sharada Script

Since the 19th century, the growing influence of Persian and Takri scripts contributed to the decline of Sharada. Though in the middle of the 19th century Serampore missionaries had printed bibles in Sharada which suggests that there was a significant number of Kashmiri speakers who were proficient in Sharada around that time. The use of Sharada for education and literary production, however, is attested through the first quarter of the 20th century. At present, Sharada is not used, except in a very limited capacity by Kashmiri Pandits, who employ the script for religious ritual purposes and for writing horoscopes. The Kashmiri language itself is now written in the Persian and in Devanagari script, to which new signs have been added in order to represent Kashmiri vowels.

1. Proposal to Encode the Sharada Script in ISO/IEC 10646
Anshuman Pandey University of Michigan Ann Arbor, Michigan, U.S.A.
pandey@umich.edu
August 5, 2009

शारदा के पुनरुद्धार की आवश्यकता

विद्वान समुदाय में शारदा के प्रति रुचि बढ़ रही है। भारत में, इंदिरा गांधी राष्ट्रीय कला केंद्र (आई॰जी॰एन॰सी॰ए॰) ने कश्मीरी पांडुलिपियों के संरक्षण और ग्रंथों के महत्वपूर्ण संस्करणों के उत्पादन के लिए शारदा को पढ़ने के लिए विशेषज्ञों को प्रशिक्षित करने के लिए पांडुलिपि और पुरालेख पर कार्यशालाओं का आयोजन किया है। शारदा पर आज उपलब्ध बहुत सारी जानकारी अंशुमान पांडे द्वारा किए गए पूरण शोध और विश्लेषण का एक हिस्सा है, जो एक भाषाविद हैं जिन्होंने यूनिकोड स्टैंडर्ड में शारदा को सांकेतिक शब्दों में बदलना का काम किया है।

नियमित रूप से ऑनलाइन कक्षाएं भी आयोजित की जा रही हैं जो उन सभी के लिए खुली हैं जो लिपि पढ़ना और लिखना सीखना चाहते हैं। शारदा को सीखने में बढ़ती रुचि को देखने के बाद यह समय आ गया है कि विभिन्न डिजिटल मीडिया के लिए भाषा और लिपि का समर्थन हो ताकि लोग इसे आसानी से अपना सकें। सबसे महत्वपूर्ण बात यह है कि कश्मीरी पंडित समुदाय (पिछले तीन दशकों से निर्वासन में रह रहे हैं) आखिरी बात यह चाहते है कि उनकी भाषा और संस्कृति को विनियोजित किया जाए और इसलिए, उनकी मातृ लिपि को पुनर्जीवित करना आवश्यक है।

ए॰एन॰आर॰टी॰ में परियोजना का एक सफल पुनरुद्धार और कार्य क्षेत्र बनाना

लिपि की हस्तलिखित पृष्ठभूमि को ध्यान में रखते हुए, मैं पहले टाइपफेस पारंपरिक तरिके से बनाने की योजना बना रहा हूं।

सिर्फ स्वतंत्र शारदा टाइपफेस बनाना पर्याप्त नहीं होगा क्योंकि लैटिन और देवनागरी दो लिपियाँ हैं जिनका शारदा के साथ सबसे अधिक बार उपयोग किया जा सकता है। इन डिज़ाइनों को एक अन्य लैटिन या देवनागरी टाइपफेस के साथ जोड़ने से दृश्य भाषा में असंगति पैदा होगी और वर्षों के प्रयासों के बाद भी अच्छी तरह से काम नहीं करेगा। मैं लैटिन और देवनागरी साथियों का एक सेट डिजाइन करने का इरादा रखता हूं जो शब्दकोशों में उपयोग करने, किताबें सेट करने और लंबे पढ़ने के लिए शारदा टाइपफेस के साथ जाएगा।

Need for Sharada Revival

Interest in Sharada is growing in the scholarly community.

In India, the Indira Gandhi National Centre for the Arts (IGNCA) has organised workshops on manuscriptology and palaeography in order to train specialists to read Sharada for the purpose of preserving Kashmiri manuscripts and producing critical editions of the texts.

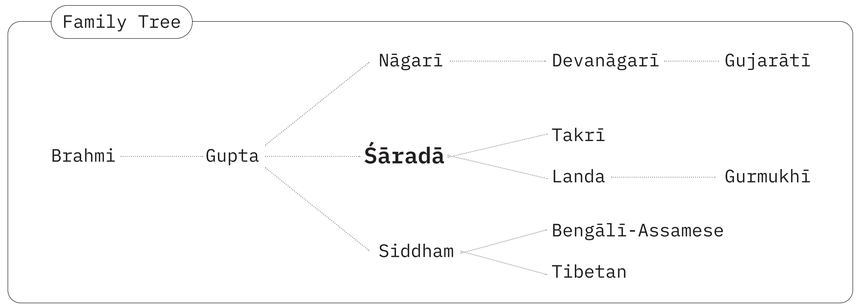
A lot of information available today on Sharada is part of a thorough research and analysis done by Anshuman Pandey, a linguist who has worked on encoding Sharada in The Unicode Standard.

There are also regular online classes being held that are open for all who wish to learn to read and write the script. After seeing the growing interest in learning Sharada it is time that there is language and script support for various digital media so that people can adapt to it easily. Most importantly, the last thing that Kashmiri pandit community (living in exile from past three decades) wants is that their language and culture be appropriated and therefore, reviving their mother script is essential.

Making a Successful Revival & Scope of the Project at ANRT

Keeping in mind the calligraphic background of the script, I plan to make the first set of typefaces a classical design with traditional calligraphic strokes and proportions.

Making just independent Sharada typefaces will not be sufficient since Latin and Devanagari are the two scripts that Sharada can be used most frequently with. Pairing these designs with another Latin or Devanagari typeface would create inconsistency in the visual language and would not work well even after putting years of efforts. I also intend to design a set of Latin and Devanagari companions that would go with Sharada typefaces, for use in dictionaries, setting books and long reading.



1. Proposal to Encode the Sharada Script in ISO/IEC 10646
Anshuman Pandey University of Michigan Ann Arbor, Michigan, U.S.A.
pandey@umich.edu
August 5, 2009

1. मूल भारतीय भाषाएँ

1. लदाख
2. कश्मीरी
3. डोगरी
4. हिंदी
5. पंजाबी
6. हरयाणवी
7. मारवाड़ी
8. गुजराती
9. बिहारी
10. नेपाली
11. न्यिशी
12. असमिस
13. आओ
14. मणीपुरी
15. मिज़ो
16. कोक्बोरोक
17. बेंगाली
18. भोजपुरी
19. ओड़िया
20. छत्तिसगढ़ी
21. मराठी
22. कोंकणी
23. तुलू
24. कन्नड़
25. तेलुगु
26. मलयालम
27. तमिल

1. Major Indian Languages

1. Ladakh
2. Kashmiri
3. Dogri
4. Hindi
5. Punjabi
6. Haryanvi
7. Maravadi
8. Gujarati
9. Bihari
10. Nepali
11. Nyishi
12. Assamese
13. Ao
14. Manipuri
15. Mizo
16. Kokborok
17. Bengali
18. Bhojpuri
19. Odia
20. Chattisgarhi
21. Marathi
22. Konkani
23. Tulu
24. Kannad
25. Telugu
26. Malayalam
27. Tamil

1. मूल भारतीय लिपियाँ

1. तिबेटन
2. रंजना
3. शारदा
4. अरबी
5. देवनागरी
6. गुजराती
7. बांग्ला
8. मिति मयेक
9. ओड़िया
10. तुलू
11. कन्नड़
12. तेलुगु
13. मलयालम
14. तमिल
15. लॉटिन

1. Major Indian Languages

1. Tibetan
2. Ranjana
3. Sharada
4. Perso-Arabic
5. Devanagari
6. Gujarati
7. Bangla
8. Meitei Mayek
9. Odia
10. Tulu
11. Kannada
12. Telugu
13. Malayalam
14. Tamil
15. Latin

१ / 1

२ / 2

३ / 3

४ / 4

3.1 Character Inventory

Consonants There are 34 consonant letters:

SHARADA LETTER KA	SHARADA LETTER DDA	SHARADA LETTER MA
SHARADA LETTER KHA	SHARADA LETTER DDHA	SHARADA LETTER YA
SHARADA LETTER GA	SHARADA LETTER NNA	SHARADA LETTER RA
SHARADA LETTER GHA	SHARADA LETTER TA	SHARADA LETTER LA
SHARADA LETTER NGA	SHARADA LETTER THA	SHARADA LETTER LLA
SHARADA LETTER CA	SHARADA LETTER DA	SHARADA LETTER VA
SHARADA LETTER CHA	SHARADA LETTER DHA	SHARADA LETTER SHA
SHARADA LETTER JA	SHARADA LETTER NA	SHARADA LETTER SSA
SHARADA LETTER JHA	SHARADA LETTER PA	SHARADA LETTER SA
SHARADA LETTER NYA	SHARADA LETTER PHA	SHARADA LETTER HA
SHARADA LETTER TTA	SHARADA LETTER BA	
SHARADA LETTER TTHA	SHARADA LETTER BHA	

Vowels There are 14 independent vowels:

SHARADA LETTER A	SHARADA LETTER VOCALIC RR
SHARADA LETTER AA	SHARADA LETTER VOCALIC L
SHARADA LETTER I	SHARADA LETTER VOCALIC LL
SHARADA LETTER II	SHARADA LETTER E
SHARADA LETTER U	SHARADA LETTER AI
SHARADA LETTER UU	SHARADA LETTER O
SHARADA LETTER VOCALIC R	SHARADA LETTER AU

[28] Unicode Roadmap Committee 2009.

