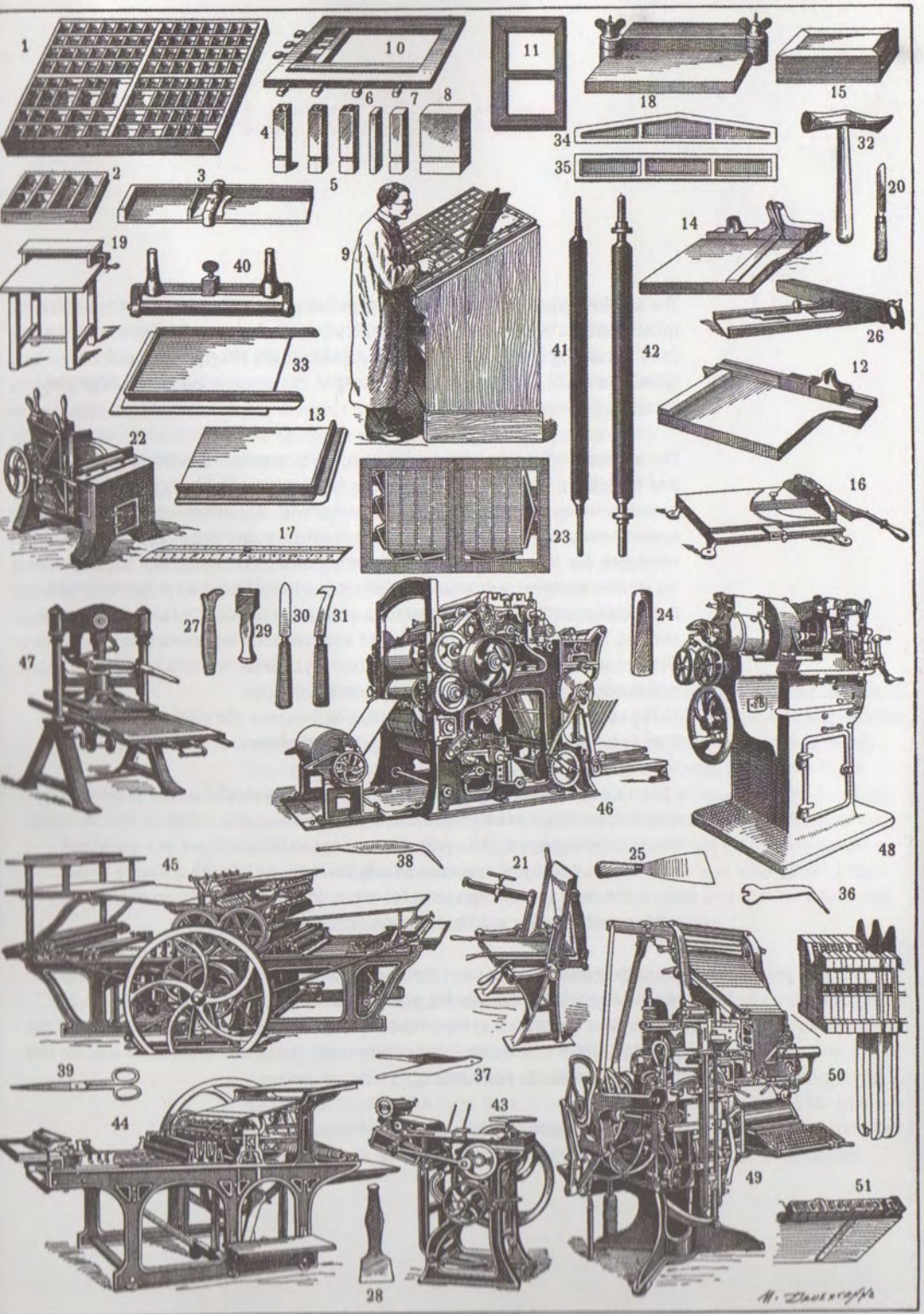


IMPRIMERIE : 1. Casse. — 2. Boîte à corrections. — 3. Composteur. — 4, 5. Caractères. — 6. Espace. — 7. Cadratin. — 8. Cadrat. — 9. Ouvrier typographe. —

The Type

1

It all starts with the sign

The Roman and Holy Roman Empires

The typographical era

A closer look at the type family

Type measurement systems

Types and their classifications

3 seriffed types and 3 sans-serifs

The anatomy of the letter

From type to font

The digital formats

The digital aesthetics

Typographical recommendations

The choice of a typeface

The Roman and Holy Roman Empires

In the heyday of the Roman Empire, around the start of our western calendar era, the alphabet had matured into an extremely harmonious form. The peak of design technique in this development is the Roman capital, the Capitalis Romana or the Capitalis Monumentalis, the grandfather of all western capital or majuscule scripts. The Capitalis Monumentalis was the letter used for recording the empire's glory in stone for eternity. A perfect example of this is Trajan's Column in Rome.

The capital or majuscule alphabet The Capitalis Monumentalis was first drawn using ink and a flat brush, and then carved into marble or stone with a chisel. Through the centuries, it has retained its indestructible reputation as being perfect for 'monumental' designs with a classical feel and in 1989 it was digitally redrawn as Trajan by Carol Twombly. By using different writing materials and carriers, the form of the letters was strongly influenced. From 100 until about 600 AD, there was another majuscule script in circulation, the Capitalis Quadrata, an upright script, written mainly on papyrus using a broad-nibbed goose quill pen. The script was slightly less formal than the Monumentalis. Around 300 AD, a goose quill script arrived that would continue to be used until deep in the eleventh century: the Capitalis Rustica or rustic capitals. The quill was held at an angle, which increased writing speeds.

A distinct feature in Carol Twombly's Adobe Trajan is that the 'N' and 'M' have serifs only at their terminals. The difference with the Adobe Garamond 'N' below is clear to see. Also compare the shapes of the letters to the inscription on Trajan's Column on the right.

Half a century after the Capitalis Rustica, the uncial made its appearance and stayed until the thirteenth century. The uncial is a majuscule script used for writing on parchment and is characterised by round forms.

TRAJAN

GARAMOND

IARDAQELEVSIN
POENARUMCELEBRES
NOSCITISPROPE

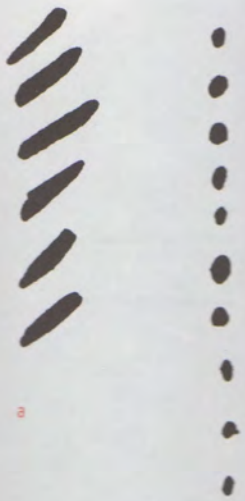
Below: the Capitalis Quadrata, followed by the Capitalis Rustica and lastly, the uncial.

It all starts with the sign

Through myths and legends, spoken languages contribute to history. Although there are no audio recordings of ancient times that can tell us how people lived or what they told one another, there is a level of certainty about visual variants of language. A fleeting visual version exists until this day: sign language. Contrary to popular belief, sign language is not universal. As with spoken languages, most countries have their own sign language, complete with dialects. But this is beyond the scope of this book. We are dealing with the recorded version of language, specifically the western forms of writing and their resulting typography. This typography could only develop after a long history that eventually resulted in the Latin alphabet. The journey to those twenty-six letters, ten numbers and some added punctuation marks took more than 50,000 years. It all started with the 'sign'.

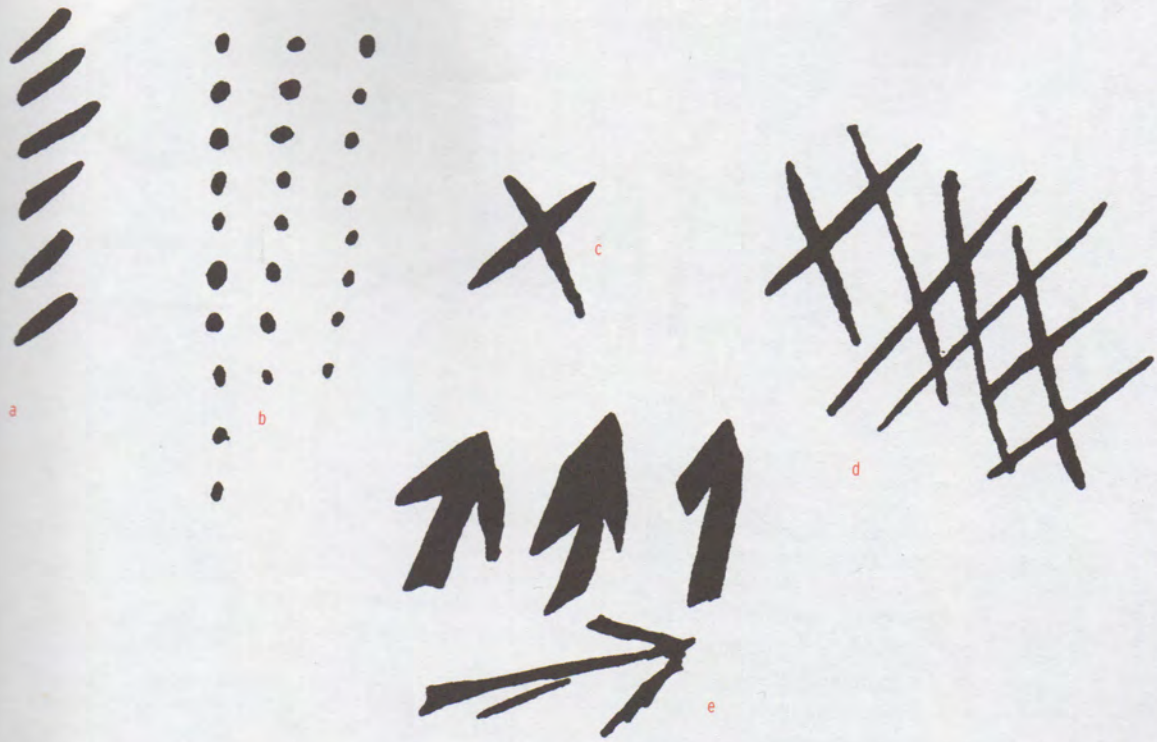
The drawing human The first forms of written communication were paintings such as those found in the caves of Lascaux in the south of France and, worldwide, in sites that date from the Stone Age. It was at least 50,000 years ago that humans started drawing on stones and clay tablets, animal skins and leather, dried leaves and papyrus, wood and bamboo, ivory and wax tablets. Signs and drawings, from simple lines that indicate quantities, directions and hunting territories, to amazing drawings of hunting scenes in caves, and figurines like the well-known Venus of Willendorf (± 24,000 BC), are evidence of the start of the development of both two and three dimensional reproduction techniques. At the same time they possess an aesthetic quality that still excites our admiration.

