MISSING SCRIPTS

ALPHABETUM IV
2019

MISSING SCRIPTS

THE PROPOSALS

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With luck, the future of computing and electronic communications will be longer than the past.

Joseph D. Becker, *Unicode 88,* 1988

Missing Scripts — the proposals
Johannes Bergerhausen

Visible Speech, 1867

Alexander Melville Bell, a Scottish phonetician, developed a universal phonetic notation system called 'Visible Speech' which could represent every sound in every human language. The abstract, often circular symbols, could also help the deaf learn to understand spoken language. Melville Bell's son Alexander Graham Bell, continued his father's work on 'Visible Speech', involving himself intensively with the physiognomy of the human voice. In 1876, he would submit his new invention to the patent office: the telephone.

International Phonetic Alphabet, 1888

The International Phonetic association, established in 1886 by the French linguist Paul Édouard Passy, introduced the International Phonetic Alphabet (IPA) in 1888. These characters were developed on the basis of Latin and Greek characters, revealing the bias of the researchers of that time. They missed the chance of taking more appropriate characters from other writing systems.

Aerodynamic phonetics, 1888

Johanna Zinke, a German art teacher, developed a process by which the spoken sounds of any human speaker could be made photographically visible. The spoken sound is in this process not only an acoustic phenomenon, but also a quickly generated three-dimensional form akin to those produced in fluid dynamics and chaos theory.

Intergalactic Network, 1962

J. C. R. Licklider, an American psychologist, formulated the idea of an 'Intergalactic Computer Network'. The computers of that time could fill up entire rooms. A year later, he half-jokingly referred to his colleagues as 'Members and Affiliates of the Intergalactic Computer Network'. But it was less of a joke than he had imagined. Within 7 years, Licklider was one of the developers of the ARPA-net, the precursor of the Internet.

ASCII, 1963

Bob Berner, a computer scientist at IBM, led a group of engineers developing the American Standard Code for Information Interchange, widely known as ASCII. No one imagined at the time that a purely American character encoding standard would still be in use on every computer in the 21st century. ASCII defined 95 typographic symbols and 33 control codes used to communicate between computers. The standard, which proved itself to be fundamental to the early Internet, was integrated as a subset of Unicode in 1991 and as such is nearly as well distributed as the DNA code.

ARPA-net, 1969

50 years ago, during the same year as Woodstock and the Moon Landing, ARPA-net, named after the Advanced Research Projects Agency (ARPA), and forerunner of today's Internet, went online. It originally connected four American universities each with just one computer. The first ever message delivered over the network on 29th of October, 1969 was the word 'LOG', meaning 'LOGIN'. The L and O were transmitted successfully in binary sequences but during the processing of the letter G, one of the two computers crashed.

Xerox PARC, Dynabook, 1971

Xerox corporation was so successful with their photocopy machines, they were able to fund the archetypal technology research center in California exploring the future of office work. The team at Xerox Palo Alto Research Center (PARC) in the 1970s would invent the signature technologies of the ensuing decades: the personal computer, the Graphical User Interface (GUI), the laser printer, and the Ethernet.

In 1971, Xerox employees English and Lampson designed the character generator, which was the first GUI type design program. The psychologist and PARC researcher Alan Kay, who foresaw, with his Dynabook concept, the development of the laptop by 20 years, tells us in a speech in 1986: »Here is an interesting thing: What do you do when you are doing a rough draft and you are printing it out in Times Roman? And the answer is: you use our own handwriting! I never understood why this didn't catch on [in type design].«

Writing, Typing

We informally say we are 'writing' on a computer. Of course, we do not mean we are writing by hand (Chirography) but rather we are 'typing' from the Greek τυπογραφία: Typographia: writing with types. This is an abstract process. One no longer writes or draws an 'A' but rather types on the 'A' key and an 'A' is displayed on the screen. This is still, in principle, the same process as with a typewriter.

Interpress, 1982

Since he could not get any support or interest for the page description language he developed at Xerox PARC, John Warnock quit his job and went on to found his own company. He called his new software PostScript and his company Adobe.

Xerox and Apple, 1984

The Xerox-PARC researcher, and later co-founder of Unicode, Joseph D. Becker, published the groundbreaking paper 'Multilingual Word Processing' in *Scientific American,* where the important distinction is made between characters and glyphs.

In the same year, Steve Jobs presented the first Macintosh, which employed and further developed many ideas pioneered at Xerox PARC.

Unicode 88

In his nine-page paper 'Unicode88', Joseph D. Becker foresees the »need for a new, world-wide ASCII«. When humanity develops worldwide networked computers, the Latin ASCII letters will no longer be sufficient. Becker outlines the main features of the Unicode Consortium, which would be founded two years later.

Apple Newton, 1997

After 12 years at Next and Pixar, Steve Jobs returned to the first company he founded. It would not take him long to complete development of the Newton platform with its shaky handwriting recognition. Jobs remarked in 2003 at the All Things Digital conference: »It's really slow to write stuff [by hand]! You could never keep up with your email if you had to write it all out.«

World Standard

Unicode 12.1, released in May 2019, encodes 137,929 characters. This means that today exactly 150 scripts can be used on computers (and smartphones). Every year, new characters are added to this world standard. These can then be found in the operating system updates of all computers (including smartphones). Among these new characters, new emojis are added every year.

The Unicode consortium decides which characters are typographically available to people — and which are not. The consortium, registered in Mountain View, California, is primarily made up of representatives from the IT industry giants.

Apart from Apple, Facebook, Google, IBM, or Microsoft, very few state institutions are represented. The academic world is also hardly represented. An exception would be the Script Encoding Initiative (SEI), led by the linguist Dr. Deborah Anderson from the Department of Linguistics at UC Berkeley. The Mainz university project decodeunicode is a liaison member without voting rights.

Any institution or company can become a member of the consortium. Through a 'full membership' at $21,000 USD per year, one has the right to vote and can participate in decisions.

The Internet speaks Unicode worldwide. There is no competition. For example, without this standard we could not send text messages from the Netherlands to Russia today. It would be impossible to have both Cyrillic and Latin letters in text messages without Unicode.

Languages ≠ Scripts ≠ Countries, 2019

Brief overview: Ethnologue.com catalogs 7,111 known living languages, SEI Berkeley defines 290 scripts and the United Nations has 193 member states. There are people from 180 countries living in a city like The Hague.

Cultural achievement

Unicode is increasingly becoming a collection of human writing systems. For us, this is not only a technical, but also a cultural achievement. It amazes us that such a utopian project has gained real international acceptance and is available on every computer. The world speaks, at least on this level, one language.

Characters and glyphs

Unicode defines many technical specifications, but the principle of character encoding is simple. Each character is assigned a name and a hexadecimal number. Thus the letter A is encoded as LATIN CAPITAL LETTER A with the number U+00041 (00041 is hexadecimal for decimal 65).

So when one sends an A by SMS or e-mail, one does not send the graphic form (glyph) of the letter, only the code. The receiving device receives a binary string, interprets the hexadecimal value and represents the matching glyph.

Unicode does not specify the appearance of characters. This is the work of the type designer. The transcription through code is akin to the Platonic concept of the character free of any particular form. Unicode encodes characters — not glyphs.

When is an A an A?

Is it even possible to give a character a determinate form? For example, one might claim that the upper half of a capital A is always pointed, but it is easy to find examples where this is not the case.