Vowel Signs There are 13 dependent vowel signs:

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

Various Signs There are 8 various signs:

SHARADA SIGN CANDRABINDU	SHARADA AVAGRAHA
SHARADA SIGN ANUSVARA	SHARADA SIGN JIHVAMULIYA
SHARADA SIGN VISARGA	SHARADA SIGN UPADHMANIYA
SHARADA SIGN VIRAMA	SHARADA OM

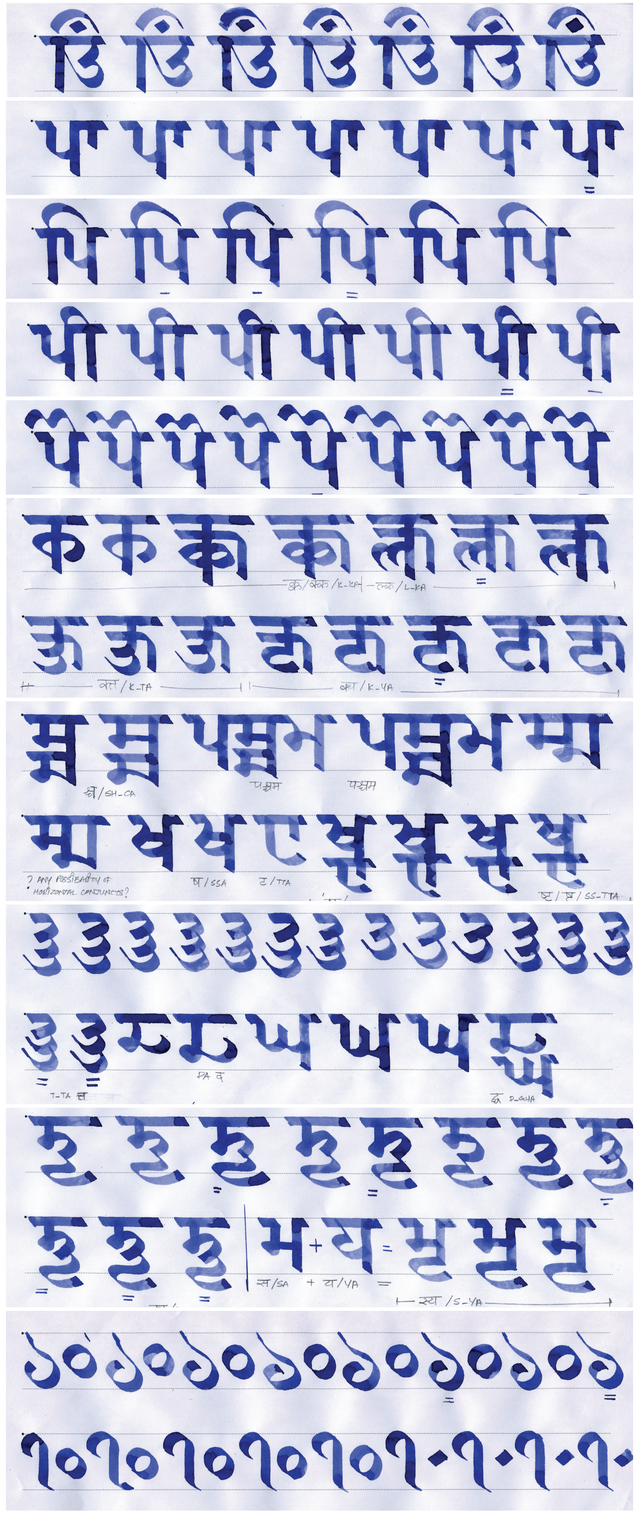
Punctuation Signs There are 4 punctuation signs:

SHARADA DANDA	SHARADA ABBREVIATION SIGN
SHARADA DOUBLE DANDA	SHARADA SEPARATOR

Digits There are 10 digits:

SHARADA DIGIT ZERO	SHARADA DIGIT FOUR	SHARADA DIGIT EIGHT
SHARADA DIGIT ONE	SHARADA DIGIT FIVE	SHARADA DIGIT NINE
SHARADA DIGIT TWO	SHARADA DIGIT SIX	
SHARADA DIGIT THREE	SHARADA DIGIT SEVEN	

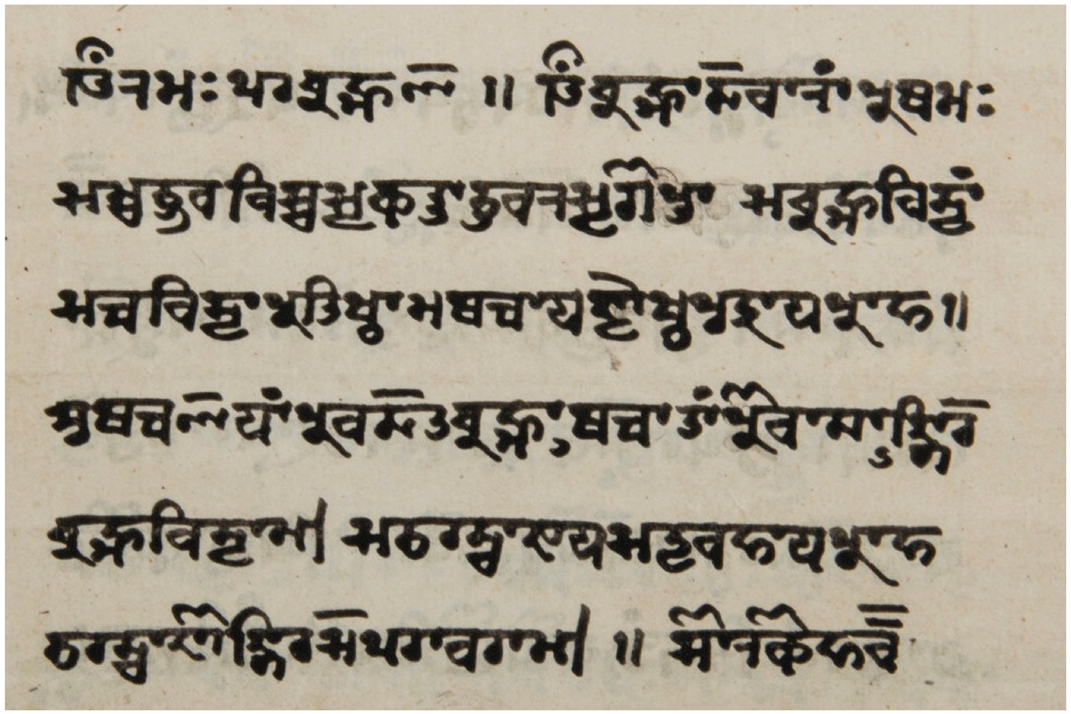
५ / 5



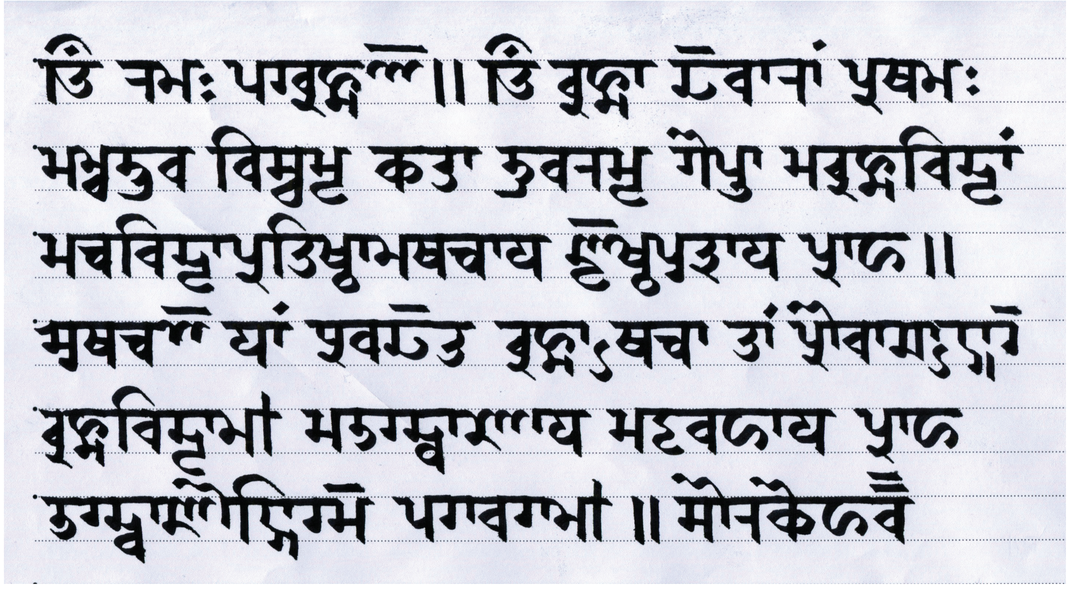
६ / 6

1. १ शारदा जोड़ाक्षर 'वश'
2. २ शारदा जोड़ाक्षर 'वय'
3. ३ शारदा जोड़ाक्षर 'वल'
4. ४ शारदा जोड़ाक्षर 'क'
5. ५ अंशुमान पांडे द्वारा शारदा लिपि को सांकेतिक शब्दों में बदलाव करने के प्रस्ताव में चरित्र सूची—
   व्यंजन अक्षर: ३४
   स्वतंत्र स्वर: १४
   निर्भर स्वर: १३
   विविध चिन्ह: ४
   अंक: १०
6. ६ शारदा वर्णमाला का परिमाण जानने के लिए सुलेख अभ्यास के माध्यम से अक्षरों और जोड़ाक्षरों की पुनरावृत्ति।

1. Sharada Conjunct k_sha
2. Sharada Conjunct k_ya
3. Sharada Conjunct k_la
4. Sharada Conjunct k_ta
5. Character Inventory in proposal to Encode the Sharada Script by Anshuman Pandey—
   Consonant letters: 34
   Independent vowels: 14
   Dependent vowel signs: 13
   Various signs: 8
   Punctuation sign: 4
   Digits: 10
6. Repetition of letters and conjuncts through calligraphy practice to learn the proportions of Sharada alphabets.