So the start of the recording of verbal communication constitutes the birth of both image and writing. Some of these images were used as recognisable symbols and were transferred to non-perishable materials as tangible evidence, for instance when striking a deal or when taking stock. The Latin saying 'scripta manent' (what is written, stays), which came into existence much later, immortalises this ancient administrative principle.



a

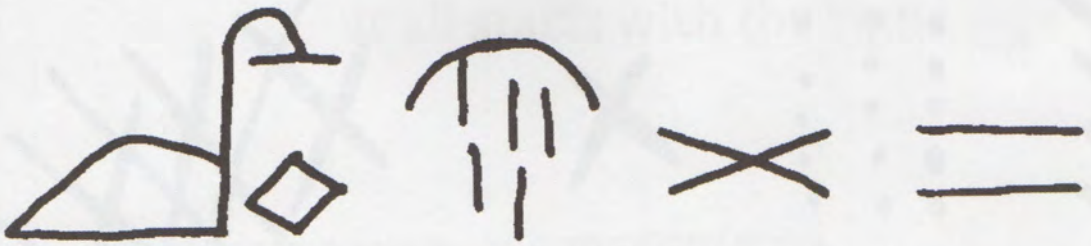
(a) 'glyphs' or grooves and
(b) dots that perhaps denote enumeration units;
(c) and (d) crossed lines, perhaps indications of places;
(e) arrows or spear-points.



(a) 'glyphs' or grooves and
(b) dots that perhaps denote enumeration units;
(c) and (d) crossed lines, perhaps indications of places;
(e) arrows or spear-points.

Pictographic writing system The next step after depicting an object was the expansion of its meaning. A drawing of a sun, for instance, was used to depict the notion of warmth or day; the image of mountains was used to describe 'over the mountains', or foreign. By grouping such symbols together, 'legible' connections were formed. At the same time a figure of speech emerged, the pars pro toto, in which part of a symbol represents the whole: thus a vagina stands for a woman (see page 14). The image of this vaginal triangle was linked to the sign for mountains and together they formed the concept of female slave (as a female slave was a woman who was captured during a raid in the country over the mountains).

The ideogram or primal pictogram was born and it started its journey through the ages and civilisations to the graphic design of our times; from potter's and stonemason's signs, brands and tattoos, religious and magical symbols, gypsy picture writing and tags, to Indian symbols and pi fonts.
All these signs however had no connection whatsoever with spoken language, as is mainly the case in our modern writing, although our alphabets still contain signs without a sound relationship, such as the signs for percent (%),



Ideograms from left to right:
a bird plus an egg: the notion of fertility;
vertical stripes from an arc in the sky: night;
crossed lines: enmity, and
parallel lines: friendship.

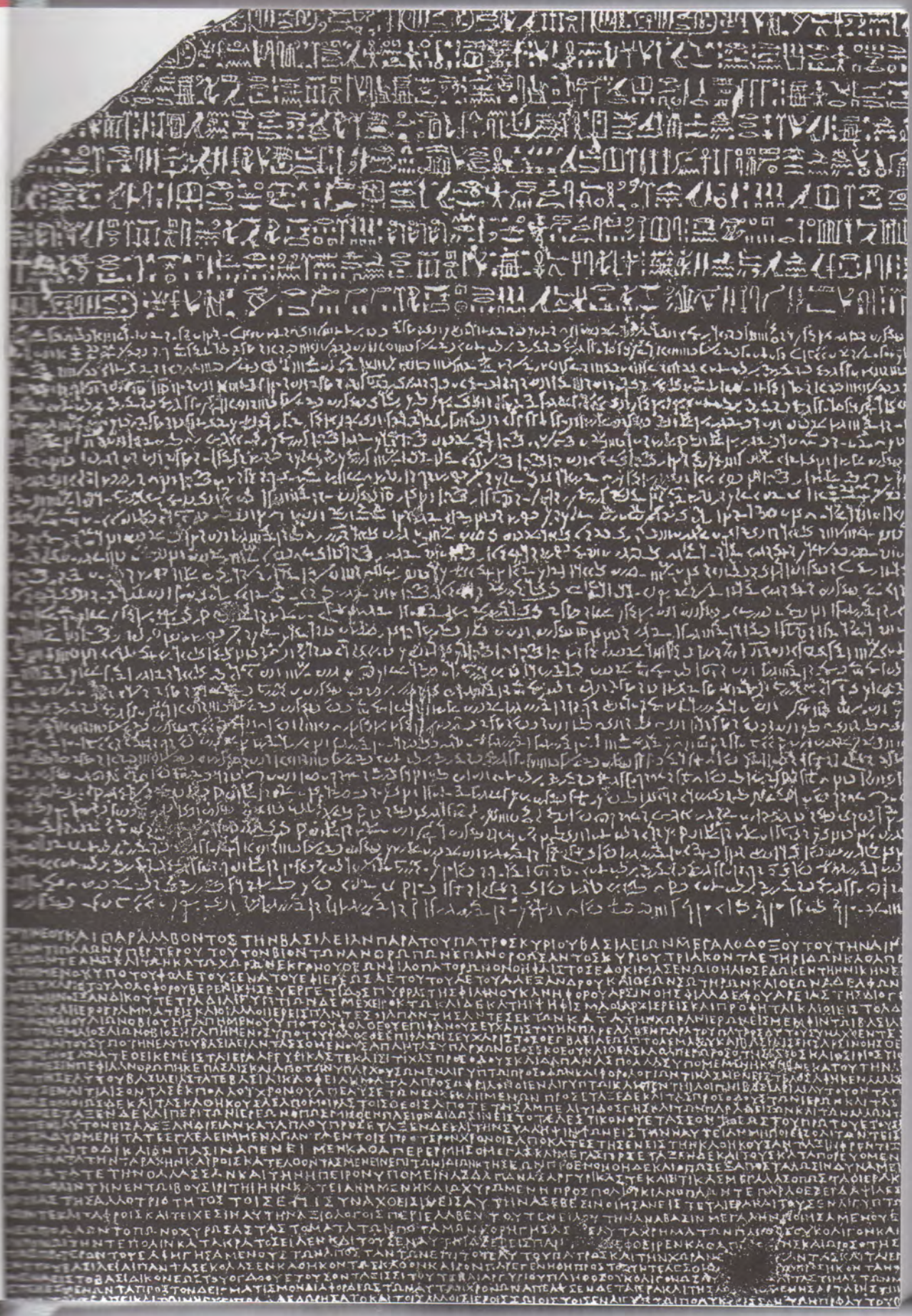
dollar ($) or euro (€). So a 'primitive typesetter' did not have a visual word image – let alone a visual letter image – only a concept.

The transition In the evolution from the pictographic system of writing to word image, Egyptian hieroglyphics are in a league of their own. The word hieroglyph is a compound of the Greek words hierós ('sacred') and glyphein ('to carve' or 'scribe') and illustrates that the writing system was used for the production of religious texts. Hieroglyphics emerged about thirty centuries ago and were initially a system, like any other writing system, of picture writing made up of series of stylised drawings of animals, humans and plants, and characters, which functioned as pictograms. Later, signs were added which represented a sound, called phonograms. With this, hieroglyphics developed from an ideographical writing system that exactly expressed each meaning, to an analytical writing system that made it easier to convey deeper meanings more elaborately.
This way, hieroglyphics transformed into a rudimentary form of the writing that we now know. Because of its beautiful styling, it can also be qualified as visual poetry in its purest form.

The stone illustrated on the facing page was found in Rosetta (Rashid). It contains the same text thrice: once in hieroglyphs, once in Demotic and once in Greek. By comparing these texts on this Rosetta Stone, Jean-François Champollion deciphered the Egyptian forms of writing. Reproduction from: Wallis Budge, *Books on Egypt and Chaldaea - Volume XVII, The Rosetta Stone*, London 1904.

Besides the esthetical form of hieroglyphs there was also a more practical, prosaic, more esthetic, shorthand version. This was the cursive hieratic that was used for religious texts on papyrus. Later, the more popular, widespread Demotic script developed, shown here in the middle section of the Rosetta Stone. A relationship with the hieroglyphics at the top of this page is virtually indiscernible.

The cradle The Middle East of about three thousand years ago is the cradle of most contemporary forms of writing. As well as Egyptian hieroglyphics – based on ideograms – the Sumerian Cuneiform script and the early Semitic alphabetic script developed there.



Above: The schematic version of an ox head in a pictographic writing system turns 90 degrees in the reading direction (to the left) and in five stages becomes the cuneiform character for the word ox.

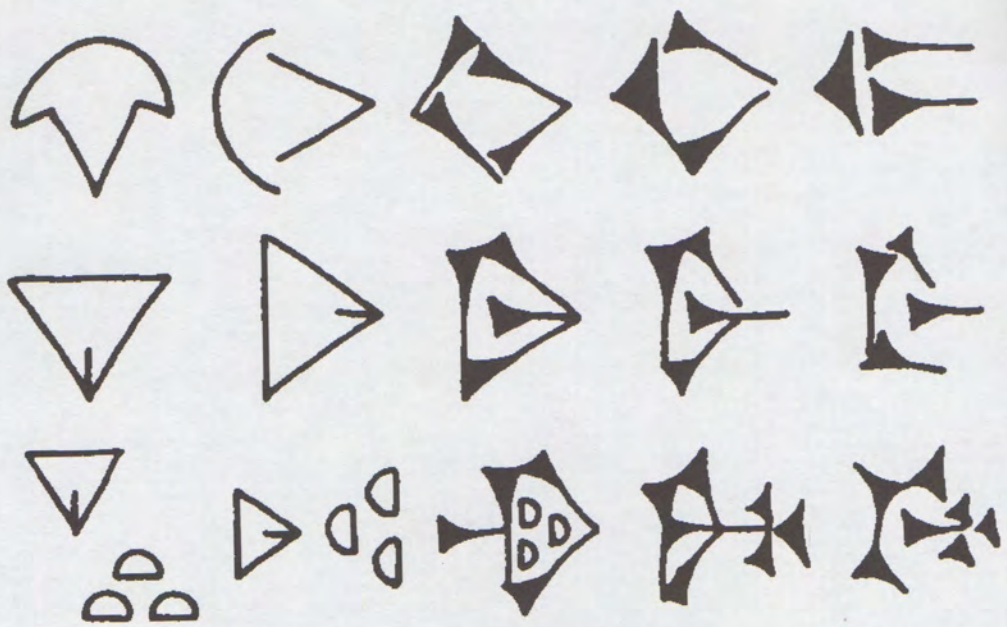
Middle: The triangle with the 'vagina'-line means woman and transforms in a similar way.