Likewise, there are many glyphs for A that have no crossbeam but are still easily recognized as A.

Part of the definition of the character A might be that it is one of the 26 (or 52) letters of the Latin alphabet, that it is read from left to right, and that it usually stands for the sound /a/. However, such properties are emergent from the context and are form-independent.

We claim that an A is only really defined through its encoding into Unicode. Only thus can there be an international agreement about the character.

The definition of a character involves cultural conventions. If the glyphs look too similar, the name or code position can help distinguish them. For example, the two characters ¬ and ⅂ are almost indistinguishable, but in Unicode the former is called BOX DRAWINGS LIGHT DOWN AND LEFT, so it is always a perfect right-angle, while the latter is called TIRONIAN SIGN ET, a glyph from Roman times whose angle may vary.

Missing Scripts

Unicode has significantly reduced the relative visual presence of the Western (or, rather, the Latin) world. At the time of ASCII, it was almost impossible to display 'exotic' letters on the computer.

Imagine you could not use your own script on your smartphone. Unicode has remedied this for most writing systems. 150 scripts are usable today, a great success.

But there is still a lot to do. A first step of the Missing Scripts project at the Institut Designlabor Gutenberg (IDG) at Mainz University of Applied Sciences and at the Atelier National de Recherche Typographique (ANRT) in Nancy, was to ask Dr. Deborah Anderson (SEI) how many writing systems are missing from Unicode. After consulting her experts worldwide, she responded with an amazing number: 140. Only about half of the world's writing systems are available on today's computers.

United Nation of Type

Without binary code, scripts cannot be used on computers. This means that cultures whose writing systems are not accommodated by Unicode cannot be digitized, stored or published as texts without conversion to binary codes. Additionally, any culture so affected cannot compose and distribute new digital texts either. Every writing culture in the world should be able to disseminate and extend its cultural heritage on all modern devices. Unicode is becoming a kind of assembly of the united typographic nations. Here, every culture should be represented.

Historical Scripts

32 historical scripts have not yet been included in Unicode. The question here is whether it is worth encoding a script whose last users have died out thousands of years ago.

In a sense, no script is ever really extinct. Somewhere in the world there are scientists (or enthusiasts) still working with these historical texts. For example, there are around 3,000 people worldwide who can read and write cuneiform. This community also wants to use these characters in text editing programs. This is why they have to be encoded and included.

At the University of Bonn, there is a 10-year project to develop a dictionary of Mayan hieroglyphs. Without character encoding, these researchers will be at a loss. The dictionary won't be able to be published online (or be printed) unless the characters have been encoded and glyphs designed. Once this is done, it becomes available to humanity and can be copied and passed on freely.

Perhaps if all Mayan texts become available online, new possibilities for research will emerge through text comparisons and full-text search.

If we want to achieve the utopian-real goal of one day making available all the texts of humanity, we must also encode extinct scripts and digitize their texts.

7 out of 290

Incidentally, of the 290 scripts, there are exactly 7 that have not yet been deciphered. One is Rongo Rongo, a playground for researchers and adventurers.

The World's Writing Systems

As a first step in the long-term project 'Missing Scripts' of IDG Mainz, ANRT Nancy and SEI Berkeley, we researched and designed a representative glyph for each of the 290 writing systems. In this collection, the letter A represents the Latin alphabet as the letter Omega Ω is internationally recognized as Greek.

In cases where there was no representative character, for alphabets we used the character for the sound /a/, for syllabic scripts the character for /ka/, and for pictographic-ideographic scripts, the character for human body.

In this way, typographic forms have been developed for some writing systems for the first time. This collection was presented with a poster and website *www.worlds-writingsystems.org* in 2018. Research and type design were carried out by Johannes Bergerhausen, Arthur Francietta, Jérôme Knebusch and Morgane Pierson at ANRT.

The Unicode Proposals

In order for a new character or writing system to be implemented in Unicode, a formal application must be made. In 2019, there are exactly 71 proposals for scripts that have not yet been implemented in Unicode. These we have presented in the reading room in alphabetical order. Each proposal can be studied in peace. They have been available online for years but are hardly known. Why have some proposals still not yet been accepted though they were filed years ago?

Acceptance into Unicode is not trivial. First, it must be proven that a community that uses these characters exists. This is sometimes more difficult than one might think. Subsequently, the applicant must prove that the character set is complete. Each character must have a unique name according to scientific standards. It is often not easy to find an expert for an obscure script. Additionally, the information from the community of users is often contradictory.

When is a script a script?

Scripts are writing systems, collections of visual characters which can completely represent at least one human language. Therefore emojis are not scripts.

Sometimes two experts, when presented with two similar scripts, cannot concur whether or not they are 'only' glyph variants of the same script. This is why, for instance in 2001, the Etruscan or Venetian alphabets of the Italian peninsula were encoded under the generic category OLD ITALIC.

Missing living scripts

In Unicode, living scripts take priority. Why do we then still find, among the 71 scripts which have been proposed but not yet accepted, 39 living scripts? Can it have anything to do with the fact that these are used in regions which promise no commercial potential (as yet) for the IT sector? Why has there never been a UNESCO project to ensure that these scripts are taken up as quickly as possible into Unicode? This is surprising given that everyone has been talking about digitization for so long.

Research at ANRT, Nancy

There are scripts for which no confirmed typographic form has been established. During encoding, the script inevitably must make the leap from chirography (handwriting) to typography. This is where research at the ANRT in Nancy, headed by Director Thomas Huot-Marchand, begins. As part of the IDG, ANRT and SEI's 18-month research program Missing Scripts, post-graduate students at ANRT often develop a typographic form for the first time. They consult all available documents and do handwritten and typographic analyses. If they work with a living script, they obtain feedback from the user community. This research program started in 2016.

The proposals in the Alphabetum, the Hague

The present exhibition includes the 71 proposed scripts which have not been encoded, 71 information panels, each with a reference-glyph developed at ANRT, a work of artistic documentary by artist Ilka Helmig, and a presentation of the books which have been useful in the research.

In presenting this, we would like to initiate a discussion of the cultural heritage of writing, the universality of the forms of human written expression, the digitization of World Heritage, and the lack of typographical forms for the Missing Scripts.

Not neutral

The reference glyphs for our project were designed in a monolinear, non-contrasting manner to make the shapes comparable. As with 'conventional' font design, the impression is that all the glyphs were designed with the same (analogue) instrument.

Critics might say that this is a Western approach. — We would agree. Our typographic eyes were trained in the 'Western World'. But one might also draw these characters in another style. It is easy to imagine writing all the shapes with a ballpoint pen. Our glyphs do not claim universality.

Can there be a 'neutral' shape for all glyphs? — No. There is no neutral font. A more general style would perhaps emerge if one were to draw all the characters with a finger in the sand (i.e monolinear rounded, stroke width: one finger). Characters have been written in this manner for millennia, does that mean a finger is a neutral tool?

Latin letters are still very dominant worldwide. Our hardware and software is mainly made in the USA. In type specimen books in the 'Western' world, 'other' writing systems are called 'exotic' or 'Non-Latin' even today. This is as problematic as the term 'World Music'.