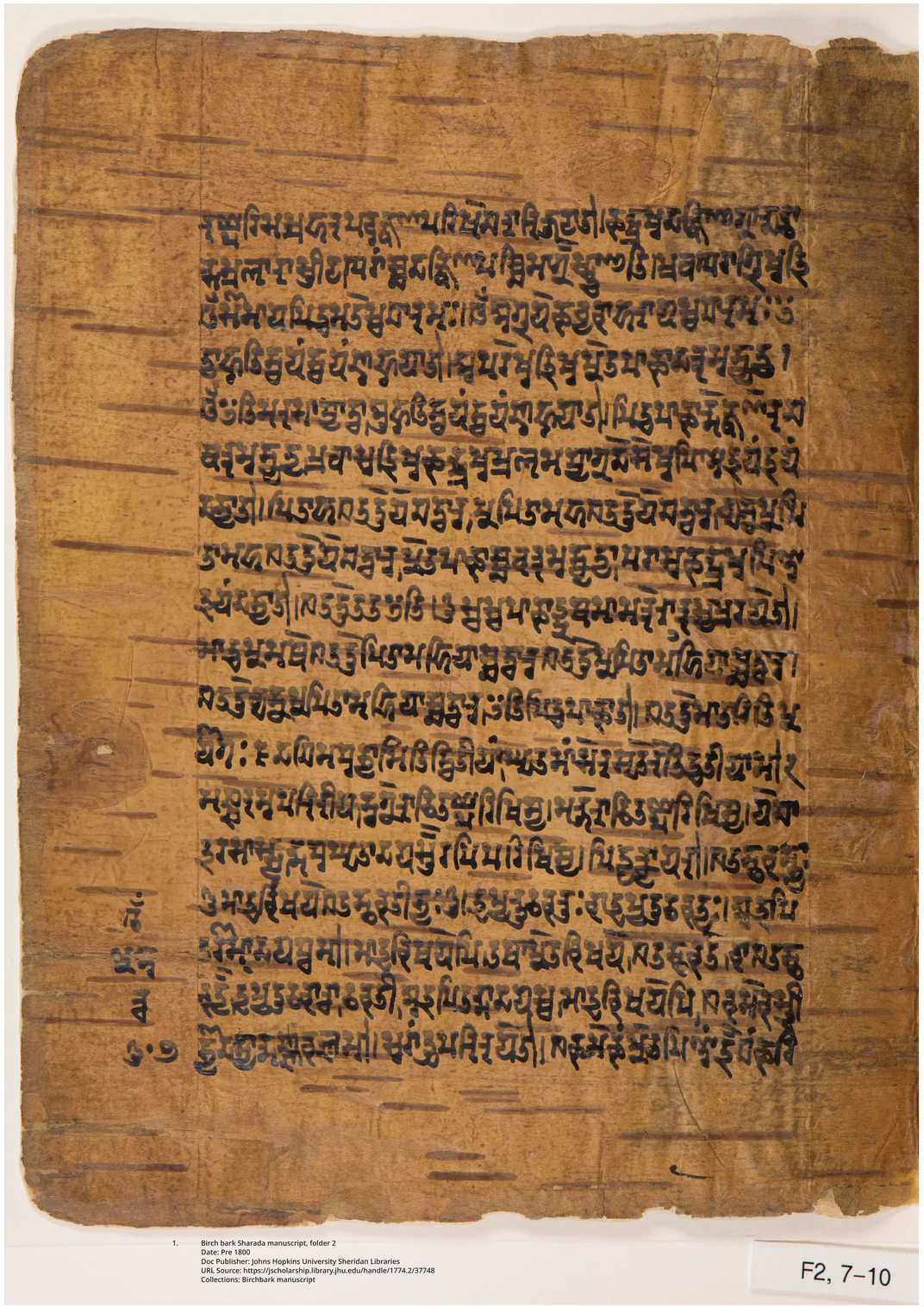
१ / 1



२ / 2

1. १ भाषाविद् श्रीदत्त द्वारा साझा की गई शारदा पांडुलिपि
   भाषा: संस्कृत
   पाठ: धार्मिक
2. २ पारंपरिक सुलेख के माध्यम से शारदा लिपि का परिमाण सीखने के लिए पांडुलिपि में उपस्थित सूत्रों को दोहराने का मेरा सर्व प्रथम प्रयास।

1. Sharada manuscript shared by linguist Sridatta
   Language: Sanskrit
   Text: Religious
2. My first attempts to replicate the text in the manuscript in order to learn Sharada script proportions through traditional calligraphy.



1. Birch bark Sharada manuscript, folder 2
   Date: Pre 1800
   Doc Publisher: Johns Hopkins University Sheridan Libraries
   URL Source: https://jscholarship.library.jhu.edu/handle/1774.2/37748
   Collections: Birchbark manuscript

— The Missing Scripts — From Nigeria to Iran, Nsibidi and Elymaic writing systems
— The Missing Scripts — Du Nigeria à l'Iran, les systèmes d'écriture nsibidi et elymaic

Auteur :
Morgane Pierson
Partenariat :
Atelier National de Recherche Typographique, SEI Berkeley
Remerciement :
Deborah Anderson, Johannes Bergerhausen, Charles Häberl, Jérémie Hornus, Thomas Huot-Marchand, Jérôme Knebusch, Borna Izadpanah, Charles Mazé, Émilie Rigaud, Alice Savoie

Morgane Pierson est dessinatrice de caractère spécialisée dans le développement de systèmes d'écriture anciens, minoritaires ou non encore encodés. Après avoir rejoint le projet The Missing Scripts en tant qu'étudiante chercheuse à l'Atelier National de Recherche Typographique (ANRT, Nancy) en 2017, elle a conçu la première police de caractères pour l'Elymaic, un ancien système d'écriture venu d'Iran, et récemment intégré à l'Unicode. Elle développe actuellement une police multi-script pour les inscriptions monétaires dans le cadre du projet PIM en collaboration avec la Bibliothèque nationale de France (BnF, Paris) et l'ANRT.

Morgane Pierson is type designer specialized in the development of ancient, minority, or not yet encoded writing systems. After joining The Missing Scripts project as researcher student at the Atelier National de Recherche Typographique (ANRT, Nancy) in 2017, she designed the first typeface for Elymaic, an ancient writing system from Iran, newly in Unicode. She is currently developing a multi-script typeface for monetary inscriptions for the PIM project in collaboration with the Bibliothèque nationale de France (BnF, Paris) and ANRT.

Histoire du nsibidi

Le nsibidi est un système d'écriture pictographique et idéographique originaire du sud du Nigeria. On ignore encore la date de création du nsibidi, mais les plus anciennes traces mises au jour sur un site archéologique au centre de Calabar, prouvent son existence aux alentours du IXe siècle. Le premier rapport de missionnaires britanniques qui confirma l'existence de ces signes fut écrit par le commissaire de district de Calabar, Thomas Doveton Maxwell en 1904. C'est ensuite le révèrent J. K. MacGregor[1] qui en 1909 rapporta 24 signes traduits, suivi en 1911 par Elphinstone Dayrell[2] (également commissaire de district) et le botaniste et anthropologue Percy Amaury Talbot[3] en 1912. Les efiks (ethnie de 200 000 individus habitant principalement la capitale de la Cross River, Calabar) sont considérés par beaucoup comme les inventeurs du nsibidi mais il est possible qu'ils l'aient acquis par les ekoïs (groupe ethnique de 400 000 individus vivant à la frontière Nigeria-Cameroun). Par les emprunts successifs et les échanges avec d'autres codes locaux, le nsibidi est donc commun à diverses populations de la région de la Cross River au sud-est du Nigeria, région où l'écriture, l'art et le rituel sont intimement liés.

L'une des particularités du nsibidi est qu'il est constitué à la fois d'idéogrammes simplifiés exprimant des idées abstraites mais aussi de pictogrammes dont la signification est presque sans équivoque. Nous sommes donc face à une écriture figurative analytique (pour reprendre le terme utilisé par Ernst Doblhofer) réunissant deux tendances de notation de la parole : l'une vers la fixation et la définition précise du sens par la description et l'autre vers une simplification et une normalisation du signe[4].

Les utilisateurs

Les principaux utilisateurs du nsibidi sont les individus de l'institution ekpe (ou « hommes-léopards ») qui permettait la régularisation sociale au sein de l'ethnie des efiks[5]. Composée d'un groupe élitiste d'individus principalement masculins, l'institution imposait les règles socio-économiques de la Région de Calabar. Par leur emploi du nsibidi, l'institution ekpe donnait à ses signes une forte fonction sociale et politique[6]. En effet, le sens de certains signes était en principe connu des ses seuls affiliés, mais pouvaient être montrés en public pour montrer la puissance d'ekpe : les non-initiés les reconnaissaient comme étant les insignes de l'institution et respectaient les personnes ou les lieux qui en étaient revêtus. Il existait sept rangs dans la hiérarchie sociale ekpe, le plus élevé étant appelé « Nchibbi » et était censé connaître la signification de l'ensemble des glyphes du nsibidi.