Below: The sign for woman, combined with that of three mountains, becomes the concept of woman-from-over-the-mountains, meaning slave woman.

The cuneiform script had over 600 signs for different concepts, so it is no wonder that in time this was replaced by the much simpler structures of Phoenician and Aramaic with their 22 consonants.

Influenced by the materials on which and with which ideograms were written, but also influenced by the desired speed of writing, several forms of pictographic writing systems started to develop. Mesopotamia, the land between the Tigris and Euphrates rivers, was inhabited by Sumerians and Acadians. It was a country which used clay and reed as base materials. As drawing round forms in clay was too difficult, the drawing was simplified to the Cuneiform script using a wedge formed stylus. Because papyrus, used in Egypt, was easy to draw on, hieroglyphics remained for the large part a picture script.
In the Middle East, greatly abstracted signs were increasingly used to convey sounds instead of concepts and from the early Semitic script, a whole family tree of alphabetical systems sprouted up, branching out into the Far East and the present-day western world. The various Middle Eastern empires and city states exchanged written messages and so influenced each other's writing.

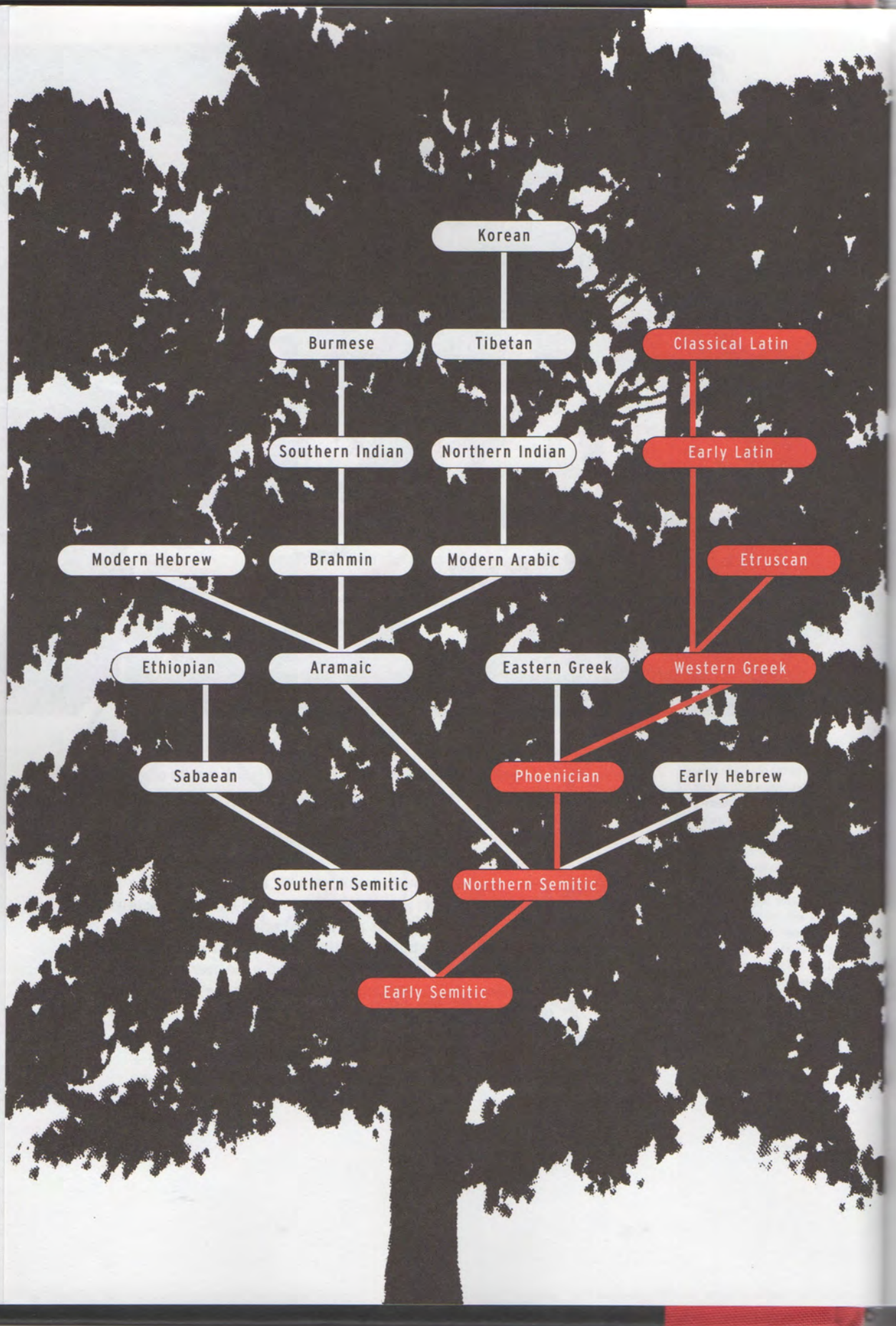
The Phoenicians, a seafaring and trading nation, are accredited with inventing the first alphabet, around 1250 BC. It consisted of 22 consonants and was written from right to left. It was a so-called consonantal alphabet, or abjad. This means that in reading, a suitable vowel needed to be added to each consonant. With their merchant mentality, the Phoenicians spread the alphabet to Greece and the rest of the Mediterranean world. In the homeland, the Phoenician language was replaced by Aramaic around the year 1 AD. Aramaic



This map depicting Roman times (200 AD) shows the trade routes over water, from which we can deduce how writing systems spread. Of course trade routes over land existed as well, but the spread of writing systems happened much faster over water. The black area indicates the former Roman Empire. So it all started with the Sumerians in the land between the Tigris and Euphrates and it ended with the 'Latins'. Our alphabet is still called the Latin alphabet.
Illustration: Joep Pohlen

was influenced by Phoenician and had the 22 consonants in common. Semitic Hebrew, which in 1948 became the official language of Israel, has its origins in both languages and is still written from right to left.

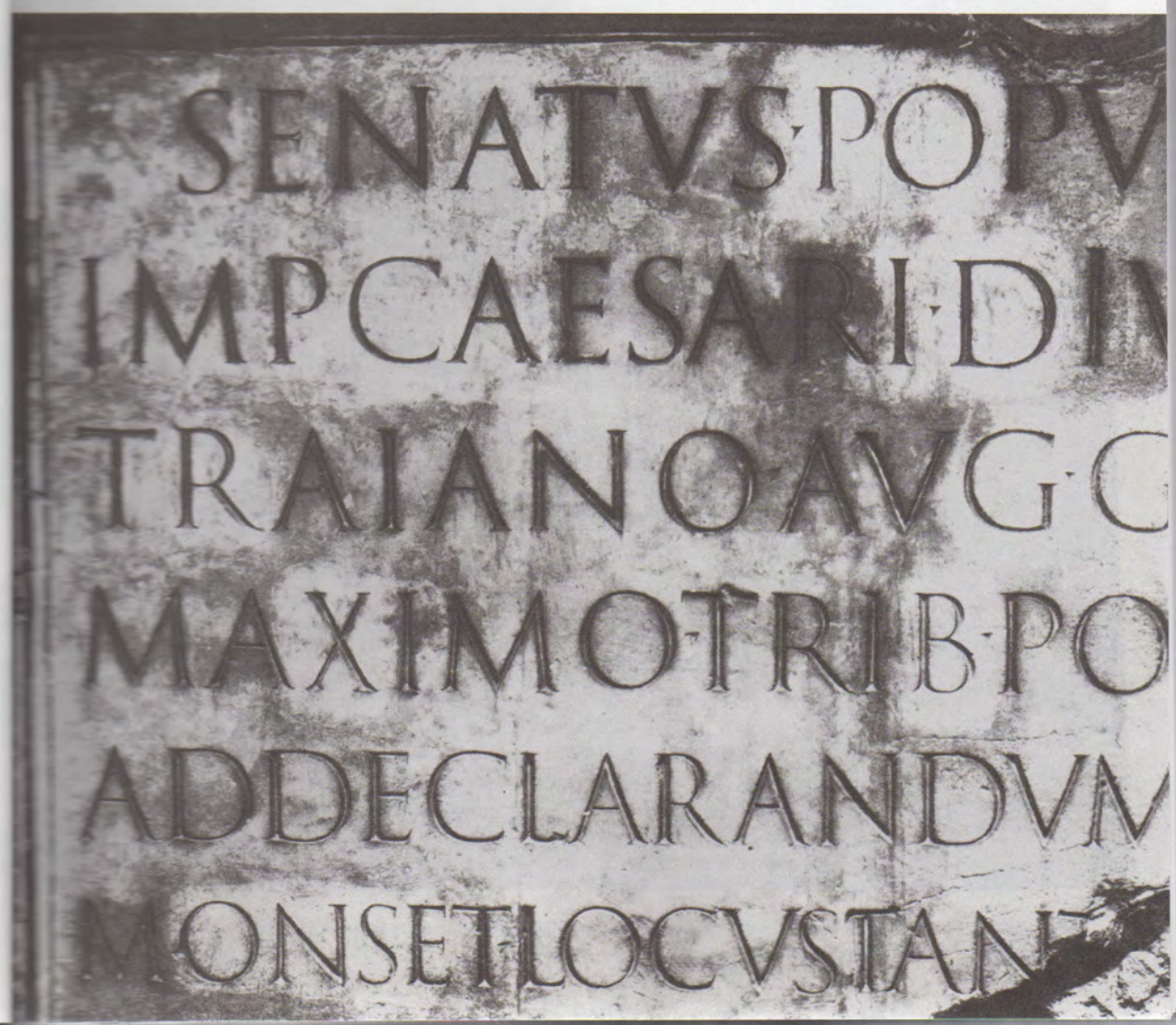
All roads lead to Rome After Phoenician and Aramaic, the Greeks took over the 'baton'. Our word 'alphabet' was formed from the Greek letters 'alpha' (a) and 'beta' (b), meaning ox and house. Around 800 BC, they were using the Phoenician consonantal alphabet plus the Aramaic vowels A (alpha), E (epsilon), O (omicron), Y (upsilon). The I (iota) was a Greek invention. They also started writing from left to right. Slowly but surely, this alphabet became the alphabet of the western world. First through the Etruscans, who ruled over what is now Tuscany, and after them through the Latins who conquered the Etruscans.