General visual typographic laws

Are there 'universal' visual laws according to which the letters of all the most diverse cultures, at least those on this planet, are shaped? — I think so. We must discover these laws. I would like to suggest one principle: gravity. Every type designer knows that there is a 'visual gravity' in the way a character 'stands up'. They 'lie' on the paper. An 'O' can visually 'tilt' left or right if it is not drawn correctly. An 'M' stands sturdily with both legs on the script line, an invisible but imaginary floor. We humans project things we have learned through our natural senses into these glyphs. Therefore, I think that gravity is a first element of the general visual typographic laws.

Two ships passing in the night

It remains astonishing how persistently many disciplines keep to themselves and don't see what is going on around them. This is how it is possible that the excellent work Dr. Deborah Anderson has been doing at SEI since 2002 is still today so little known in the worlds of typography and type design. Likewise, should the Irish linguist Michael Everson, author of the most Unicode proposals, be invited much more often to typography conferences?

Interest in the commercial sector only emerges when smartphones begin to be marketed in a new country and suddenly it becomes apparent that the people there use an obscure script which is not yet available from the operating system. Only Google's Noto-project has the universal vision which is capable of grappling with this task.

Funding for encoding

It is complex work to linguistically and typographically systematize an exotic writing system and to write a proposal for Unicode. Outside of the passionate amateurs, experts cannot sustain this work without funding. It is all the more astounding how the IT sector does not support funding a comprehensive vision. In such a situation, we can only call for Dr. Deborah Anderson's SEI to be funded.

All texts, all times

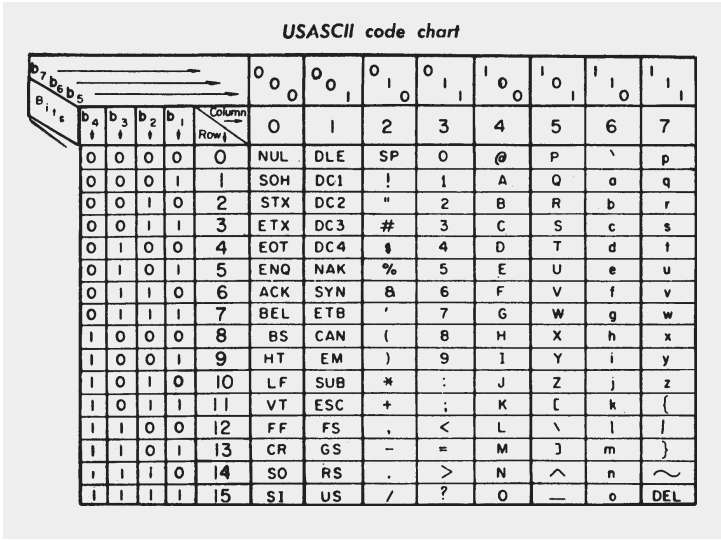
The human project and human dream to make all the texts of all the ages digitally available is today within reach. The time is ripe. This massive undertaking must only take place once in the history of humanity, in the 21st century.

One example: The Murty Classical Library of India aims to make accessible modern translations of all classic Indian texts in print and online. In the first five years, 22 volumes in 12 different languages have been published. A complex, multilingual typographic system is needed for this unique 100-year publishing project.

Missing completed, 2044

Unicode took 27 years to encode 150 scripts. At the same rhythm, all the writing systems of humanity will be united in a universal code around the year 2044. It will have taken a little more than 50 years to encode approximately 5,000 years of written history. The necessity to make all the texts of humanity digitally available will have been achieved.

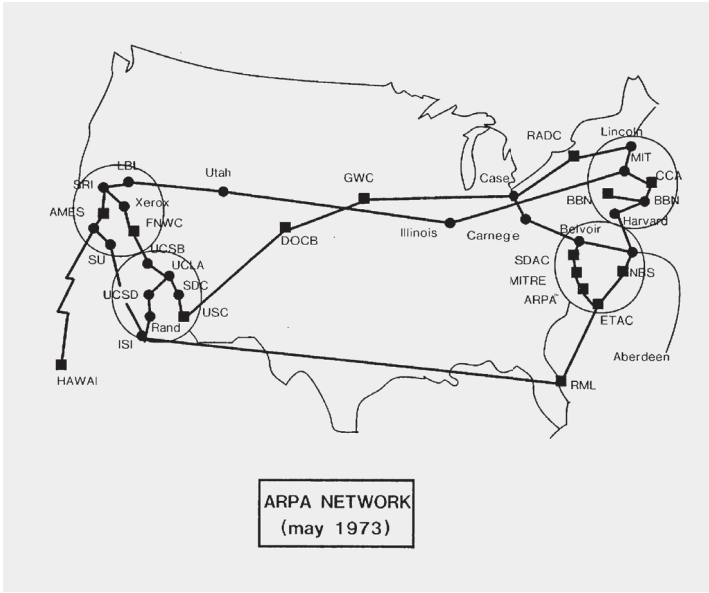
Plates



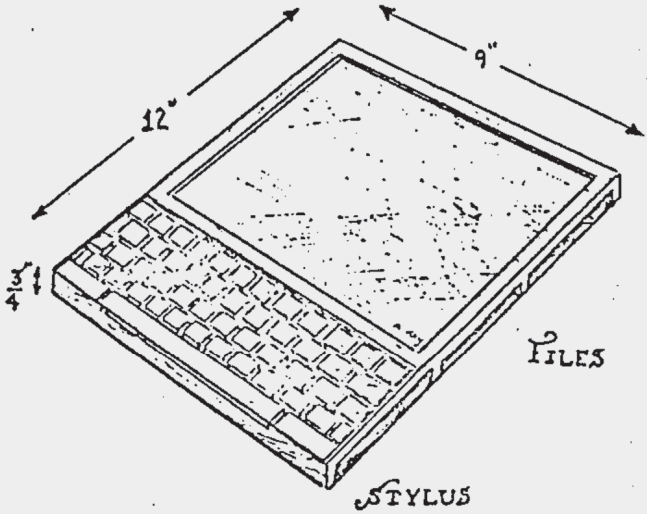
USASCII code chart

Bits b_7 b_6 b_5 →	0 0 0	0 0 1	0 1 0	0 1 1	1 0 0	1 0 1	1 1 0	1 1 1
b_4 b_3 b_2 b_1 ↓ Row ↓ / Column →	0	1	2	3	4	5	6	7
0 0 0 0	0	NUL	DLE	SP	0	@	P	`	p
0 0 0 1	1	SOH	DC1	!	1	A	Q	a	q
0 0 1 0	2	STX	DC2	"	2	B	R	b	r
0 0 1 1	3	ETX	DC3	#	3	C	S	c	s
0 1 0 0	4	EOT	DC4	$	4	D	T	d	t
0 1 0 1	5	ENQ	NAK	%	5	E	U	e	u
0 1 1 0	6	ACK	SYN	&	6	F	V	f	v
0 1 1 1	7	BEL	ETB	'	7	G	W	g	w
1 0 0 0	8	BS	CAN	(	8	H	X	h	x
1 0 0 1	9	HT	EM	)	9	I	Y	i	y
1 0 1 0	10	LF	SUB	*	:	J	Z	j	z
1 0 1 1	11	VT	ESC	+	;	K	[	k	{
1 1 0 0	12	FF	FS	,	<	L	\	l	|
1 1 0 1	13	CR	GS	-	=	M	]	m	}
1 1 1 0	14	SO	RS	.	>	N	^	n	~
1 1 1 1	15	SI	US	/	?	O	_	o	DEL