History of Nsibidi

Nsibidi is a pictographic and ideographic writing system from southern Nigeria. The date of creation of the Nsibidi is still unknown, however, some early specimens of this writing system, which were discovered on an archaeological site in the centre of Calabar, prove that it was in use as early as the ninth century. The first known British missionaries report, confirming the existence of these signs, was written in 1904 by the district commissioner of Calabar, Thomas Doveton Maxwell. Later, in 1909, reverent J. K. MacGregor[1] revealed 24 translated signs, followed by Elphinstone Dayrell[2] (also district commissioner) in 1911 and botanist and anthropologist Percy Amaury Talbot[3] in 1912. The Efiks (an ethnic group consisting of 200,000 individuals living mainly in the capital of the Cross River, Calabar) are considered by many to be the inventors of Nsibidi, however, it is possible that they had acquired it from the Ekois (an ethnic group consisting of 400,000 people living on the Nigeria-Cameroon border). As a result of successive borrowing and exchanges with other local codes, Nsibidi became common to various populations in the Cross River region in south-eastern Nigeria, a region where writing, art, and ritual are intimately linked.

One of the peculiarities of Nsibidi is that it consists of both simplified ideograms, expressing abstract ideas, and also of pictograms, whose meaning is almost unequivocal. Therefore, Nsibidi is considered to be an analytical figurative writing system (to use the term used by Ernst Doblhofer) bringing together two trends in speech notation: one towards the fixation and precise definition of meaning by description and the other towards a simplification and a normalization of the sign[4].

The users

The main users of Nsibidi were members of the Ekpe society (or "leopard men") who determined social regularization within the Efiks ethnic group[5]. Composed of an elitist group of primarily male individuals, the Ekpe imposed their socio-economic rules on the population of Calabar region. The Ekpe society also added a strong social and political function to the signs of Nsibidi[6]. In fact, the meaning of certain signs was in principle known only to its affiliates, however, they could also be shown in public to display the power of Ekpe. The uninitiated people recognized these signs as being the insignia of the Ekpe society and respected the people or the places that were covered with it.

Ekpe social hierarchy consisted of seven ranks, the highest of which was called "Nchibbi" and was believed to know the meaning of all of

1. J. K. MacGregor, ***The Journal of the Royal Anthropological Institute of Great Britain and Ireland***, « Some Notes on Nsibidi », Vol. 39, 1909, PP. 209-219
2. Elphinstone Dayrell, ***The Journal of the Royal Anthropological Institute of Great Britain and Ireland***, « Further Notes on Nsibidi Signs with their Meanings from the Ikom District, Southern Nigeria », Vol. 41, 1911, PP. 521-540
3. P. Amaury Talbot, ***In The Shadow of the Bush***, 1917, PP. 447-461
4. Ernst Doblhefer, ***Le déchiffrement des écritures***, Arthaud, 1959
5. *Fr — Sous-groupe de l'ethnie des ibibios. Les ibibios représentent 3% de la population nigérianne et sont en sixième position dans le classement des 71 plus grandes ethnies du pays*
   En — Subgroup of the ibibios ethnic group who represent 3% of the Nigerian population and are in the sixth position in the ranking of the 71 largest ethnic groups in the country.
6. I. Miller, M. Ojong, ***Ethnic and Racial Studies***, « Ékpè 'leopard' society in Africa and the Americas: influence and values of an ancient tradition », 2012, PP. 01-16

En outre, le degré de connaissance de l'écriture définissait le rang dans l'échelle sociale. Ainsi, le secret de la signification de ces signes était censé assurer une juste redistribution des savoirs et des profits de toute la population. Le nsibidi était donc, plus qu'une écriture, c'était aussi une garantie d'ordre, de paix sociale et de protection du commerce.

État de la recherche

Aujourd'hui, du fait du culte du secret et de leur logique de transmission orale ou cryptée conjugué à la diminution de leur nombre et au déclin de leur influence (voire leur disparition pure et simple), le savoir de ces sociétés secrètes est menacé d'oubli[7]. De plus, la plupart des sources disponibles ont été écrites par des missionnaires britanniques, et les récentes études sur ce système d'écriture sont encore largement basées sur ces rapports. Cependant, les récits de ces missionnaires doivent être étudiés avec prudence en raison des inexactitudes et des préjugés que ces textes ont souvent diffusés.

Bien que la représentation scripturale du nsibidi ait été largement utilisée avant l'ère coloniale, aujourd'hui, le nsibidi est principalement matérialisés par des gestes pantomimiques[8] ou dansés. De plus, les sources primaires restent relativement rares et certains des supports du nsibidi sont plutôt fragiles ou éphémères (gourdes d'argile, tracé direct dans le sable, peintures corporelles, etc.). Aussi, la forme pré-coloniale du nsibidi n'est pas actuellement incluse dans la classification proposée par le consortium Unicode[9], du fait en partie que ce système d'écriture est partiellement codé et indéchiffré.

Il est important de poursuivre les discussions sur les aspects culturels, historiques et technologiques de l'encodage d'un système de communication tel que le nsibidi. Mais ceci devrait également inclure une discussion s'il est nécessaire ou même éthique d'explorer et/ou normaliser certains systèmes de communication du monde.

the signs of Nsibidi. In addition, the level of literacy skills defined the rank in the social scale. Thus, the secrecy of the meaning of these signs was supposed to ensure a fair redistribution of the knowledge and wealth amongst the entire population. Therefore, Nsibidi was more than a script, it was also a guarantee of order, social peace, and protection of trade.

The state of the research

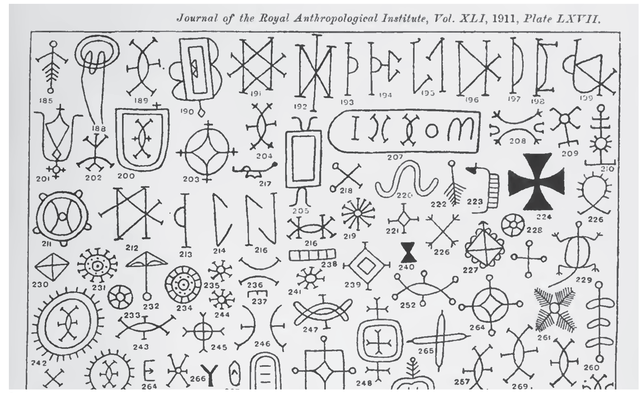
Today the knowledge of these secret societies is threatened, and might be even forgotten, due to the cult of secrecy and their logic of oral or encrypted transmission, combined with the decrease in their number and the decline of their influence (even their disappearance outright)[7]. Additionally, most of the available sources were written by British missionaries, and recent studies of this writing system are still largely based on these reports. However, missionary accounts should be studied with caution due to the inaccuracies and prejudices that such texts often contain.

Although, the scriptural representation of the Nsibidi was widely used before the colonial era, today, Nsibidi is mainly materialized by pantomimic[8] or danced gestures. Moreover, the primary sources remain relatively scarce and some of the mediums on which the Nsibidi could be found are rather fragile or ephemeral (gourds of clay, direct tracing in the sand, body paints and so on). On the other hand, the pre-colonial form of Nsibidi is not currently included in the classification proposed by the Unicode[9] consortium, possibly due to the fact that this writing system is partly coded and not fully deciphered.

Significantly, there needs to be further discussion over the cultural, historical and technological aspects of encoding a system of communication such as Nsibidi. This should also include a discussion to examine whether it is necessary or even ethical to scrutinise and standardise certain forms of human communication.

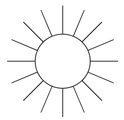
7. Didier Fassin, ***Les politiques de L'ethnopsychiatrie : la psyché africaine, des colonies africaines aux banlieues parisiennes***, « L'Homme », numéro 153, 2000, pp. 231–250. JSTOR, www.jstor.org/stable/25157018
8. **Ensemble de gestes, de jeux de physionomie qui remplacent ou accompagnent et renforcent le langage parlé.**
9. *Fr — Unicode est un standard informatique qui permet des échanges de textes dans différentes langues. Il vise au codage de texte écrit en donnant à tout caractère de n'importe quel système d'écriture un nom et un identifiant numérique. Lors de sa mise à jour en juin 2018, la norme unicode couvrait 137 374 caractères, et englobe maintenant un large éventail de symboles et de systèmes d'écritures, anciens et modernes.*
En — Unicode is a computer standard that allows the exchange of texts in different languages. It aims at coding text by giving any character from any writing system a name and a numeric identifier. In June 2018, the Unicode standard covered 137,374 characters, and now support a wide range of symbols and writing systems, modern and ancient.

1

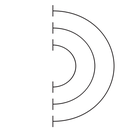


2

Une tortue — A turtle



Le soleil — The sun



L'argent, la richesse — The money, wealth

La médecine — The medecine

3

4

1. *Ekpe procession*
Dr. Eli Bentor
2. *Nsibidi signs*
Dayrell E., *The Journal of the Royal Anthropological Institute of Great Britain and Ireland*, "Further Notes on Nsibidi Signs with their Meanings from the Ikom District, Southern Nigeria", Vol. 41, 1911, PP. 521-540
3. *Pictograms and ideograms Nsibidi*
Morgane Pierson, 2018
4. *Circular brass tray made from 'Muntz metal' with a punch decorated design*
Efiks, Calabar, Nigeria, 1919?
The Pitt Rivers Museum, University of Oxford
5. *Wooden headdress mask in the form of a bird's head and beak, inscribed with nsibidi writing.*
Ejagham, Southern Nigeria
Cross River State Oban District.
163×445×90mm, 1914?
The Pitt Rivers Museum, University of Oxford

5

1

2

3

4

5

1. **Collection of the Pitt Rivers Museum.**
Photography: Morgane Pierson. Courtesy of the Pitt Rivers Museum, University of Oxford
2. **Base for the gourd box inscribed with Nsibidi writing, Ejagham, Southern Nigeria, Oban district, 199×90mm, pres. by P. A. Talbot, 1914.**
Photography: Morgane Pierson. Courtesy of the Pitt Rivers Museum, University of Oxford
3. **Gourd vessel inscribed with Nsibidi writing, Ejagham, Southern Nigeria, Oban district, 154×70×51mm, pres. by P. A. Talbot, 1914.**
Photography: Morgane Pierson. With the courtesy of the Pitt Rivers Museum, University of Oxford
4. **Lid of gourd box inscribed with Nsibidi writing, Ejagham, Southern Nigeria, Oban district, 322×61mm, pres. by P. A. Talbot, 1914.**
Photography: Morgane Pierson. Courtesy of the Pitt Rivers Museum, University of Oxford
5. **Skin-covered single-faced headress mask with detechable wooden horns worn at ceremonial dances, Ekoi, Oban, 380×463mm, pres. by P. A. Talbot, 1914.**
Photography: Morgane Pierson. Courtesy of the Pitt Rivers Museum, University of Oxford

Brève histoire de l'elymaic

Le système d'écriture elymaic était utilisé en Elymais, état vassal Parthe situé au sud-ouest de l'Iran actuel, du III^e^ siècle avant J.-C. au début du V^e^ siècle. Il descend directement de l'araméen impérial (lui-même descendant du phénicien). Il présente de nombreuses similitudes avec les systèmes d'écritures voisins tels que le nabatéen, pahlavi, parthe, hatran et hébreu. Il ai possible que l'elymaic ait donné naissance au mandaic mais les opinions sont divisés sur ce point.