Korean
Burmese
Tibetan
Classical Latin
Southern Indian
Northern Indian
Early Latin
Modern Hebrew
Brahmin
Modern Arabic
Etruscan
Ethiopian
Aramaic
Eastern Greek
Western Greek
Sabaean
Phoenician
Early Hebrew
Southern Semitic
Northern Semitic
Early Semitic

The strokes that have been added to the capitals are clearly visible in the Roman cursive used in the fragment on the right, taken from the accounts of the Pompeian banker Lucius Caecilius Jucundus.

Text on Trajan's Column in Rome (detail), 113 AD.
The highest line is placed about two metres above eye height and the height of the letters decreases from top to bottom. The letters on the top line are 11 centimetres high, the ones at the bottom only 9 centimetres.

The first fast, cursive majuscule scripts Of course, the Romans and literati in their conquered regions also wrote little notes. They used a quick, cursive script, the Roman cursive, on papyrus or wooden boards covered with a layer of wax. In order for it to be legible, they let some letters extend below or above the lines. This is the most distant echo of the later cursive scripts, scripts in which capitals evolve into 'small' letters with 'ascenders' and 'descenders'.



Two pages from the *Book of Kells* (folio 247 recto, 248 verso). A manuscript from the seventh century, written in a half uncial.
With thanks to the 'Board of Trinity College Dublin'.

tribuetur enim tibi in resurrectione ius
torum. Hec cum audisset quidam
de simul discumbentibus dixit illi be
atus qui manducabit panem in regno dei.
Ipse dixit ei homo quidam fecit
caenam magnam et vocavit mul
tos et misit servum suum ad horam
caenae dicere invitatis ut venirent
quia iam parata sunt omnia. Et
caeperunt simul omnes excusare
primus dixit ei villam emi et neces
se habeo exire et videre illam rogo
te habe me excusatum. Et alter
dixit iuga bovum emi quinque et
eo probare illa et ideo venire non
possum rogo te habe me excusatum
Et alius dixit uxorem duxi et ideo non

aBCDeFGHIJKLmnOPQrSTUVWXYZ

In the fifth century, uncial also started to be written faster, which resulted in the half uncial, a type consisting of majuscules and minuscules.
In various forms, the half-uncial remained in circulation until the end of the thirteenth century. Magnificent examples of the script are found in the Irish *Book of Kells*, two pages of which are depicted on the preceding pages.

minuscule

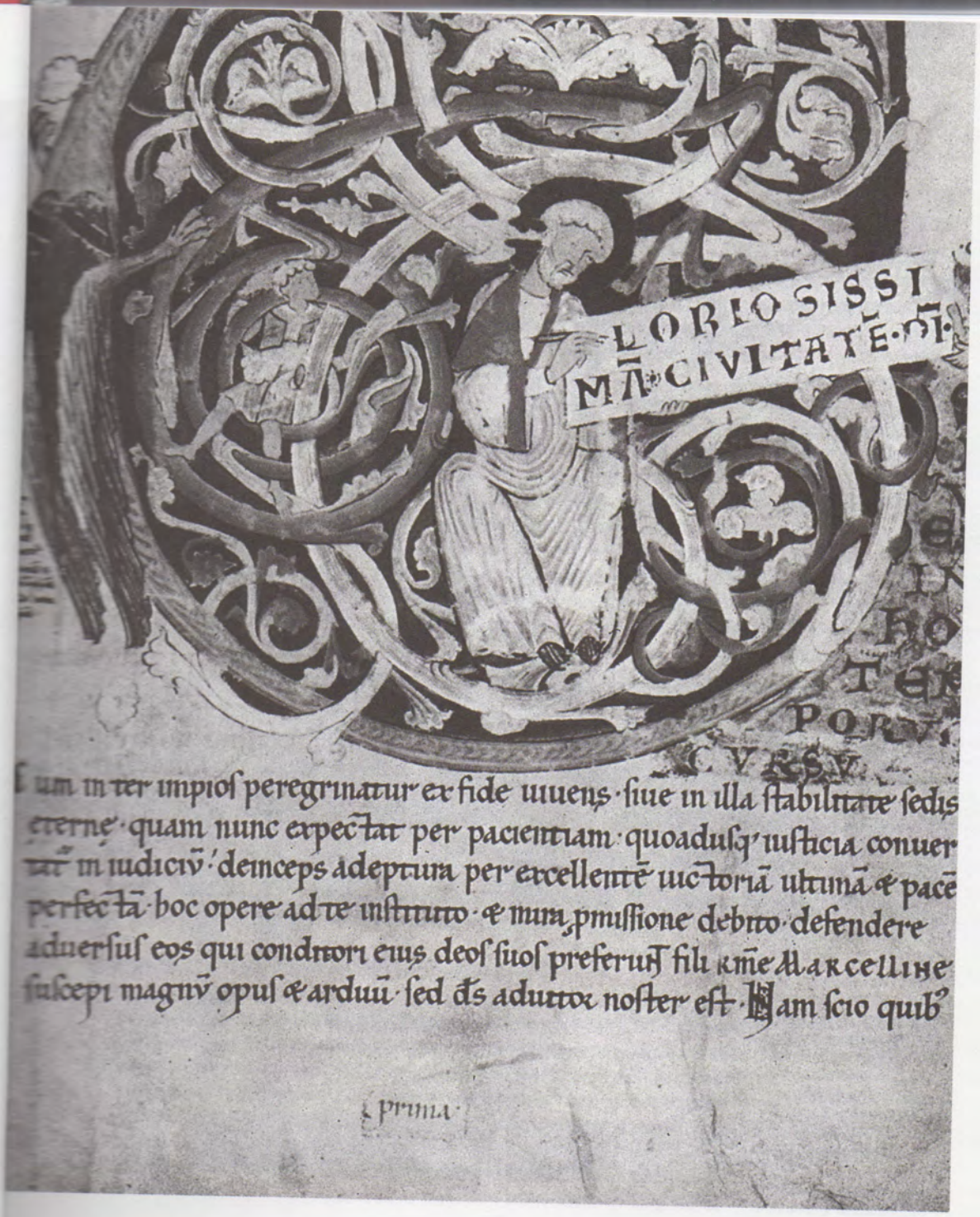
mIJuscuLe

MAJUSCULE

Filosofia Unicase
Designer Zuzana Licko added a modern uncial to her 1996 typeface Filosofia. The Unicase above is a mixture of capitals (majuscules) and lower-case letters (minuscules). An uncial is mainly written between two lines, while the longer descenders and ascenders distinguish the half uncial. The Filosofia Unicase plays with that by letting the 'j' and the 'q' just escape the confines of the two lines. The overall impression is still that of an uncial. The design is an interpretation of typefaces as shown in the *Manuale Tipografico* by Giambattista Bodoni, published as a type specimen book by his widow in 1818.

The Carolingian minuscule In the fourth century, at the same time that the Roman Empire was in decline, Christianity was proclaimed the state religion by emperor Constantine the Great. In Western Europe, the church became an important producer of texts, which were still drawn up in Latin. These needed to be distributed, which could only happen after they had been copied by hand. Writing was and remained the monopoly of monks for a good thousand years. They perfected the art of producing and adorning manuscripts. Few people knew how to read or write.
Even Charlemagne, who as emperor of the Holy Roman Empire was the most powerful man around 800 AD, was illiterate. He did not want to learn how to write himself – he had other people to do that for him – but to streamline the communication and administration of his vast empire and thus continue his vision and power, he decided in 768 to prescribe a new, official half uncial, composed by his secretary Alcuinus. As an abundance of often inaccurately copied texts were in circulation, Charlemagne had brand new, accurate copies made of the most authentic sources. These were marked 'ex authentico libro' (from the original work) and were written in the official handwriting, the Carolingian minuscule. Partly for its clarity and beauty it became the dominant letter in Western Europe until the end of the thirteenth century.

Carolingian minuscule
The longer descenders and ascenders are clearly visible.



Carolingian minuscule
The longer descenders and ascenders are clearly visible.

The typographical era

For convenience's sake, we let the history of western typography start with the Gutenberg Bible of 1455. This Bible was the first monumental European book to be printed with individual metal letters. The letters were based on Gothic manuscript scripts, so it is no surprise that the first letter to be cut was the Textura with all the ligatures and abbreviations as featured in the manuscripts. Before the invention of movable type, books and texts were reproduced by copying them in scriptoria or by carving the mirror image of a complete, handwritten page in a wood block and printing from it. After the invention of movable type, printing and typefounding techniques did not fundamentally change for about four centuries. The most important technical developments to increase working speeds took place over the last hundred years, roughly from about 1880.

A humble role Over the past centuries, typography has mainly played a serving if not humble role, but there have been moments of pride in which it allowed itself to grow into an autonomous art form. Artistically, typography hitched a ride on the back of the visual arts, with a give and take of theoretical impulses between them.