General Electric, Data communication Products Department: *US-ASCII Code Chart*, 128 characters. Waynesboro, Verginia, USA, ca. 1972

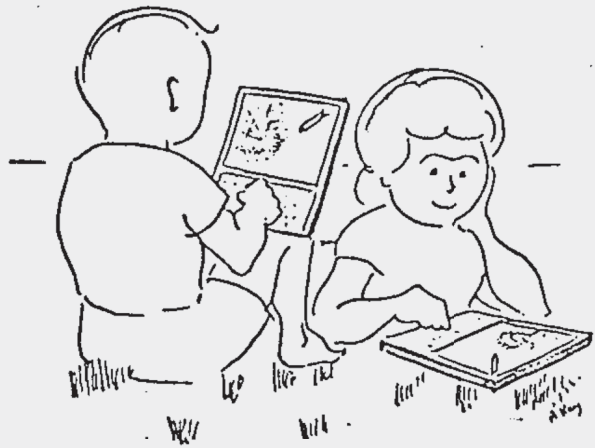


Xerox PARC: *ARPA Network.* in: Alto User's Handbook, page 110, October 1976



We now have some reasons for wanting the DynaBook to exist. Can it be fabricated from currently invented technology in quantities large enough to bring a selling (or renting) price within reach of millions of potential users? The set of considerations which pertain to the more practical aspects of the device such as size, cost, capability, etc.) are just as important as the more abstruse philosophy which prompted us in the first place. The next few pages discuss some of the tradeoffs involved, and will attempt to convince the reader that a target price of $500 is not totally outrageous. The current cost trends and size of the various components do offer considerable hope that the target can be reached. The analogy to color TVs which can be sold for under $500 is also important to keep in mind. Now, what should the DynaBook be?

Alan C. Kay: *A Personal Computer for Children of All Ages.* in: Proceedings of the ACM National Conference, Boston, excerpt from page 6, August 1972



Zap!

ap! With a beautiful flash and appropriate noise
oise, Jimmy's spaceship disintegrated; Beth had
von Spacewar again. The nine-year-olds were
lying on the grass of a park near their home,
:heir DynaBooks hooked together to allow each of
:hem a viewscreen into the space world where
Beth's ship was now floating triumphantly alone.

Alan C. Kay: *A Personal Computer for Children of All Ages.* in: Proceedings of the ACM National Conference, Boston, excerpt from page 2, August 1972

AFÁKA
AMERICA
1908 —— today

BAGAM
AFRICA
1910 —— late 20 c

BALTI A
SOUTH ASIA
1400 —— 20 c

BALTI B
SOUTH ASIA
pre 20 c —— ?

BERIA
AFRICA
1980s —— today

BÉTÉ
AFRICA
1956 —— today

BHUJINMOL
SOUTH ASIA
17 c —— 20 c

BLISSYMBOLS
AUSTRALIA
1949 —— today

BOOK PAHLAVI
MIDDLE EAST
7 c —— 9 c

BRUSHA
CENTRAL ASIA
15 c —— ?

CHORASMIAN
CENTRAL ASIA
2 c —— 7 c

CIRTH
EUROPE
1930s —— today

COORGI-COX
SOUTH ASIA
20 c —— today

CYPRO-MINOAN
EUROPE
–16 c —— –11 c

DHIMAL
SOUTH ASIA
20 c —— today

Bergerhausen, Francietta, Knebusch, Pierson: 71 Reference Glyphs, The Missing Scripts Project; ANRT, IDG, SEI, 2016 — 2019

DIVES AKURU
SOUTH ASIA
12 c —— 18 c

EEBEE HMONG
SOUTHEAST ASIA
1978 —— today

ERSU SHABA
EAST ASIA
12 c —— today

ESKAYA
OCEANIA
1920 —— 1937

GARAY (WOLOF)
AFRICA
1961 —— today

GURUNG (KHEMA)
SOUTH ASIA
20 c —— today

INDUS VALLEY
SOUTH ASIA
–25 c —— –19 c

JENTICHA
SOUTH ASIA
20 c —— today

JURCHEN
EAST ASIA
1120 —— 16 c

KAWI
SOUTHEAST ASIA
8 c —— 16 c

KHAMBU RAI
SOUTH ASIA
20 c —— today

KHATT-I BABURI
CENTRAL ASIA
16 c —— ?