Les traces qui nous restent sont principalement des épigraphies, des inscriptions monétaires et des graffitis sur pierre. Les inscriptions proviennent de quatre lieux principaux, certainement des sépultures. Le site géographique le plus important qui contient lui-même 5 inscriptions est le site de Tang-i Sarvak ou «vallée des cyprès». Ils datent du 1^e^ siècle avant J.-C. au 3^eme^ siècle. La proposition Unicode est principalement basée sur ces formes. La «vallée des cyprès» dans l'est du Khūzestān est considéré comme le site archéologique le plus important d'Elymais. On pense qu'il s'agissait d'un lieu sacré utilisé pour le couronnement des rois élymaéens.

La recherche aujourd'hui

Dans un tel projet, l'objectif mais aussi le défi est de concevoir des formes typographiques fonctionnelles et conformes aux normes, tout en restant respectueux et le plus fidèle des sources disponibles. Cela souligne également l'importance de passer par le processus de numérisation : à la fois dans un but de préservation et de mémoire, mais aussi, pour répondre à un besoin de la part de communauté d'utilisateurs, dans ce cas-ci, des scientifiques, universitaires (linguistes, archéologues…).

L'elymaic est désormais supporté par l'Unicode 12.0 (5 mars 2019), grâce aux efforts d'Anshuman Pandey qui a rédigé la proposition Unicode. *Shimbār* (publié plus tard sous le nom de *Noto Elymaic* par Google) est la première police de caractères conçue pour représenter le système d'écriture elymaic.

Brief history of Elymaic

The writing system Elymaic was used in the ancient state of Elymais, located in the southwest region of modern Iran at the head of the Persian Gulf from the third century BC to the early fifth century. It descends directly from the imperial Aramaic (itself descendant of Phoenician) and has many similarities with the neighbouring scripts such as Nabatean, Pahlavi, Partian, Hatran, and Hebrew. It has been suggested that the Elymaic is given birth to the Mandaic, however, opinions are divided on this subject.

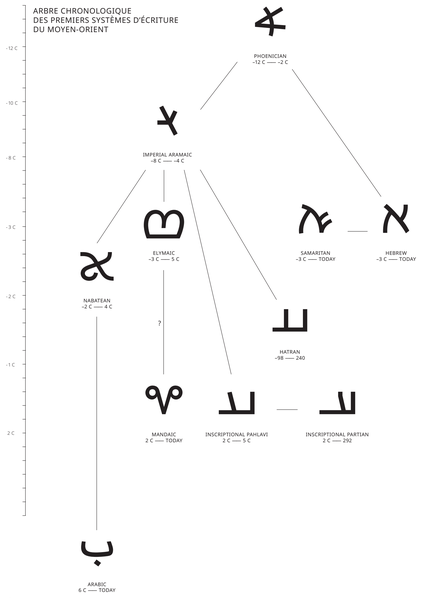
The existing traces of Elymaic are mainly epigraphies, monetary inscriptions, and graffiti on stone. The inscriptions come from four principal places, certainly burials. The most significant geographical site which contains 5 inscriptions is the site of Tang-i Sarvak or "the valley of the cypresses". They date from the 1st century BC to the 3rd century. The Unicode proposal is mainly based on these forms. The "valley of the cypresses" in eastern Khūzestān is considered to be the most important archaeological site in Elymais. It is believed to be a sacred grove used for the coronation of Elymaean kings.

The research today

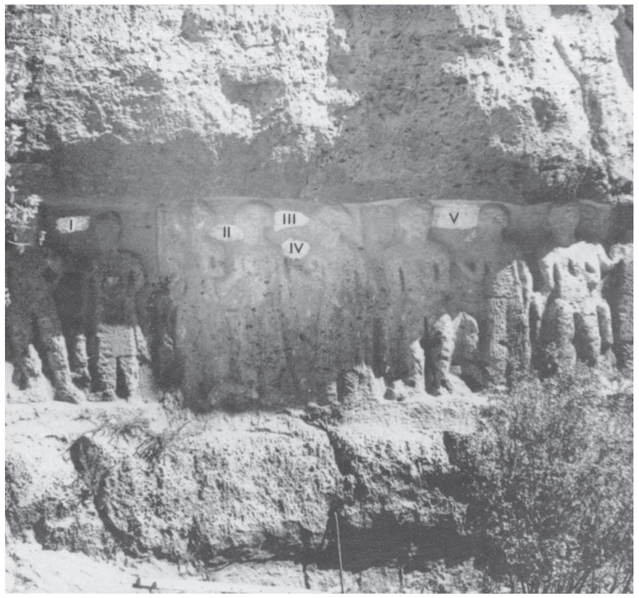
In this project, the goal and also the challenge has been to design typographic forms which are functional and comply with standards, while remaining respectful and as close as possible to the available sources. That also underlines the importance of going through the process of digitization: both from the perspective of preservation, and to respond to the need on the part of the user's community, in this case, the scholars (linguists, archaeologist, and so on).

Elymaic is now supported by Unicode 12.0 (5 March, 2019), thanks to the efforts of Anshuman Pandey who wrote the Unicode proposal. *Shimbār* (later released as *Noto Elymaic* by Google) is the first typeface that has been designed to represent Elymaic writing system.

1. Bivar, A.D.H. and S. Shaked. 1964."The Inscriptions at Shīmbār". ***Bulletin of the School of Oriental and African Studies***, University of London, vol. 27, no. 2 (1964)
2. Häberl, Charles G. 2006."Iranian Scripts for Aramaic Languages: The Origin of the Mandaic Script". ***Bulletin of the American Schools of Oriental Research***, No. 341 (February 2006), pp. 53–62.
3. Healy, John F. 1990. ***The Early Alphabet***. Berkeley and Los Angeles: University of California Press.
4. Naveh, Joseph. 1997. ***Early History of the Alphabet: An Introduction to West Semitic Epigraphy and Palaeography***. Reprint, 2nd rev. ed., 1987. Jerusalem: Magnes Press, Hebrew University.
5. O'Connor, Michael. 1996. "Epigraphic Semitic Scripts". ***The World's Writing Systems***. edited by Peter T. Daniels and W. Bright, pp. 88–107. New York and Oxford: Oxford University Press.
6. Pandey, Anshuman. October 23, 2017."Proposal to encode the Elymaic script in Unicode" (L2/17-226R2).
2017."Preliminary proposal to encode the Elymaic script in Unicode" (L2/17-055).
7. D. T. Potts, ***The Archaeology of Elam: Formation and Transformation of an Ancient Iranian State***, second edition, Cambridge World Archeology, Institute for the Study of the Ancient World, 2016



1



2

The inscriptions of Tang-i Butan

Inscription no. I:

'wky the Elder (?), who is b'gybh,	אוכי נשישא זי אשיבה	𐡀𐡅𐡊𐡉 𐡍𐡔𐡔𐡀 𐡆𐡉 𐡀𐡔𐡉𐡁𐡄
son of Ṣwl	בר צול	𐡁𐡓 𐡑𐡅𐡋

Inscription no. II:

Šrwkw who is	שרוכו זי	𐡔𐡓𐡅𐡊𐡅 𐡆
b'šybh, son of Šmwm	באשיבהבר שמום	𐡁𐡀𐡔𐡉𐡁𐡄 𐡁𐡓 𐡔𐡌𐡅𐡌

Inscription no. III:

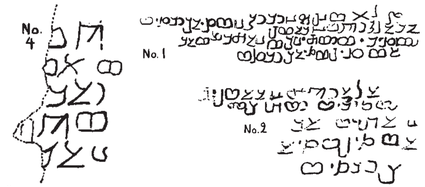
Šptw the ṣṭwr', who is	שפחו צטורא זי	𐡔𐡐𐡕𐡅 𐡑𐡈𐡅𐡓𐡀 𐡆
(keeper of) the altar of Bël (?),	בלאדו בר אובי	𐡁𐡋𐡀𐡃𐡅 𐡁𐡓 𐡀𐡅𐡁𐡉
son of 'wky		

Inscription no. IV:

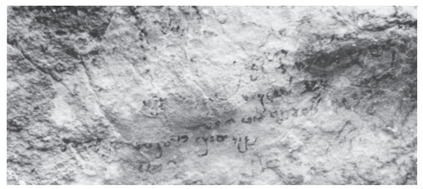
These are the images	צלמיא	𐡑𐡋𐡌𐡉𐡀
which Šptw prepared,	שפחו בר שאש מן אלה זי עחיד	𐡔𐡐𐡕𐡅 𐡁𐡓 𐡔𐡀𐡔 𐡌𐡍 𐡀𐡋𐡄 𐡆 𐡏𐡕𐡉𐡃
son of Š'š, from		𐡔𐡓 𐡔𐡕𐡏𐡕 𐡍𐡍 𐡌𐡕𐡔 𐡑𐡔
'yrsy	אירסי	𐡀𐡉𐡓𐡎𐡉