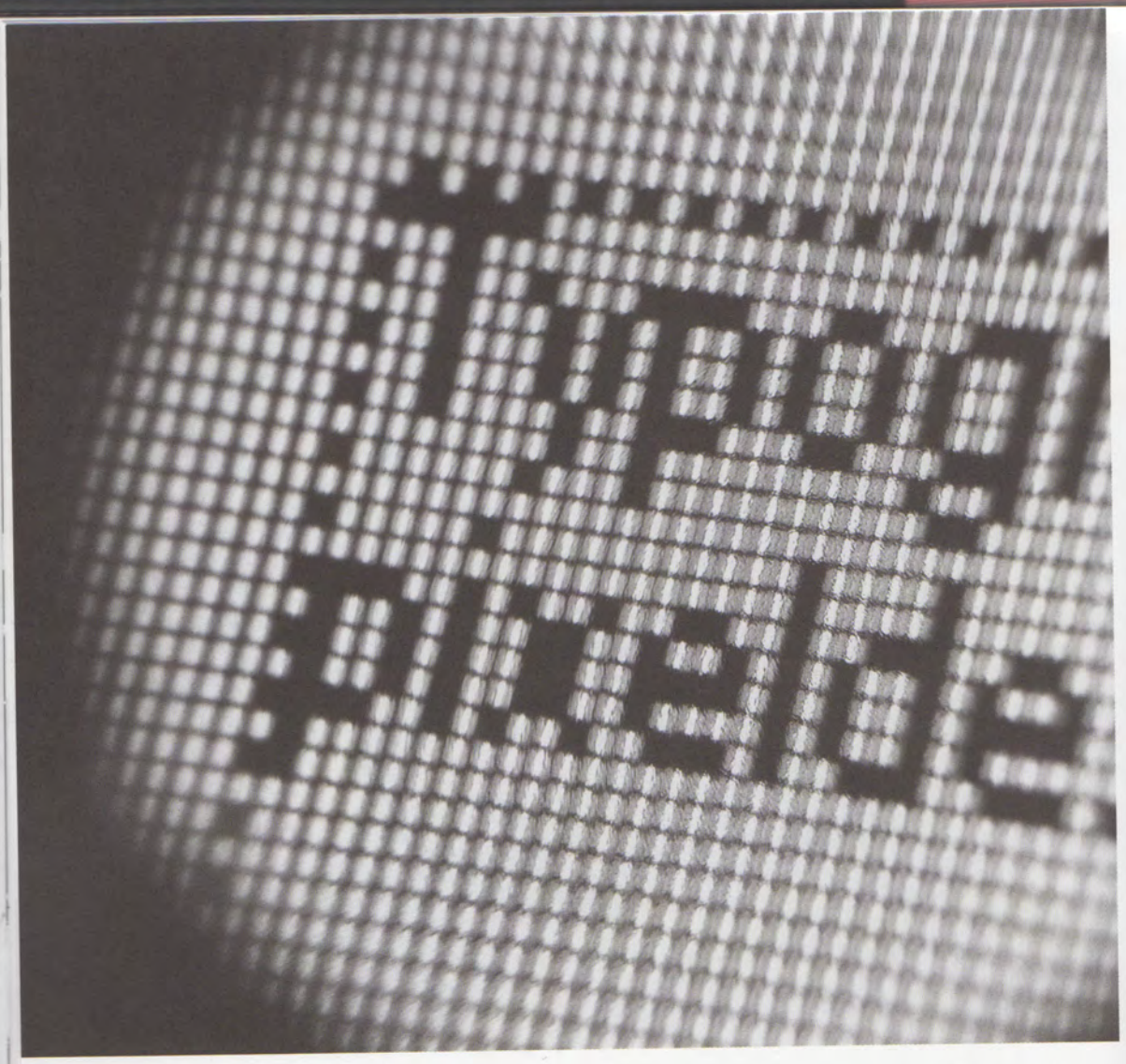
From a technical point of view, there are two big evolutionary moments, distinguishable by the type of carrier: the typography of printed materials with its paper cradle started in the 1450's, and the screen typography which arose about five hundred years later.

These developments do not cancel each other out, but supplement each other. In the 'paper typography' there are three big technological developments after Gutenberg that changed the design and the production of the type and the printed materials.

Mechanical composition The first important development was the introduction of the Benton Pantograph in 1885 by the American Linn Boyd Benton. The machine allowed the mechanical cutting of a metal letter in any desired size. A point followed along the contours of the drawn letter. Engraving a mould for a 4 pt letter (or even smaller) by hand had soon become a thing of

For five hundred years, lead typesetting remained the norm. The alloy for manual type casting is harder than that of type casting machines like the Monotype. The founder machine's mixture only needs to last one impression and is then melted down. That of the manual letters needs to last longer. Composition of hand cast sorts: 64% lead, 23,88% antimony, 12,02% tin and copper traces. Composition Monotype casting: 78,3% lead, 15,9% antimony, 5,8% tin.

the past. In these days of industrialisation and mechanisation, the Monotype company developed a typesetting machine that cast individual metal letters and the Linotype company a typesetting machine that cast whole lines of text in metal. These machines used matrices to cast the letters or lines in an alloy predominantly of lead, tin and antimony, and dropped them into place. Text was fed in using mechanically operating keyboards. These machines and their operators replaced the traditional manual compositors who had worked in printing offices, often in large numbers. The manual compositors had set each letter manually in a composing stick and then assembled the lines to form a page. Since the letters were mirrored and could only be read after printing, knowing how to read mirror writing was a special skill for compositors.



Close up, the screen type turns out to be less fluent than the metal type on the last page. Luckily we can expose it at much a higher resolution which makes the 'jaggies' or jagged edges invisible to the eye. Photo: Joep Pohlen.

Photographic composition The second important step was the introduction of photographic typesetting in the late fifties of the twentieth century. Metal was replaced by photographic film and photographic paper. This was a cheaper and less unhealthy way of working that allowed for free spacing and even overlapping of faces, that made continuous enlarging and reducing possible and, to the sorrow of purists, the photographic distortion of the letter.
At the same time, a different development had more of a social than a technological effect: the birth of dry transfer lettering (by Letraset and Mecanorma, among others) brought typography to the masses. This made it possible to freely and relatively cheaply transfer letters from a carrier onto a sheet of paper. They were only used for small amounts of text because the process was

pretty intricate. The fact that not every user of the dry transfer lettering system arrived at delicate typographical results does not mean that it did not democratise typography. But even this step is now one of the past.

Digital composition A third important development started in 1965, when the German company Hell introduced digital typesetting using the cathode ray tube. Other established providers had to follow suit and they, too, introduced digital typesetting.
An important consequence of this development was the introduction of the fairly affordable and user-friendly Apple Macintosh in 1984 – a machine that was, all on its own, responsible for the second wave of democratisation.
The graphic designer him – or herself – could now set texts and edit them with digital typefaces in PostScript format, after which the texts were exposed to photographic film or photo paper with the appropriate laser exposure unit.
This made professional typesetters a lot less influential. Their responsibility for the camera-ready copy transferred to the designer.

The Oakland Eight, a typeface designed by Zuzana Licko of Emigre, is based on the number of pixels available on an early Mac dot matrix printer. The number 8 indicates the cap height in pixels. The pixel fonts, called LoRes, are still available from Emigre.

Type design for the people In addition to setting text with a computer, the designing of typefaces has become more accessible, too. User-friendly type design programmes like Fontlab give every designer the possibility to create their own typefaces. Over the past five hundred years, designing letters has, however, not been an easy thing, and that hasn't changed. A solid knowledge of form and counterform, style characteristics, the correlation between the forms of letters, numbers and punctuation marks, the weight of the type, spacing: everything is important and has to be incorporated in the design. That's why the quality of the type designer and, often, the publisher remains decisive when it comes to usability of a new typeface. So-called fun fonts abound, but usually have a short life cycle. Well designed typefaces have sometimes existed for hundreds of years and are still being used. And although many typefaces undoubtedly look the same to an amateur, designers will choose typefaces carefully, based on specific characteristics and, of course, on taste and form.

Timeline The timeline on the next pages depicts the evolution of typography from 1450 to 2006, highlights technical innovations and biographical data, and dates the most important typefaces and typographical movements. In order to point out mutual influence, parallel pictorial movements and famous works are mentioned as well.
We learned from previous editions of *Letter Fountain* that the timeline was seen as especially helpful for educational purposes because art had such a big influence on the development of typography. Typographers were often involved in important avant-garde movements like Bauhaus, De Stijl and Art Deco.

Typographical developments

- Technical developments, important events and publications
- ➤ Important people
- ▼ Birth of typefaces

● **Circa 1450** reinvention in the western world of letterpress printing from movable type by Johann Gutenberg, Mainz

● **1465** Sweynheym & Pannartz cut the first Roman in Subiaco (Italy)

➤ **1394 – 1468** Johannes Gutenberg
➤ **1420 – 1480** Nicolas Jenson
➤ **1421 – 1491** William Caxton
➤ **1450 – 1515** Aldus Manutius
➤ **? – 1515** Francesco Griffo
➤ **1510 – 1561** Claude Garamond
➤ **1540 – 1651** the Elsevier family
Christoffel Van Dijck **1601-1669** ➤
➤ **? – 1589** Christoffel Plantijn
Dr. John Fell **1625 – 1686** ➤

▼ **1455 the Mainz Indulgence typeface and type of the 42-line Bible** by Johann Gutenberg
▼ **1557 Civilité** Robert Granjon
1621 Caractères de l'Université ▼ Jean Jannon

Examples

Except for Gutenberg's Textura, newly drawn digital versions of typefaces are shown here

Textura (Gutenberg) flag
Adobe Garamond flag
Storm Jannon Antiqua earg
Monotype Van Dijck daeg

Time indication

1450 60 70 80 90 1500 10 20 30 40 50 60 70 80 90 1600 10 20 30 30 40 50 60

Special paintings

● **Paolo Uccello** Saint George and the Dragon
● **Sandro Botticelli** La Primavera
● **Michelangelo Buonarotti** the frescoes in the Sistine Chapel
● **Leonardo da Vinci** Mona Lisa (La Gioconda)
● **Raffaello Sanzio** the Stanza frescoes
● **Tiziano Vecellio** Danaë
● **El Greco** View of Toledo
● **Caravaggio** Death of the Virgin
● **Annibale Carracci** The Assumption of the Virgin Mary
● **Rembrandt van Ri** Self-portrait with S
● **Peter Paul Rubens** Hélène with her fir
● **Nicolas Po** The Seven
● **Georges de La To** The woman with t

Developments in painting

The artists in this timeline are listed chronologically by year of birth, except in the case of Mannerism, for which the order is based on an artwork that was created in a certain year. 'Beyond category' includes artists whose oeuvre exceeds the style characteristics of its era.