KHITAN LARGE
EAST ASIA
920 —— 1191

KHITAN SMALL
EAST ASIA
925 —— 1191

KHOTANESE
CENTRAL ASIA
5 c —— 11 c

KIRAT RAI
SOUTH ASIA
20 c —— today

KPELLE
AFRICA
1930s —— today

KULITAN
OCEANIA
20 c —— today

LANDA
SOUTH ASIA
15 c —— 20 c

LEKE
SOUTHEAST ASIA
1860 —— today

LOMA
AFRICA
1930s —— today

MAGAR AKKHA
SOUTH ASIA
20 c —— today

MANDOMBE
AFRICA
1978 —— today

MAYAN HIEROGLYPHS
AMERICA
–300 —— 1500

MOON
EUROPE
1845 —— today

MWANGWEGO
AFRICA
1979 —— today

NAXI DONGBA
EAST ASIA
13 c —— today

NAXI GEBA
EAST ASIA
13 c —— today

OLD UYGHUR
CENTRAL ASIA
8 c —— 18 c

ORACLE BONE
EAST ASIA
–1300 —— –1050

PALAEOHISPANIC
EUROPE
–7 c —— 1 c

PALLAVA
SOUTH ASIA
6 c —— 9 c

PAU CIN HAU
SOUTHEAST ASIA
1902 —— today

PITMAN
EUROPE
1837 —— today

PROTO-CUNEIFORM
MIDDLE EAST
–33 c —— –2901

PUNGCHEN
CENTRAL ASIA
15 c —— 15 c

PYU
SOUTHEAST ASIA
5 c —— 1300

RAINA KAMA
AFRICA
1990s —— today

RONGO RONGO
OCEANIA
18 c —— 1860s

SALIFOU HAUSA
AFRICA
1998 —— today

SEAL
EAST ASIA
121 —— 20 c

SHUISHU
EAST ASIA
17 c —— today

TANGSA (KHIMHUN)
SOUTH ASIA
20 c —— today

TANGSA (MOSSANG)
SOUTH ASIA
20 c —— today

TANI
SOUTH ASIA
2001 —— today

TENGWAR
EUROPE
1930s —— today

TIGALARI
SOUTH ASIA
1300 —— today

TIKAMULI
SOUTH ASIA
20 c —— today

TOCHARIAN
CENTRAL ASIA
–8 c —— –8 c

TOLONG SIKI
SOUTH ASIA
late 20 c —— today

VATTELUTTU
SOUTH ASIA
6 c —— 14 c

VITHKUQI
EUROPE
19 c —— 19 c

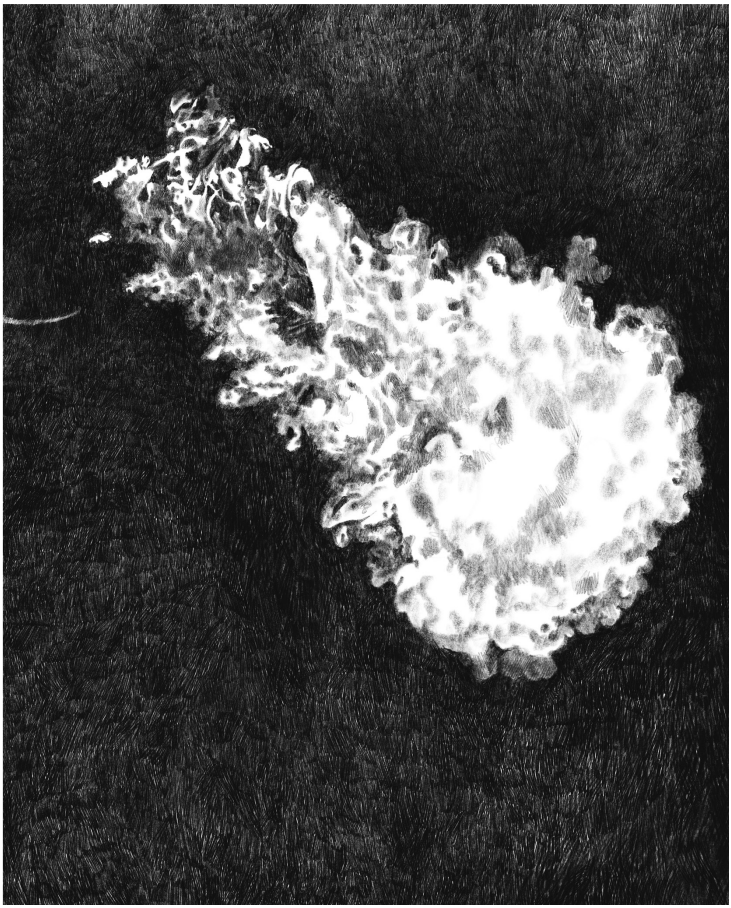
WESTERN CHAM
SOUTHEAST ASIA
10 c ? —— today

WOLEAI
OCEANIA
1905 —— 1950s

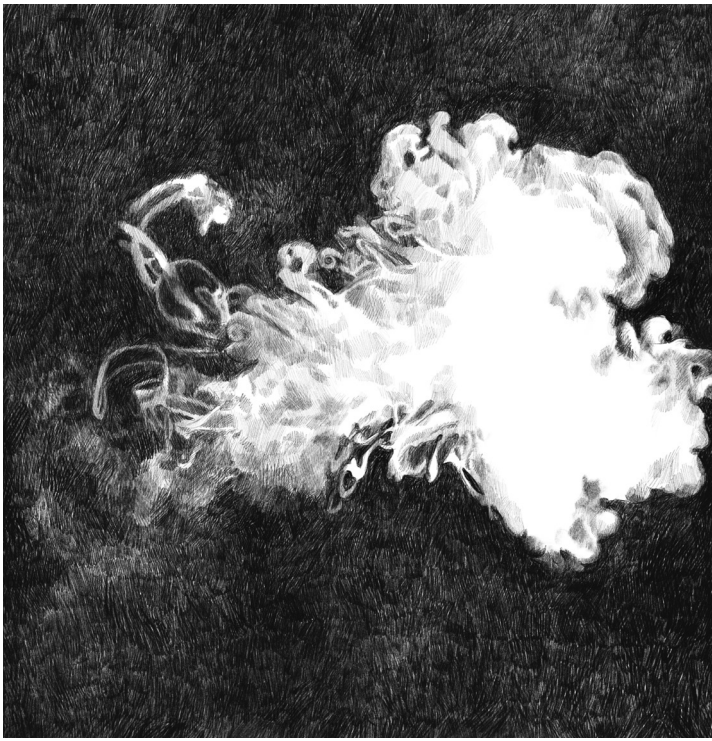
YEZIDI
MIDDLE EAST
? —— today

ZOU
SOUTH ASIA
1952 —— today

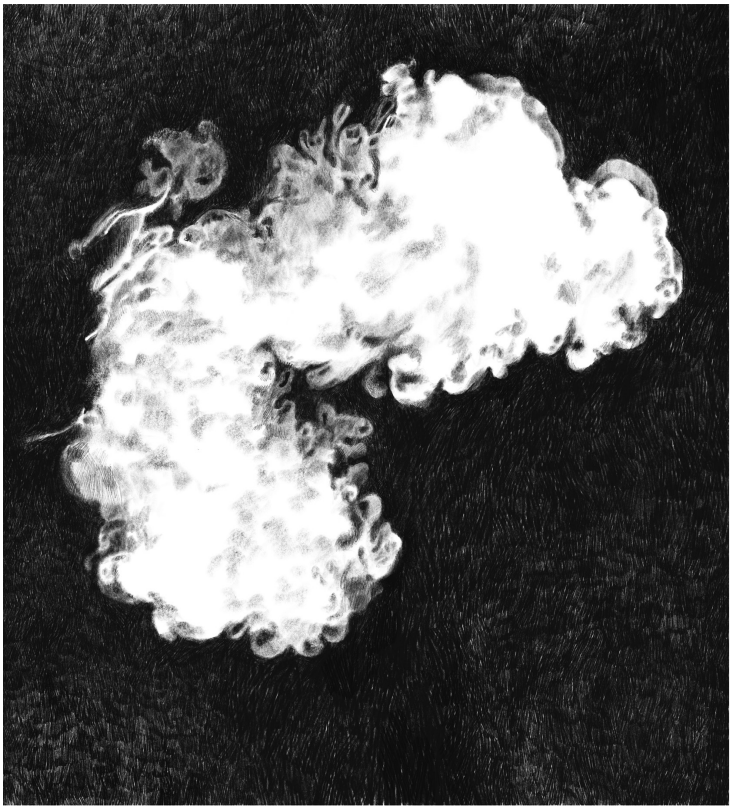
ANRT Nancy, IDG Mainz, SEI Berkeley: *The World's Writing Systems.* 80 × 120 cm, four colour silkscreen printing. Reference glyphs: Bergerhausen, Francietta, Knebusch, Pierson, ANRT. Design: Helmig Bergerhausen, 2018