Inscription no. V:

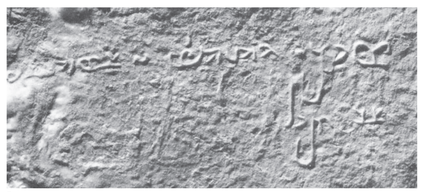
Orodes the Great,	ורוד רבא	𐡅𐡓𐡅𐡃 𐡓𐡁𐡀
who is b'šybh	זי באשיבה	𐡆 𐡁𐡀𐡔𐡉𐡁𐡄



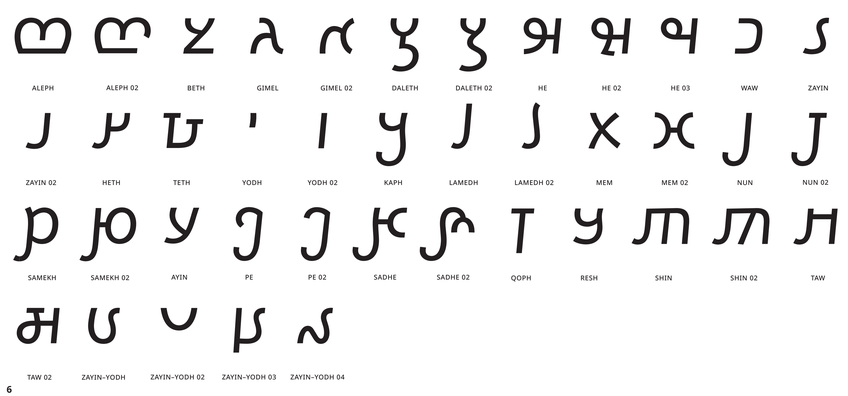
3



4



5



6

1. *Fr — Arbre chronologique des premiers systèmes d'écriture du Moyen-Orient*
Classement par l'auteur (liste non-exhaustive)
En — Family tree of the early middle east writing systems
Classement by the author (non-exhaustive list)
2. *The large scupture at Tang-I Butān, showing the places of the five inscriptions.*
Bivar, A. D. H. and S. Shaked. 1964. "The Inscriptions at Shīmbār". ***Bulletin of the School of Oriental and African Studies*****, University of London, vol. 27, no. 2 (1964), pp. 265–290.**
3. *Facsimile of the Tang-e Sarvak inscriptions (1st century BCE and 3rd century CE)*
W. S. Henning, 1952
4. *Tang-e Chilau carbon ink graffiti*
A.D.H Bivar, S. Shaked (1964), The Inscriptions at Shīmbār
5. *Tang-i Butān inscriptions (1st century BCE to 3rd century CE),*
A.D.H Bivar, S. Shaked (1964), "The Inscriptions at Shīmbār"
6. *Typeface Shimbār (later released as Noto Elymaic by Google)*
Morgane Pierson, 2019

"[kbnš] k[y]r mlk'..."
"Le roi Kabnashkir"
Inscription aramaic en elymaic, Bard-e Nešānda, Ḵūzestān, Iran, 180-160 ap. J.-C.
Roman Ghirshman, 1976, Pl. XXXV, 4

"[kbnš] k[y]r mlk'..."
"Kabnashkir the King"
Aramaic inscription using Elymaic, Bard-e Nešānda, Ḵūzestān, Iran, 180-160 BC.
Roman Ghirshman, 1976, Pl. XXXV, 4

— 세 가지 언어, 두 가지 문자, 하나의 매체 — 이중문자의 삼중언어 — ***Three Languages, Two scripts, One medium*** — *Biscriptual trilingualism*

저자:
배소현
파트너십:
프랑스 국립타이포그래피 연구소

감사의 말 :
제레미 오르뉴, 토마 위오 마르샹, 제롬 크네부스, 샤를 마제, 에밀리 리고, 알리스 사부아

Author :
So-Hyun Bae
Partnership :
Atelier National de Recherche Typographique

Acknowledgements :
Jérémie Hornus, Thomas Huot-Marchand, Jérôme Knebusch, Charles Mazé, Émilie Rigaud, Alice Savoie

배소현은 한국계 프랑스 그래픽 디자이너다. 어린 시절을 한국, 프랑스, 미국에서 보내면서 언어에 대해 지대한 관심을 가지게 된다. 그의 디자인 작업 가운데 다국어 타입세팅을 다룬 작품이 많은 이유다. 현재 프랑스 낭시에 위치하고 있는 국립타이포그래피 연구소 (ANRT－Atelier national de recherche typographique) 연구원으로 활동 중이다. 추가정보는 baesohyun.com

So-Hyun Bae is a French-Korean graphic designer. As she spent her childhood in Korea, France and the United States, languages gradually became a passionate interest and her work revolves around multilingual typesetting. She is currently enrolled in a research program at the Atelier national de recherche typographique (ANRT). For more information : baesohyun.com

세 가지 언어, 두 가지 문자, 하나의 매체

한국어권·프랑스어권·영어권 환경에서 자란 개인적인 경험에서 비롯된 이 연구는 글꼴·시각 디자인의 관점에서 이중문자의 삼중언어 문제를 다루고자 한다.

한국어, 프랑스어, 영어는 각자 고유한 어휘와 문법 체계를 갖춘 세 가지 언어이다. 하지만 문자체계로 보면 영어와 프랑스어는 라틴 알파벳, 한국어는 한글을 바탕으로 하고 있기때문에 문자로는 두 가지 체계다. 삼중언어와 이중문자 사이에서 나타나는 부조화는 타이포그래픽 매치메이킹 (typographic matchmaking)에 대한 의문을 제기한다. '타이포그래픽 매치 메이킹'이란 서로 글자구조가 다른 문자체계들을 조화 시키는 것을 가리키며, 주로 다국어 글꼴 · 편집디자인에서 많이 찾아 볼 수는 디자인 패턴이다. 예컨대, 한국어로 된 텍스트가 글자 줄기에 부리(라틴 알파벳의 세리프에 해당)가 달린 바탕체으로 조판이 되어있다면, 이를 영어로 옮길때는 세리프가 달린 글꼴이 설정될 가능성이 크다. 그러나, 같은 문자체계를 공유하는 다국어 디자인을 할 경우에는 언어들 사이에 차이를 두려는 경향이 있다. 또 다른 예를 들자면, 프랑스어 내용이 로마체로 조판되어 있다면, 이것을 영어로 옮길때는 이탤릭체 또는 다른 색깔이 적용되어 있을것이다. 즉, 이런 경우 그래픽 디자이너들에게는 '타이포그래픽 매치메이킹'보다는 '타이포그래픽 매치브레이킹' (typographic matchbreaking)이 더 끌릴수도 있다.

'매치메이킹'과 '매치브레이킹'이란 용어는 대립적이거나 한 쌍을 이루는 이중성을 시사한다. 그렇다면, 두 개 이상의 언어로 디자인을 하게 된다면, 디자이너는 어떤 자세로 디자인을 해야할까.

언어사이에 공평함을 유지할려면 어떤 글꼴을 설정해야 할까. '타이포그래픽 매치메이킹'과 '타이포그래픽 매치브레이킹'간의 균형은 어떻게 이룰것인가.

Three Languages, Two Scripts, One Medium

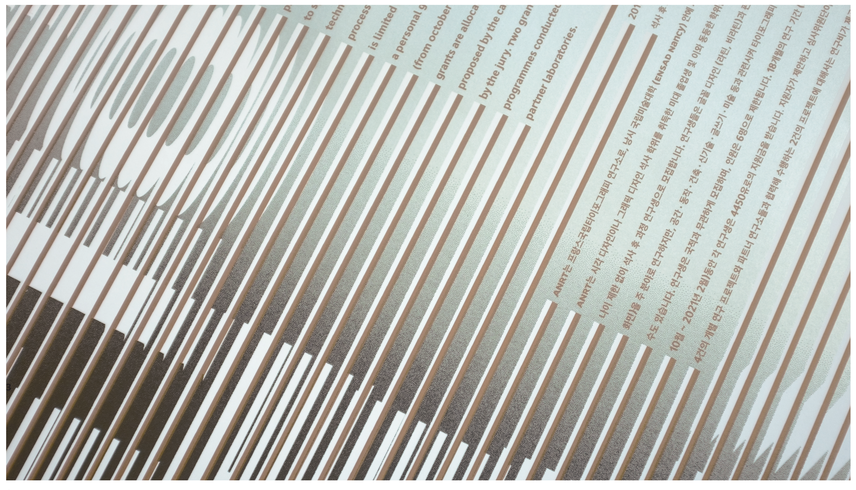
Inspired from personal experiences, growing up in a Korean-French-English-speaking environment, this research project investigates this specific case of trilingualism with a (typo) graphic approach.

Korean, French and English: although these are three different languages, they involve (only) two writing systems: Latin and Hangul. This dissonance between tri-lingualism (three languages) and bi-script (two scripts) leads to questioning the process of typographic matchmaking—a common design pattern that seeks to harmonize different writing systems, mainly noticeable in multi-script type design or editorial design. For example, if a text in Korean is set in Batang (바탕체, a Hangul typeface with buri—an equivalent to serif), its English translation would most likely be set in a serif typeface to suit the Korean font. On the other hand, when it comes to designing with multiple languages that share the same writing system, there seems to be the tendency to differentiate them. For instance, if a French text is set in roman, its translation in English may be set in italic or in a different color. Instead of matchmaking, a typographic match-breaking seems more compelling.