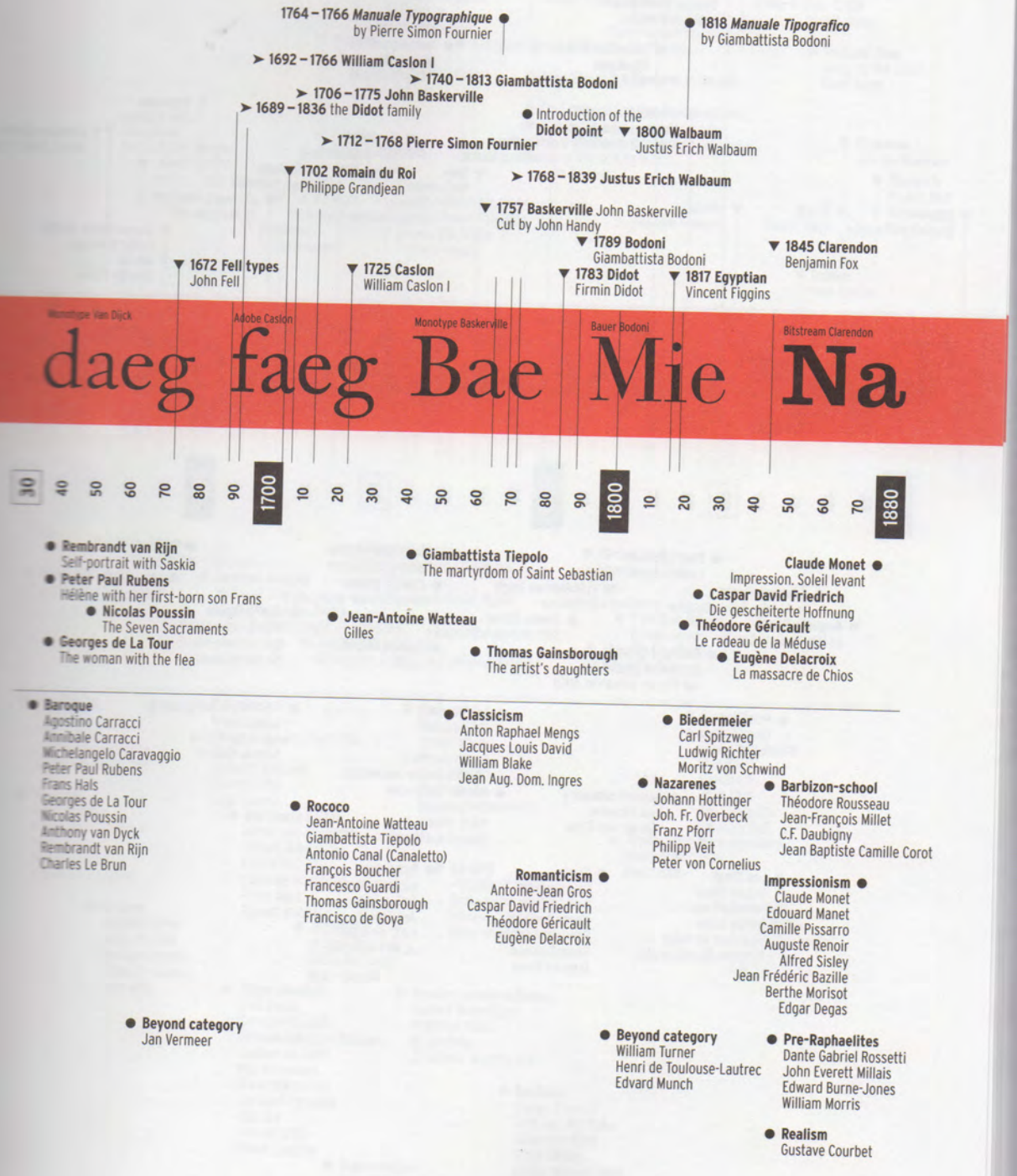
● **Renaissance**
Masaccio
Fra Angelico
Fra Filippo Lippi
Paolo Uccello
Andrea Mantegna
Piero della Francesca
Alessandro Botticelli
Leonardo da Vinci
Michelangelo Buonarotti
Raffaello Sanzio
Giovanni Bellini
Andrea del Verrocchio
Andrea del Sarto
Giorgione
Tiziano Vecello
Jacopo Tintoretto
Paolo Veronese
Francisco de Zurbarán

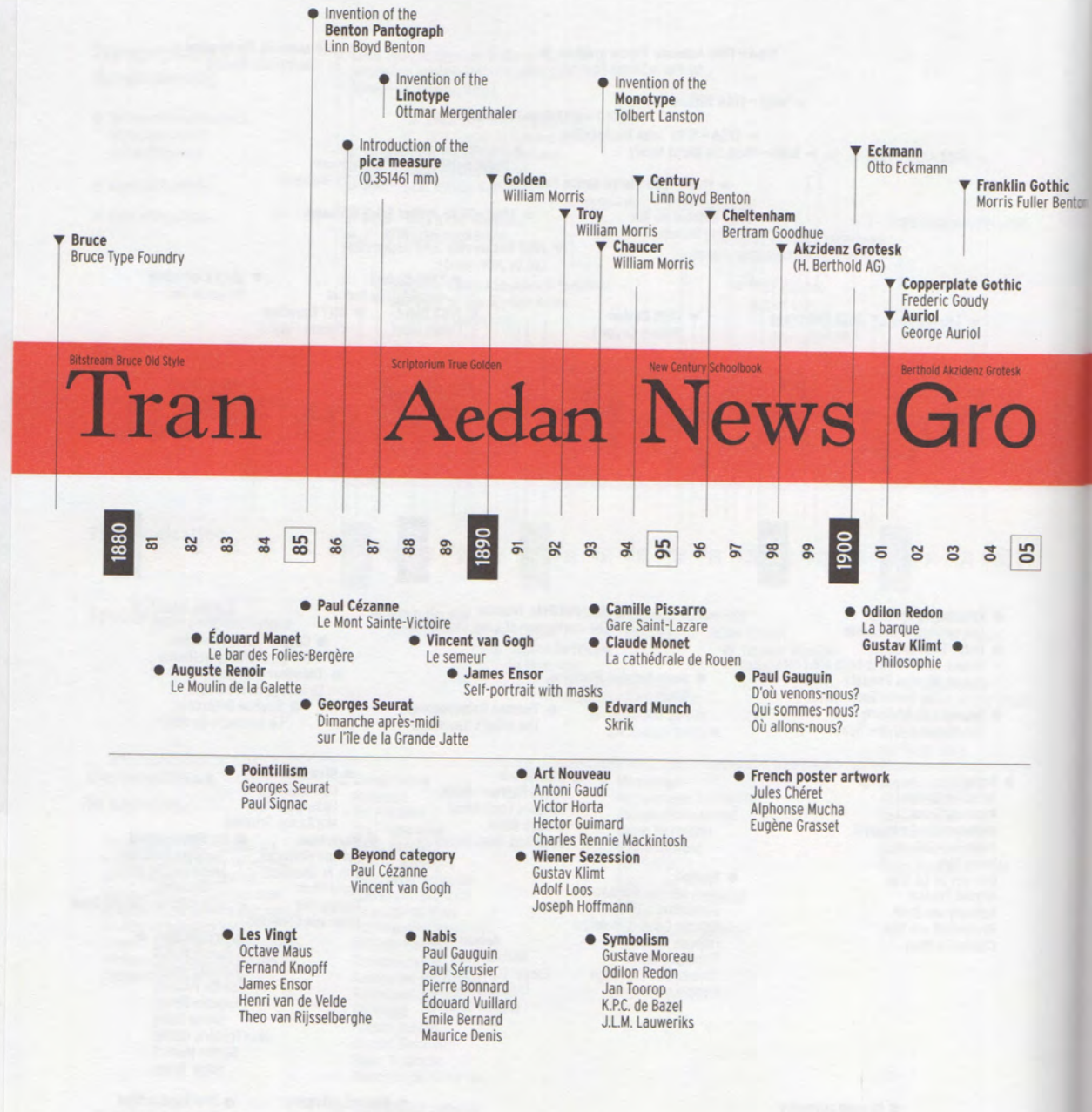
● **Early-Dutch painting**
Rogier van der Weyden
Dieric Bouts
Jean Fouquet
Hugo van der Goes

● **Mannerism**
Michelangelo Buonarotti
Jacopo da Pontormo
Rosso Fiorentino
Il Parmigianino
Jan Gossaert
Barend van Orley
Giuseppe Archimboldo
El Greco
Bartholomäus Spranger

● **Beyond category**
Albrecht Dürer
Hans Holbein
Matthias Grünewald
Hieronymus Bosch
Pieter Bruegel de oude

● **Baroque**
Agostino Carracci
Annibale Carracci
Michelangelo Caravag
Peter Paul Rubens
Frans Hals
Georges de La Tour
Nicolas Poussin
Anthony van Dyck
Rembrandt van Rijn
Charles Le Brun


1764 – 1766 Manuale Typographique by Pierre Simon Fournier
1818 Manuale Tipografico by Giambattista Bodoni
1692 – 1766 William Caslon I
1740 – 1813 Giambattista Bodoni
1706 – 1775 John Baskerville
1689 – 1836 the Didot family
Introduction of the Didot point
1800 Walbaum Justus Erich Walbaum
1712 – 1768 Pierre Simon Fournier
1702 Romain du Roi Philippe Grandjean
1768 – 1839 Justus Erich Walbaum
1757 Baskerville John Baskerville Cut by John Handy
1789 Bodoni Giambattista Bodoni
1845 Clarendon Benjamin Fox
1672 Fell types John Fell
1725 Caslon William Caslon I
1783 Didot Firmin Didot
1817 Egyptian Vincent Figgins
Monotype Van Dijck
Adobe Caslon
Monotype Baskerville
Bauer Bodoni
Bitstream Clarendon
daeg faeg Bae Mie Na
30 40 50 60 70 80 90 1700 10 20 30 40 50 60 70 80 90 1800 10 20 30 40 50 60 70 1880
Rembrandt van Rijn Self-portrait with Saskia
Peter Paul Rubens Hélène with her first-born son Frans
Nicolas Poussin The Seven Sacraments
Georges de La Tour The woman with the flea
Giambattista Tiepolo The martyrdom of Saint Sebastian
Jean-Antoine Watteau Gilles
Thomas Gainsborough The artist's daughters
Claude Monet Impression. Soleil levant
Caspar David Friedrich Die gescheiterte Hoffnung
Théodore Géricault Le radeau de la Méduse
Eugène Delacroix La massacre de Chios
Baroque
Agostino Carracci
Annibale Carracci
Michelangelo Caravaggio
Peter Paul Rubens
Frans Hals
Georges de La Tour
Nicolas Poussin
Anthony van Dyck
Rembrandt van Rijn
Charles Le Brun
Classicism
Anton Raphael Mengs
Jacques Louis David
William Blake
Jean Aug. Dom. Ingres
Biedermeier
Carl Spitzweg
Ludwig Richter
Moritz von Schwind
Nazarenes
Johann Hottinger
Joh. Fr. Overbeck
Franz Pforr
Philipp Veit
Peter von Cornelius
Barbizon-school
Théodore Rousseau
Jean-François Millet
C.F. Daubigny
Jean Baptiste Camille Corot
Rococo
Jean-Antoine Watteau
Giambattista Tiepolo
Antonio Canal (Canaletto)
François Boucher
Francesco Guardi
Thomas Gainsborough
Francisco de Goya
Romanticism
Antoine-Jean Gros
Caspar David Friedrich
Théodore Géricault
Eugène Delacroix
Impressionism
Claude Monet
Edouard Manet
Camille Pissarro
Auguste Renoir
Alfred Sisley
Jean Frédéric Bazille
Berthe Morisot
Edgar Degas
Beyond category
Jan Vermeer
Beyond category
William Turner
Henri de Toulouse-Lautrec
Edvard Munch
Pre-Raphaelites
Dante Gabriel Rossetti
John Everett Millais
Edward Burne-Jones
William Morris
Realism
Gustave Courbet