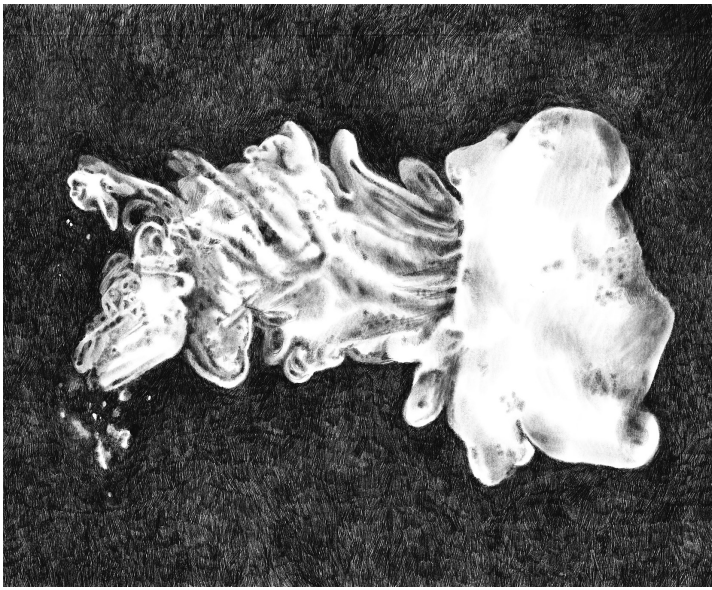
Ilka Helmig: *Ach*, drawing, 2019



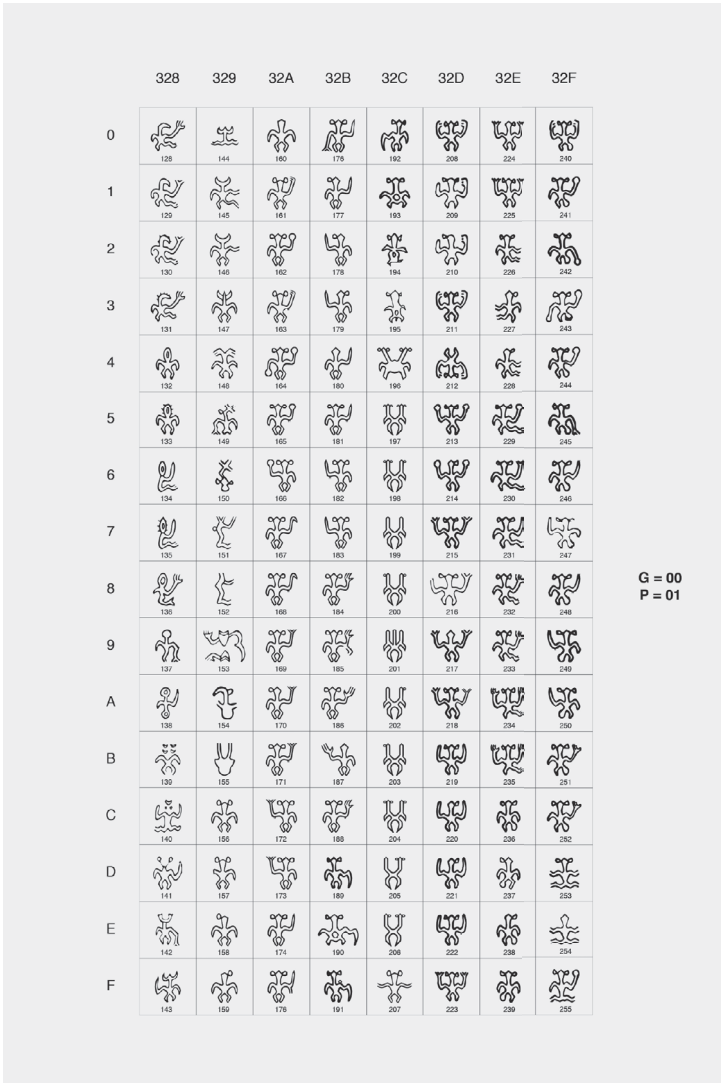
Ilka Helmig: *P,* drawing, 2019



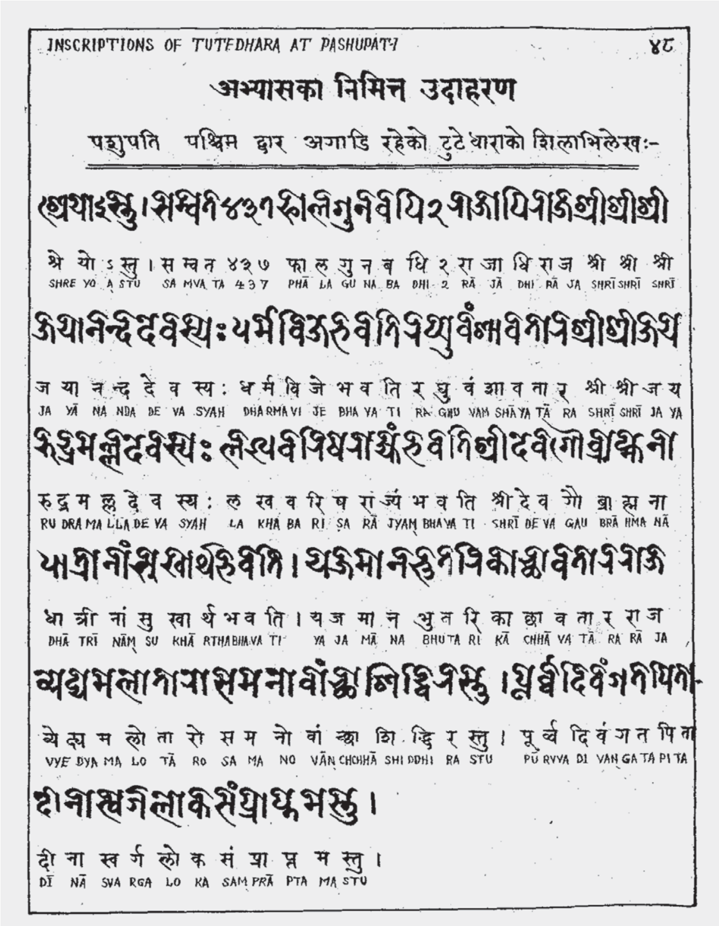
Ilka Helmig: *X,* drawing, 2019



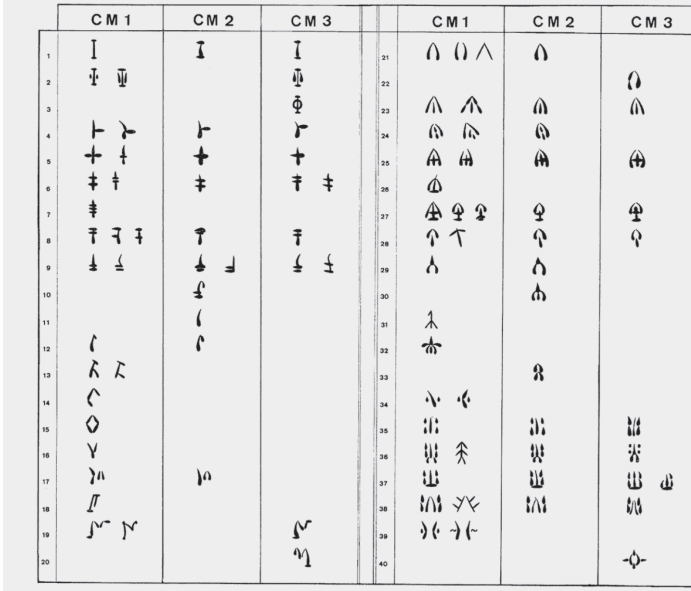
Ilka Helmig: *Ü*, drawing, 2019



Michael Everson: *Proposal for the Universal Character Set* [Rongo Rongo script], 2005



Transcription of an inscription in Bhujinmol, from Shakyavansha, 1974.
Anshuman Panday: *Introducing the Bhujinmol Script,* 2014



Cypro-Minoan sign list from Masson, 1974. Michael Everson: *Revised proposal to encode the Cypro-Minoan script in the SMP of the UCS*, 2016