The terms 'matchmaking' and 'match-breaking' suggest a pairing, an opposition—a duality. Thus, when more than two languages are involved in a design, especially with different writing systems, what should be the designer's attitude? How can the designer express impartiality through its type choices? How can a balance between typographic matchmaking and match-breaking be established?

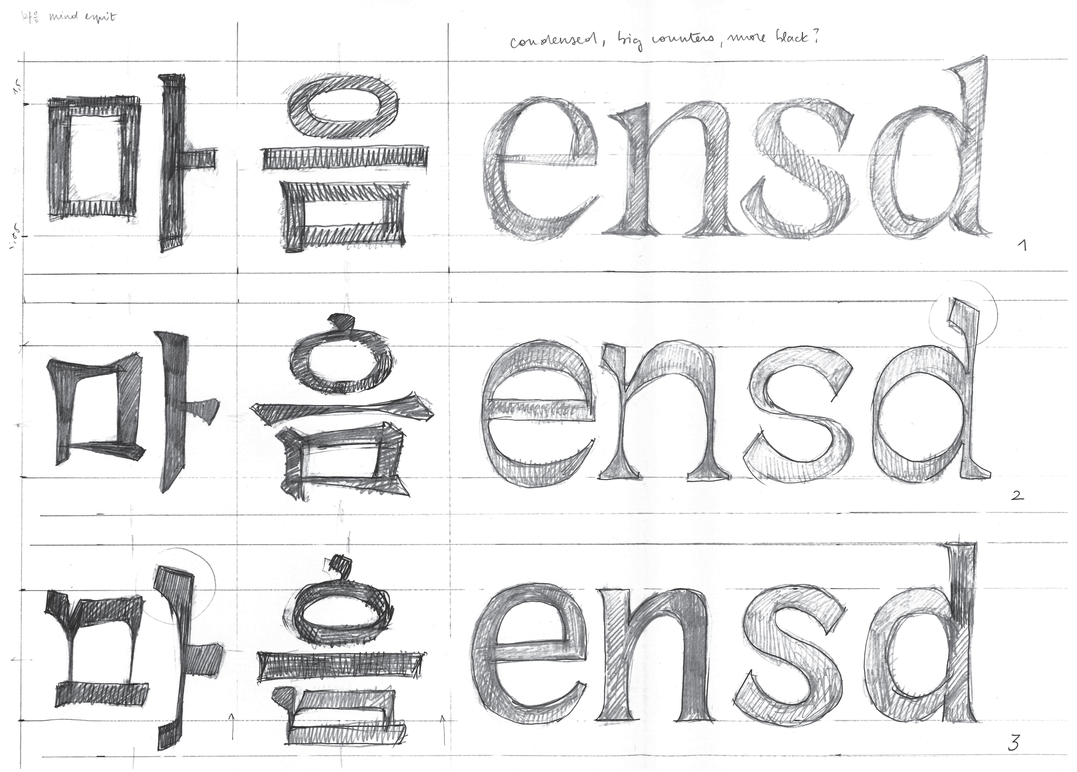
1

2



3

1. 세리프와 부리 비교.
Comparing serif and buri.
2. 삼중언어로 이루어진 ANRT 모집 공고 포스터 배소현, 2019
ANRT Call for applications poster in three languages *So-Hyun Bae, 2019*
3. 포스터 디테일.
Poster detail.



4

5

4. 글꼴 디자인을 통해 타이포그래픽 '매처메이킹'과 '매치브레이킹'의 균형잡기. 언어에 따라 선의 강약을 변화하는 글꼴 구상.
How to find a balance between matchmaking and matchbreaking in type design? Sketching a font with different contrast for each languages.
5. 디지털화한 스케치.
Digitized version of the previous sketch.
6. 선의 강약이 다른 글꼴들로 섞어짜기.
Typesetting in fonts with different contrasts.

나는 뜨거운 커피를 마셨다. J'ai bu un café chaud. I drank a hot coffee. 나는 뜨거운 coffee를 마셨다. 나는 뜨거운 café를 마셨다. 나는 hot한 커피를 마셨다. 나는 hot한 coffee를 마셨다. 나는 hot한 café를 마셨다. 나는 chaud한 커피를 마셨다. 나는 chaud한 coffee를 마셨다. 나는 chaud한 café를 마셨다. 나는 뜨거운 커피를 drink했다. 나는 뜨거운 coffee를 drink했다. 나는 뜨거운 café를 drink했다. 나는 hot한 커피를 drink했다. 나는 hot한 coffee를 drink했다. 나는 hot한 café를 drink했다. 나는 chaud한 커피를 drink했다. 나는 chaud한 coffee를 drink했다. 나는 chaud한 café를 drink했다. 나는 뜨거운 커피를 boire했다. 나는 뜨거운 coffee를 boire했다. 나는 뜨거운 café를 boire했다. 나는 hot한 커피를 boire했다. 나는 hot한 coffee를 boire했다. 나는 hot한 café를 boire했다. 나는 chaud한 커피를 boire했다. 나는 chaud한 coffee를 boire했다. 나는 chaud한 café를 boire했다. J'ai bu un café chaud. J'ai bu un coffee chaud. J'ai bu un 커피 chaud. J'ai bu un café hot. J'ai bu un coffee hot. J'ai bu un hot coffee. J'ai bu un hot 커피. J'ai bu un 뜨거운 café. J'ai bu un 뜨거운 coffee. J'ai bu un 뜨거운 커피. J'ai bu a café chaud. J'ai bu a coffee chaud. J'ai bu a 커피 chaud. J'ai bu a hot café. J'ai bu a hot coffee. J'ai bu a hot 커피. J'ai bu a 뜨거운 café. J'ai bu a 뜨거운 coffee. J'ai bu a 뜨거운 커피. I drank a hot coffee. I drank a hot café. I drank a hot 커피. I drank a chaud coffee. I drank a coffee chaud. I drank a 커피 chaud. I drank a 뜨거운 coffee. I drank a 뜨거운 커피. I drank a chaud café. I drank a café chaud. I drank a 뜨거운 café. I drank un hot coffee. I drank un hot café. I drank un hot 커피. I drank un coffee chaud. I drank un 뜨거운 coffee. I drank un café chaud. I drank un 뜨거운 café.

6

아침 8시, 눈을 뜬다.
아침 8시, 눈을 open한다.
아침 8시, 눈을 ouvrir 한다.
아침 8시, eyes을 뜬다.
아침 8시, 을 뜬다.
아침 8시, eyes을 open한다.
아침 8시, eyes을 ouvrir 한다.
아침 8시, 을 open한다.
아침 8시, 을 ouvrir 한다.
By 8am, 눈을 뜬다.
By 8am, eyes을 뜬다.
By 8am, 을 뜬다.
By 8am, 눈을 open한다.
By 8am, eyes을 open한다.
By 8am, 을 open한다.
By 8am, 눈을 ouvrir 한다.
By 8am, eyes을 ouvrir 한다.
By 8am, 을 ouvrir 한다.
À 8am, 눈을 뜬다.
À 8am, eyes을 뜬다.
À 8am, 을 뜬다.
À 8am, 눈을 open한다.
À 8am, eyes을 open한다.
À 8am, 을 open한다.
À 8am, 눈을 ouvrir 한다.
À 8am, eyes을 ouvrir 한다.
À 8am, 을 ouvrir 한다.
À 8h du matin, 눈을 뜬다.
À 8h du matin, eyes을 뜬다.
À 8h du matin, 을 뜬다.
À 8h du matin, 눈을 open한다.
À 8h du matin, eyes을 open한다.
À 8h du matin, 을 open한다.
À 8h du matin, 눈을 ouvrir 한다.
À 8h du matin, eyes을 ouvrir 한다.
À 8h du matin, 을 ouvrir 한다.
À 8h du morning, 눈을 뜬다.
À 8h du morning, eyes을 뜬다.
À 8h du morning, 을 뜬다.
À 8h du morning, 눈을 open한다.
À 8h du morning, eyes을 open한다.
À 8h du morning, 을 open한다.
À 8h du morning, 눈을 ouvrir 한다.
À 8h du morning, eyes을 ouvrir 한다.
À 8h du morning, 을 ouvrir 한다.
À 8h du 아침, 눈을 뜬다.
À 8h du 아침, eyes을 뜬다.
À 8h du 아침, 을 뜬다.
À 8h du 아침, 눈을 open한다.
À 8h du 아침, eyes을 open한다.
À 8h du 아침, 을 open한다.
À 8h du 아침, 눈을 ouvrir 한다.
À 8h du 아침, eyes을 ouvrir 한다.
À 8h du 아침, 을 ouvrir 한다.
By 8h du 아침, 눈을 뜬다.
By 8h du 아침, eyes을 뜬다.
By 8h du 아침, 을 뜬다.
By 8h du 아침, 눈을 open한다.
By 8h du 아침, eyes을 open한다.
By 8h du 아침, 을 open한다.
By 8h du 아침, 눈을 ouvrir 한다.
By 8h du 아침, eyes을 ouvrir 한다.
By 8h du 아침, 을 ouvrir 한다.
By 8am, I open my eyes.
By 8am, I open my 눈s.
By 8am, I open mes yeux.
By 8am, I open mes 눈.
By 8am, I ouvre my eyes.
By 8am, I ouvre my 눈s.
By 8am, I ouvre mes yeux.
By 8am, I ouvre mes 눈.
By 8am, , my eyes.
By 8am, , my 눈s.
By 8am, , j ouvre mes yeux.
By 8am, , mes 눈.
By 8am, ,open my eyes.
By 8am, ,open my 눈s.
By 8am, ,open mes yeux.
By 8am, ,open mes 눈.
À 8h du matin, I open my eyes.
À 8h du matin, I open my 눈s.
À 8h du matin, I open mes yeux.
À 8h du matin, I open mes 눈.
À 8h du matin, I ouvre my eyes.
À 8h du matin, I ouvre my 눈s.
À 8h du matin, I ouvre mes yeux.
À 8h du matin, I ouvre mes 눈.
À 8h du matin, , my eyes.
À 8h du matin, , my 눈s.
À 8h du matin, , j ouvre mes yeux.
À 8h du matin, , mes 눈.
À 8h du matin, ,open my eyes.
À 8h du matin, ,open my 눈s.
À 8h du matin, ,open mes yeux.
À 8h du matin, ,open mes 눈.
À 8h du 아침, I open my eyes.
À 8h du 아침, I open my 눈s.
À 8h du 아침, I open mes yeux.
À 8h du 아침, I open mes 눈.
À 8h du 아침, I ouvre my eyes.
À 8h du 아침, I ouvre my 눈s.
À 8h du 아침, I ouvre mes yeux.
À 8h du 아침, I ouvre mes 눈.
À 8h du 아침, , my eyes.
À 8h du 아침, , my 눈s.
À 8h du 아침, , j ouvre mes yeux.
À 8h du 아침, , mes 눈.
À 8h du 아침, ,open my eyes.
À 8h du 아침, ,open my 눈s.
À 8h du 아침, ,open mes yeux.
À 8h du 아침, ,open mes 눈.