Invention of the **Benton Pantograph** Linn Boyd Benton
Invention of the **Linotype** Ottmar Mergenthaler
Invention of the **Monotype** Tolbert Lanston
Introduction of the **pica measure** (0,351461 mm)
Bruce Bruce Type Foundry
Golden William Morris
Troy William Morris
Chaucer William Morris
Century Linn Boyd Benton
Cheltenham Bertram Goodhue
Akzidenz Grotesk (H. Berthold AG)
Eckmann Otto Eckmann
Franklin Gothic Morris Fuller Benton
Copperplate Gothic Frederic Goudy
Auriol George Auriol
Bitstream Bruce Old Style
Tran
Scriptorium True Golden
Aedan
New Century Schoolbook
News
Berthold Akzidenz Grotesk
Gro
ITC Clearface
Clea
1880 81 82 83 84 85 86 87 88 89 1890 91 92 93 94 95 96 97 98 99 1900 01 02 03 04 05
05 06 07 08
Paul Cézanne Le Mont Sainte-Victoire
Édouard Manet Le bar des Folies-Bergère
Auguste Renoir Le Moulin de la Galette
Vincent van Gogh Le semeur
James Ensor Self-portrait with masks
Georges Seurat Dimanche après-midi sur l'île de la Grande Jatte
Camille Pissarro Gare Saint-Lazare
Claude Monet La cathédrale de Rouen
Edvard Munch Skrik
Odilon Redon La barque
Gustav Klimt Philosophie
Paul Gauguin D'où venons-nous? Qui sommes-nous? Où allons-nous?
Pablo Pica Les demoi
Henri Matisse La joie de vivre
Pointillism Georges Seurat Paul Signac
Art Nouveau Antoni Gaudí Victor Horta Hector Guimard Charles Rennie Mackintosh
French poster artwork Jules Chéret Alphonse Mucha Eugène Grasset
Beyond category Paul Cézanne Vincent van Gogh
Wiener Sezession Gustav Klimt Adolf Loos Joseph Hoffmann
Die Brücke Fritz Bleyl Erich Heckel Ernst Ludwig Kirchner Karl Schmidt-Rottluff
Fauvism Henri Matisse Maurice de Vlaminck Raoul Dufy André Derain Amedeo Modigliani
Les Vingt Octave Maus Fernand Knopff James Ensor Henri van de Velde Theo van Rijsselberghe
Nabis Paul Gauguin Paul Sérusier Pierre Bonnard Édouard Vuillard Emile Bernard Maurice Denis
Symbolism Gustave Moreau Odilon Redon Jan Toorop K.P.C. de Bazel J.L.M. Lauweriks
Cubism Fernand Lé Pablo Picas Georges Br Robert Del Juan Gris

● **Die Brücke**
Fritz Bleyl
Erich Heckel
Ernst Ludwig Kirchner
Karl Schmidt-Rottluff

● **Fauvism**
Henri Matisse
Maurice de Vlaminck
Raoul Dufy
André Derain
Amedeo Modigliani

● **Cubism**
Fernand Léger
Pablo Picasso
Georges Braque
Robert Delaunay
Juan Gris

● **Futurismo**
Giacomo Balla
Filippo Tommaso Marinetti
Carlo Carrà
Umberto Boccioni
Gino Severini
Luigi Russolo

● **Der Blaue Reiter**
Alexej von Jawlenski
Wassily Kandinsky
Paul Klee
Gabriele Münter
Franz Marc
August Macke

● **Orphism**
Robert Delaunay
Sonia Delaunay
Marc Chagall

● **Expressionism**
Emil Nolde
Georges Rouault
Paula Modersohn-Becker
Gustave de Smet
Max Beckmann
Oskar Kokoschka
Constant Permeke
Otto Dix
George Grosz
Chaïm Soutine

● **Suprematism**
Kazimir Malewitsch

● **Dadaism**
Francis Picabia
Hugo Ball
Hans Arp
Kurt Schwitters
Max Ernst
Richard Huelsenbeck
Tristan Tzara

● **De Stijl**
Piet Mondriaan
Bart van der Leck
Vilmos Huszár
Theo van Doesburg

● **Russian constructivism**
Kazimir Malewitsch
Wladimir Tatlin
El Lissitzky
Aleksandr Rodtchenko

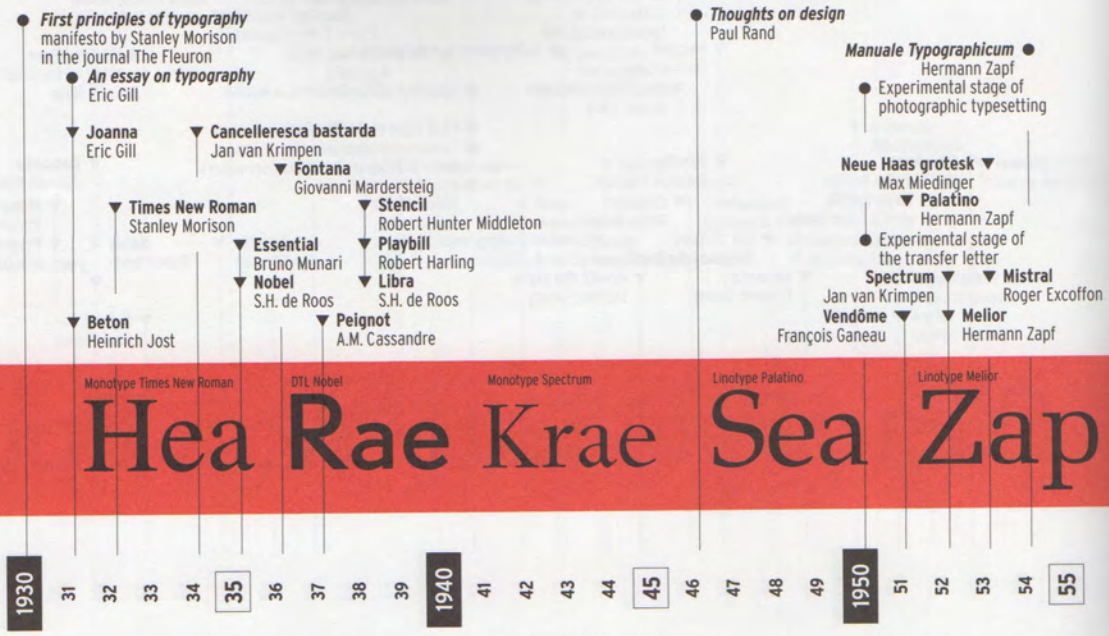
● **Bauhaus**
Walter Gropius
Mies van der Rohe
Johannes Itten
Josef Albers
László Moholy-Nagy
Herbert Bayer

● **Beyond category**
Edward Hopper
Marcel Duchamp
Giorgio Morandi

● **Surrealism**
Hans Arp
Giorgio de Chirico
Man Ray
Max Ernst
Joan Miró
René Magritte
Salvador Dalí

● **Typography hors concours**
Hendrik Werkman
Piet Zwart

● **Plakatstil**
Róbert Berény
E. McKnight Kauffer
Jean Carlu
A.M. Cassandre



● **Abstraction-Création**
Auguste Herbin
Theo van Doesburg
Antoine Pevsner
Georges Vantongerloo
Naum Gabo

● **Unit One**
Paul Nash
Edward A. Wadsworth
John Armstrong
Ben Nicholson
Edward Burra
Tristram Hiller

● **Art direction**
Mehemed Fehmy Agha: Vogue
Alexei Brodovitch: Harper's Bazaar
Lester Beall: Scope
Bradbury Thompson: Mademoiselle

● **New York School**
Lester Beall
Bradbury Thompson
Paul Rand

● **Abstract expressionism**
Hans Hofmann
Graham Sutherland
Willem de Kooning
Franz Kline
Jackson Pollock
Robert Motherwell
Alberto Burri
Antoni Tàpies
Helen Frankenthaler

● **Swiss constructivism**
Max Bill (Ulm)
Emil Ruder (Basel)
Josef Müller-Brockmann
Richard Lohse
Hans Neuberg
Carlo Vivarelli (Zürich)
Edouard Hoffman
Adrian Frutiger