Consonants

1E530 𑩐 BRUSHA LETTER KA
1E531 𑩑 BRUSHA LETTER KHA
1E532 𑩒 BRUSHA LETTER GA
1E533 𑩓 BRUSHA LETTER NGA
1E534 𑩔 BRUSHA LETTER CA
1E535 𑩕 BRUSHA LETTER CHA
1E536 𑩖 BRUSHA LETTER JA
1E537 𑩗 BRUSHA LETTER NYA
1E538 𑩘 BRUSHA LETTER TA
1E539 𑩙 BRUSHA LETTER THA
1E53A 𑩚 BRUSHA LETTER DA
1E53B 𑩛 BRUSHA LETTER NA
1E53C 𑩜 BRUSHA LETTER PA
1E53D 𑩝 BRUSHA LETTER PHA
1E53E 𑩞 BRUSHA LETTER BA
1E53F 𑩟 BRUSHA LETTER MA
1E540 𑩠 BRUSHA LETTER TSA
1E541 𑩡 BRUSHA LETTER TSHA
1E542 𑩢 BRUSHA LETTER DZA
1E543 𑩣 BRUSHA LETTER WA
1E544 𑩤 BRUSHA LETTER ZHA
1E545 𑩥 BRUSHA LETTER ZA
1E546 𑩦 BRUSHA LETTER -A
1E547 𑩧 BRUSHA LETTER YA
1E548 𑩨 BRUSHA LETTER RA
1E549 𑩩 BRUSHA LETTER LA
1E54A 𑩪 BRUSHA LETTER SHA
1E54B 𑩫 BRUSHA LETTER SA
1E54C 𑩬 BRUSHA LETTER HA

Vowel letter

1E54D 𑩭 BRUSHA LETTER A

Vowel signs

1E54E 𑩮 BRUSHA VOWEL SIGN I
1E54F 𑩯 BRUSHA VOWEL SIGN U
1E550 𑩰 BRUSHA VOWEL SIGN E
1E551 𑩱 BRUSHA VOWEL SIGN O

Various signs

1E553 𑩳 BRUSHA SIGN ANUSVARA
→ 0F7E ◌ྂ tibetan sign rjes su nga ro

Head mark

1E554 𑩴 BRUSHA HEAD MARK
→ 0FD3 ྌ tibetan mark initial brda rnying yig mgo mdun ma

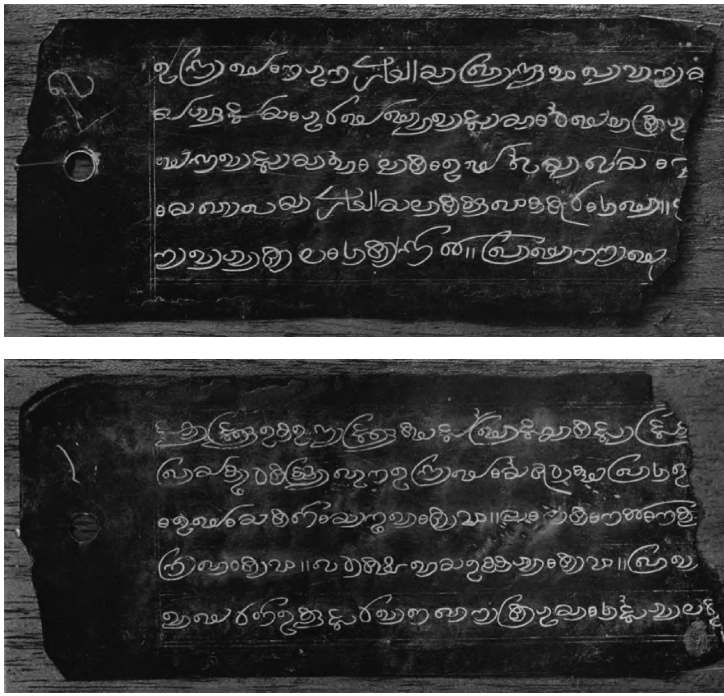
Punctuation

1E555 𑩵 BRUSHA MARK SHAD
→ 0F14 ། tibetan mark gter tsheg

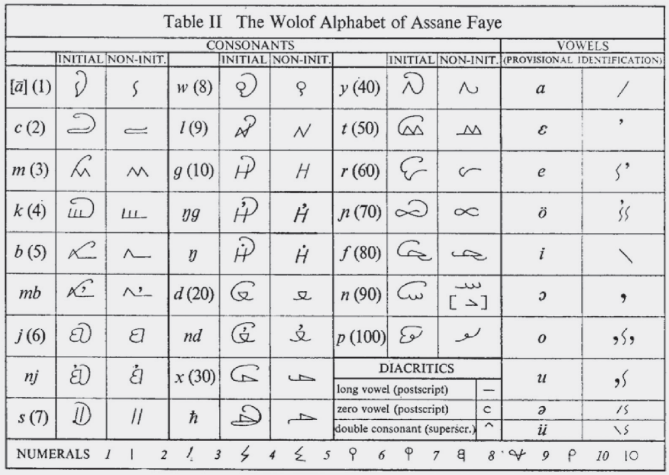
Subjoiner

1E556 ◌𑩶 BRUSHA SUBJOINER
• used for producing conjuncts

Anshuman Panday: ***Preliminary proposal to encode the Brusha script in Unicode,*** **page 2, 2017**



Single plate (fragment). From Bell 1930: Plate III, IV, Lomáfánu Nº 3. Anshuman Pandey: *Proposal to encode Dives Akuru in Unicode,* 2018



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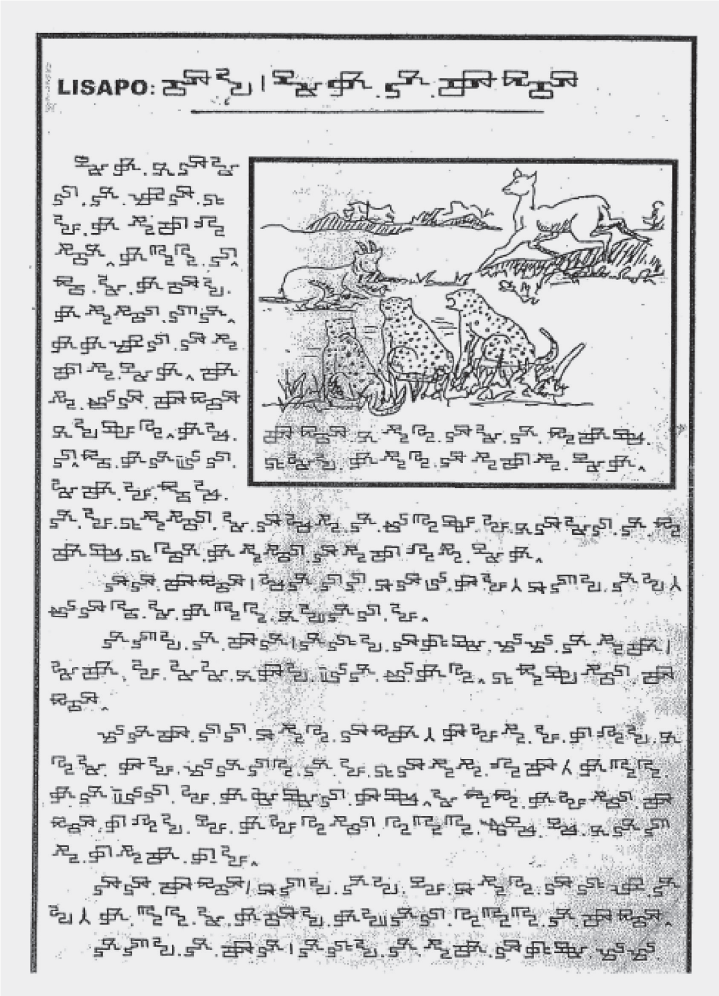