By 8am, eyes을 뜬다. I leave my bed, shower을 하고, dry my hair. I walk out of la salle de bain with 젖은 feet, and cuisine으로 간다.

À 8a.m, 눈을 뜬다. Je me lève de my bed, take a shower, dry my cheveux. 젖은 발로 목욕탕에서 walk out 하고 부엌으로 간다.

À 8 a.m., 눈을 뜬다 Je me lève de my bed, take a shower, dry my cheveux, 젖은 발로 목욕탕에서 walk out 하고 부엌으로 간다.

À 8 a.m., 눈을 뜬다, Je me lève de my bed, take a shower, dry my cheveux, 젖은 발로 목욕탕에서 walk out 하고 부엌으로 간다.

À 8a.m., 눈을 뜬다. Je me lève de my bed, take a shower, dry my cheveux.
젖은 발로 목욕탕에서 walk out 하고 부엌으로 간다.

By 8a.m., eyes을 뜬다. I leave my bed, shower을 하고, dry my hair. I walk out of la salle de bain with 젖은 feet, and cuisine으로 간다.

By 8a.m., eyes을 뜬다. I leave my bed, shower을 하고, dry my hair. I walk out of la salle de bain with 젖은 feet, and cuisine으로 간다.

7. 한국어, 프랑스어, 영어 베이스라인 높이에 차이를 두어서 매치브레이킹 시도.
Trying matchbreaking by changing the baseline of each language.

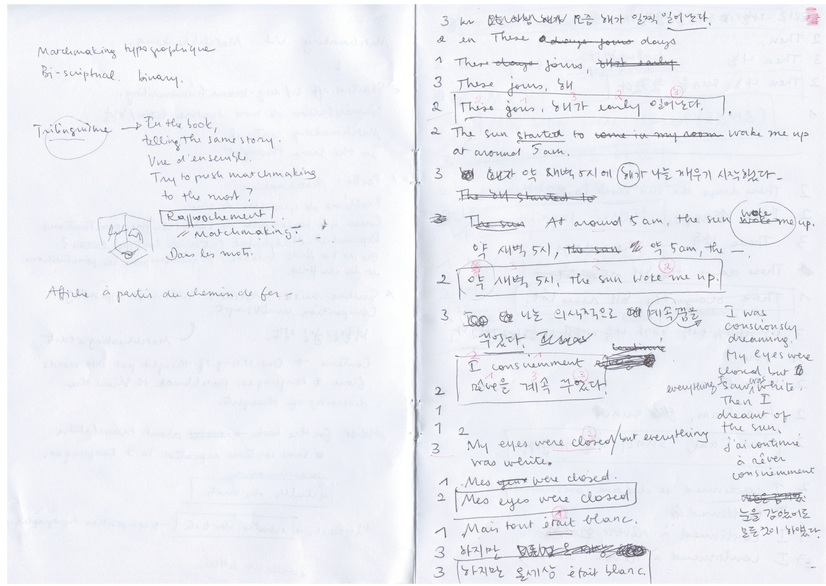
8. 다양한 매치브레이킹 시도.
Various tests of matchbreaking.

삼중언어 쓰기

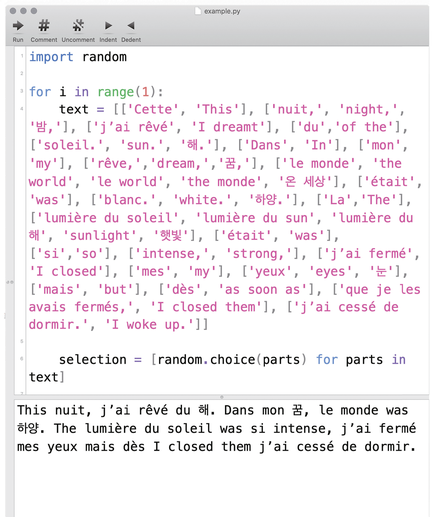
오늘날 세계화로 다국어를 구사하는 사람들이 늘고 있다. 특히 이는 세계 곳곳에 흩어져있는 다국어 디아스포라에서 많이 볼 수 있는 현상이다. 여러 언어들을 섞어가며 소통하는 이 공동체는 사실상 새로운 하이브리드 마이크로 (hybrid--micro) 언어들의 발전에 기여하고 있다. 그러나 소수만 사용하고 알아들을 수 있는 이 하이브리드 마이크로 언어는 방언이나 마찬가지다. 주로 휴대폰 문자 또는 채팅과 같은 빠른 소통이나 개인적로 노트를 할때 쓰이기때문에 썼다가 금방 사라지는 한계를 지니고 있다. 이 연구 프로젝트는 글꼴 · 시각 관점에서만 아니라, 삼중언어로 된 글쓰기 장식을 실험함으로써 하이브리드 마이크로 언어를 방언에서 문어로 전환할 수 있는 가능성을 모색하는 것이다.

Writing in Trilingual

Our current situation in regards of globalization enhances multilingualism, especially among diaspora communities. These groups, which mix words and expressions from different languages, contribute to the development of hybrid micro-languages. However, this mode of communication tends to remain vernacular. Apart from being used as a mean for personal note-taking or fast communication via sms and chats, the written form of these hybrid languages seems limited to an ephemeral writing. While aiming to go beyond (typo)graphic aspects, this research also experiments the written form of trilingualism to investigate this transition from vernacular to literature.



9. 삼중언어로 글쓰기.
Writing in trilingual.



10

전날 nuit , sun 을 꿈꾸었다 ■

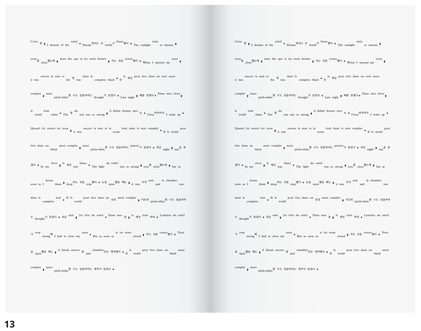
11

전날 nuit 에 sun 을 꿈꾸었다 ■ Dans mes dreams , le monde was blanc ■

Lumière du sun 이 trop 강해 I had to fermer mes 눈 ■ Close 하자마자 깨어났다 ■

When j'ai ouvert my yeux , it was encore 밤 and la room was noir complet in ■

12



13

10. 자동적으로 삼중언어 글을 만들어내는 프로그램 코딩.
Coding a trilingual text generator.

11. 불어와 영어가 같은 글꼴을 공유하되 불어는 윗 베이스라인, 영어는 아랫 베이스라인으로 정하여 매치브레이킹. 한국어는 라틴 글꼴 모양에 어울리는 (매치메이킹) 글꼴로 불어와 영어사이에 조판된다. 문장부호들과 숫자들은 공통 공간을 차지한다.
Although French and English share the same font, they are placed on different baselines: French on the top baseline, English on the bottom. Korean is typeset in a font with similar aspects to the Latin font (matchmaking) and placed between French and English. The punctuations and numbers share a common space.

12. 문장 조판 예시, 글줄 단위로 보기.
Examples of typeset sentences. Viewing in the scale of lines.

13. 스프레드 단위로 보기.
Viewing in the scale of a spread.

마지막 de day third grade ■ I walked towards la maison accompanied of my mother who m'avait prêté her hand pour the 길 ■ I turned 계속 la tête pour dire à farewell my friends qui were éclairés en contre-jour par le du sun evening ■ These adieux étaient all the more importants car je knew que cet été was going to be différent from previous ones et effectivement , il s'avère que ce n'était que the début d'une année restless ■

At home , the 가구 lost leur raison of 존재성 and waited d'être embarqués in leur first trip to Corée ■ Pour moi , ce n'était certainement not the first time car je spent always mes summer breaks there ■ Jusqu'à ce que j'avais 9 years old je n'ai connu que la Corée estivale et l'été Korean ■

But this time après living 6년 en France je savais that j'allais y stay er to learn all its 계절들 and discover it in all ses états ■

Tout s'est passé so vite ■ Du 착륙 at 인천 until I retrouve myself à marcher once again avec my 엄마 towards my new 학교 aux red 벽돌 ■ When we est arrivé à the 입구 of the 건물 , I learned that we had to take off our 신발 , put them dans a sac and wear des chaussons ■ Unlike the bright rouge of l' exterior , the 복도 were sombres and mes 하얀 chaussons me paraissaient indiscrets ■ As we arrived devant my classe , ma mère made a sign by the 창 de the 교실 ■ An authoritarian woman nous a ouvert la porte et welcomed me ■ Je me suis ainsi retrouvée devant everybody to me présenter , holding 꽉 dans my mains the sac à chaussures ■