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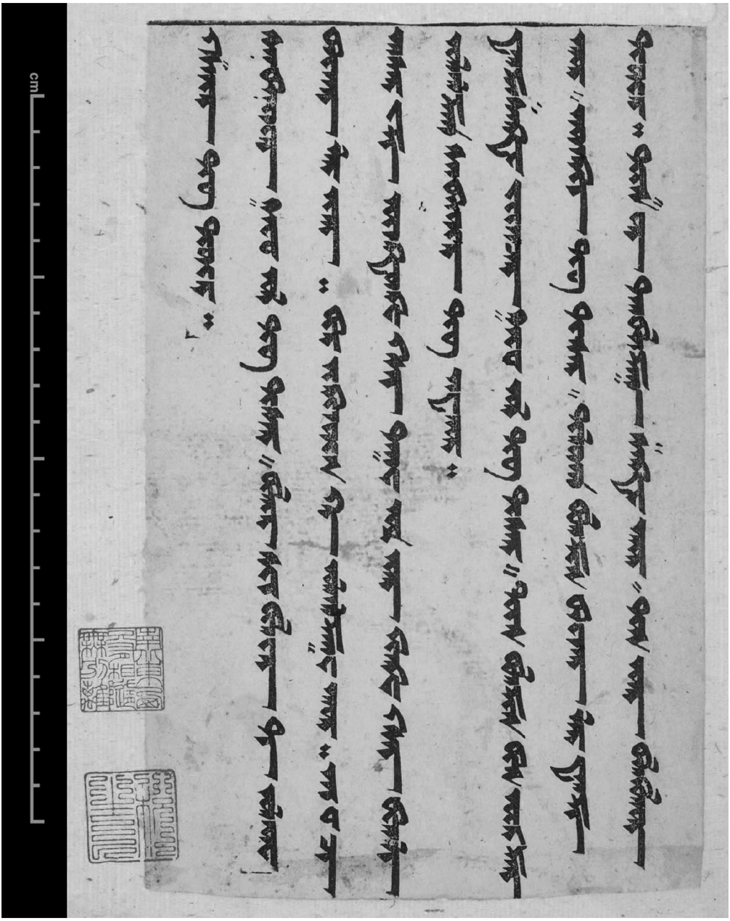

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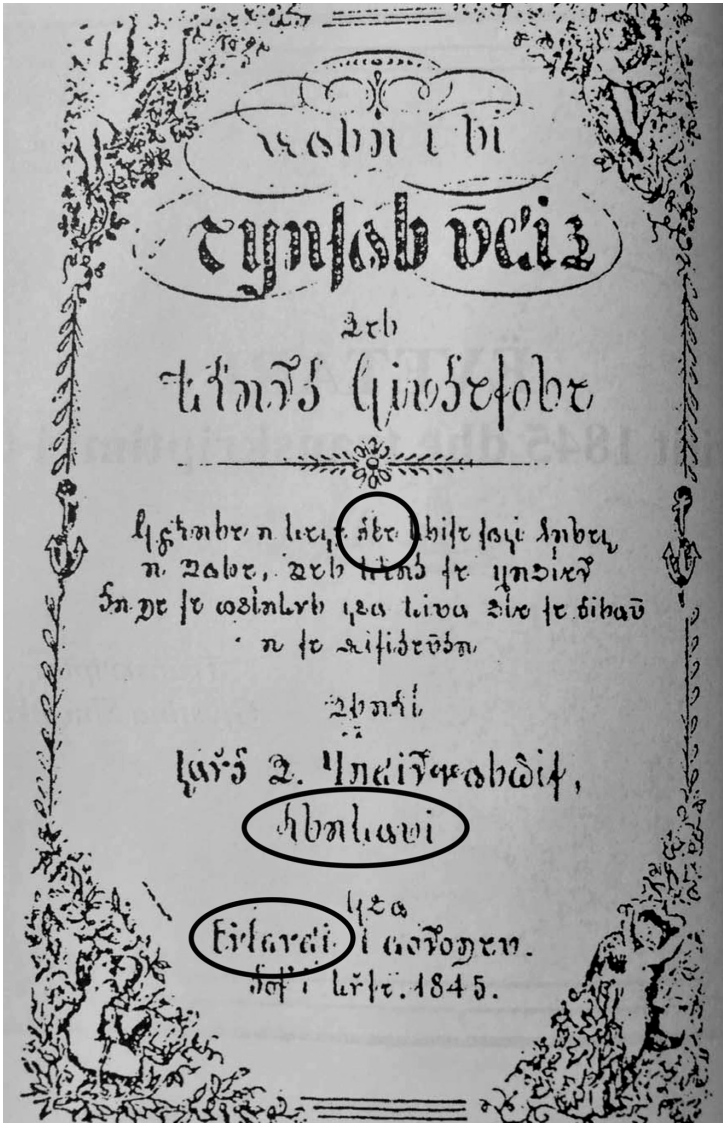

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Anton Stuckardt, Maximilian Giließen: ***Roussel, Brisset, Duchamps. Engineers of the Infra-Thin.*** Alphabetum I, West Den Haag, The Hague, The Netherlands, 2019

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The **Institut Designlabor Gutenberg (IDG),** established in 2004, is a research institute at the Department of Design at the University of Applied Sciences Mainz, Germany, focussing on communication design and typography.

The **Atelier National de Recherche Typographique (ANRT)** is a research unit within the ENSAD Nancy, France. It welcomes new postgraduate students every year and brings together experts in the fields of type design and typography. The 18 month research program develops a singular approach to typographic research, with a strong emphasis on connecting theoretical and practical work.

The **Script Encoding Initiative (SEI),** established in the UC Berkeley Department of Linguistics in 2002, is a project devoted to the preparation of formal proposals for the encoding of scripts and script elements not yet currently supported in Unicode (ISO/IEC 10646).

The **Alphabetum** is an artistic space to explore the formative and formal aspects of language. These aspects are mostly considered separate. Typographers and type-designers are primarily focused on the letterform and writers mostly do not pay attention to the forms of the letters they form into words. The ambition of the Alphabetum is to reveal that these two properties of written language are much more interlinked than is commonly acknowledged. A letter is a letter because it resembles a letter; and because it resembles a letter it is a letter.

Joseph Beuys said that every human being is an artist. Hans Hollein translated this idea into space and time, suggesting that everything is architecture. John Cage proposed that everything we do is music. Would it therefore not be acceptable to declare that every thing is type? When we look at art, music and architecture from a more general point of view, we see that all three disciplines have emerged from the languages we created. We might even argue that art, architecture and music are themselves languages. It is noteworthy that Beuys's, Hollein's and Cage's statements are not formulated in art, architecture and music, but in letters, forming words, combined in statements. Ludwig Wittgenstein once said that the limits of our language are the limits of our world. Could it also be the case that the limits of the alphabet are the limits of our language? This would bring us back to the typographic tautology. A letter is a letter because it resembles a letter, and because it resembles a letter, it is a letter.

The Alphabetum, inaugurated in February 2019, is part of the program of the national art institution West Den Haag.

Missing Scripts — The Proposals
Alphabetum IV
Johannes Bergerhausen, Ilka Helmig

September 28 — November 24, 2019
Curated by Marie-José Sondeijker

in collaboration with
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Atelier National de Recherche Typographique (ANRT), Nancy, France
and Script Encoding Initiative (SEI), Department of Linguists,
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