● **Lettrism**
Isidore Isou
Maurice Lemaître
Jacques Spacagna
Roland Sabatier

● **Cobra**
Asger Jorn
Constant
Karel Appel
Corneille
Pierre Alechinski

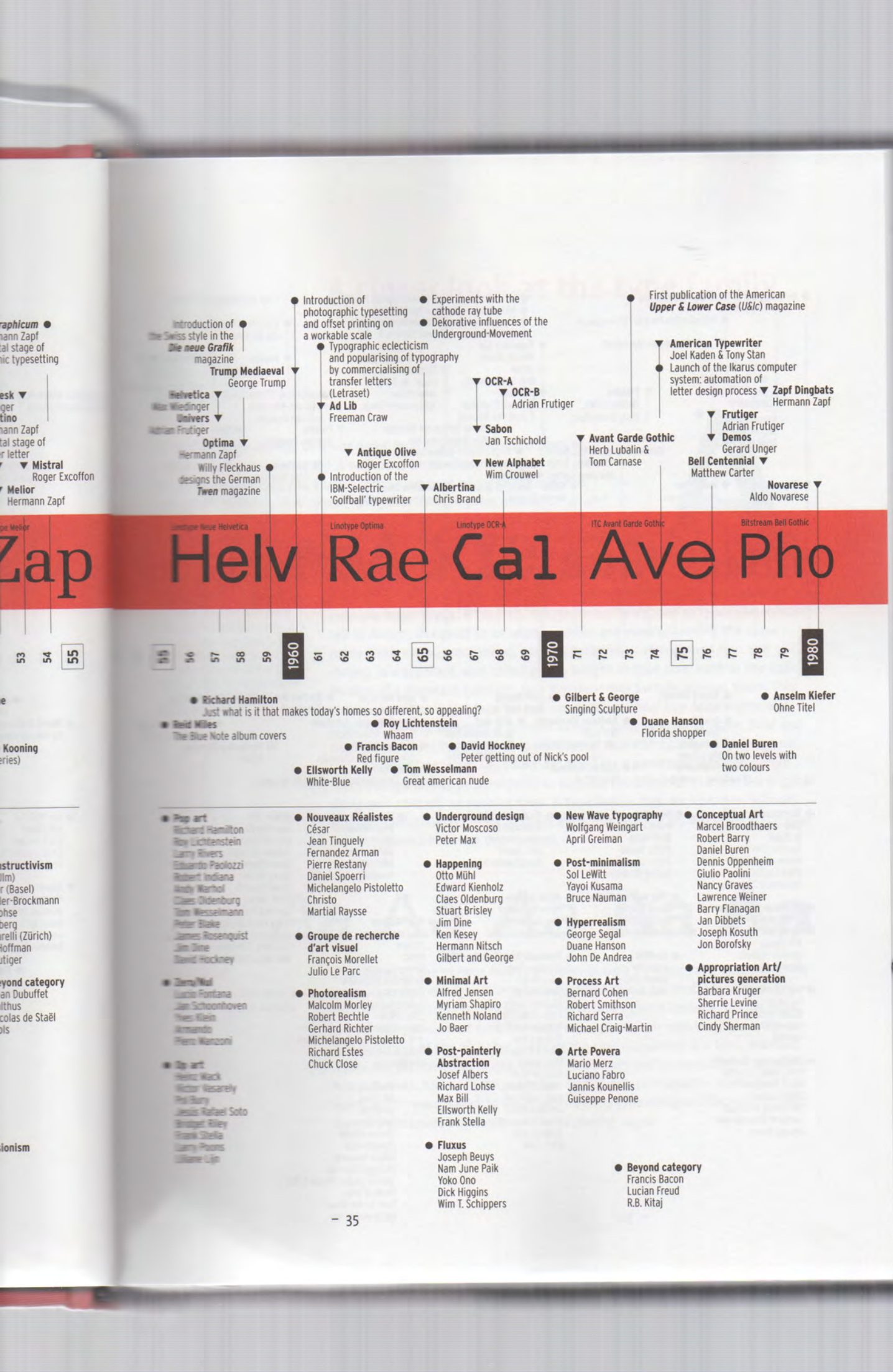
● **Beyond category**
Jean Dubuffet
Balthus
Nicolas de Staël
Wols

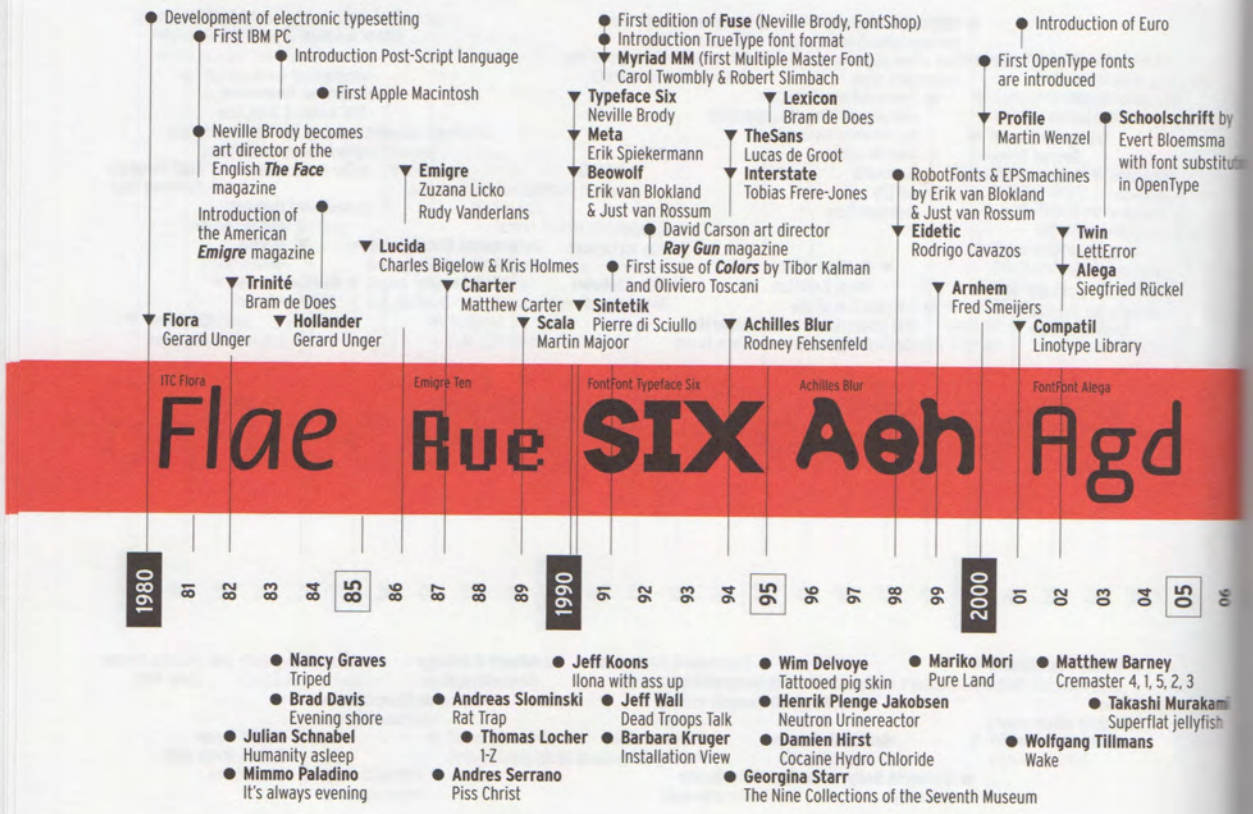
● **Abstract painting groups: Cercle et Carré / Art brut / Informel / Dau al Set / El Paso / Zero / American Abstract Artists Artyści Rewolucyjni / Abstraction-Création / Fronte Nuovo delle Arti / Section d'Or**

● **International Graphic School**
Antonio Boggeri
Theo Ballmer
Xanti Schawinsky
Herbert Matter
Max Bill
Giovanni Pintori

● **Color field painting**
Josef Albers
Mark Rothko
Clyfford Still
Barnett Newman

● **Calligraphic Expressionism**
Henri Michaux
Georges Mathieu
Hans Hartung


Introduction of the Swiss style in the Die neue Grafik magazine
Trump Mediaeval George Trump
Helvetica Max Miedinger
Univers Adrian Frutiger
Optima Hermann Zapf
Willy Fleckhaus designs the German Twen magazine
Introduction of photographic typesetting and offset printing on a workable scale
Typographic eclecticism and popularising of typography by commercialising of transfer letters (Letraset)
Ad Lib Freeman Craw
Introduction of the IBM-Selectric 'Golfball' typewriter
Experiments with the cathode ray tube
Dekorative influences of the Underground-Movement
Antique Olive Roger Excoffon
Albertina Chris Brand
OCR-A
OCR-B Adrian Frutiger
Sabon Jan Tschichold
New Alphabet Wim Crouwel
First publication of the American Upper & Lower Case (U&lc) magazine
American Typewriter Joel Kaden & Tony Stan
Launch of the Ikarus computer system: automation of letter design process
Zapf Dingbats Hermann Zapf
Frutiger Adrian Frutiger
Demos Gerard Unger
Avant Garde Gothic Herb Lubalin & Tom Carnase
Bell Centennial Matthew Carter
Novarese Aldo Novarese
Linotype Neue Helvetica
Linotype Optima
Linotype OCR-A
ITC Avant Garde Gothic
Bitstream Bell Gothic
Helv Rae Cal Ave Pho
1960
65
1970
75
1980
Richard Hamilton Just what is it that makes today's homes so different, so appealing?
Reid Miles The Blue Note album covers
Roy Lichtenstein Whaam
Francis Bacon Red figure
David Hockney Peter getting out of Nick's pool
Ellsworth Kelly White-Blue
Tom Wesselmann Great american nude
Gilbert & George Singing Sculpture
Duane Hanson Florida shopper
Anselm Kiefer Ohne Titel
Daniel Buren On two levels with two colours
Pop art
Richard Hamilton
Roy Lichtenstein
Larry Rivers
Eduardo Paolozzi
Robert Indiana
Andy Warhol
Claes Oldenburg
Tom Wesselmann
Peter Blake
James Rosenquist
Jim Dine
David Hockney
Zero/Nul
Lucio Fontana
Jan Schoonhoven
Yves Klein
Armando
Piero Manzoni
Op art
Heinz Mack
Victor Vasarely
Bridget Riley
Frank Stella
Larry Poons
Jeanne Lijn
Nouveaux Réalistes
César
Jean Tinguely
Fernandez Arman
Pierre Restany
Daniel Spoerri
Michelangelo Pistoletto
Christo
Martial Raysse
Groupe de recherche d'art visuel
François Morellet
Julio Le Parc
Photorealism
Malcolm Morley
Robert Bechtle
Gerhard Richter
Michelangelo Pistoletto
Richard Estes
Chuck Close
Underground design
Victor Moscoso
Peter Max
Happening
Otto Mühl
Edward Kienholz
Claes Oldenburg
Stuart Brisley
Jim Dine
Ken Kesey
Hermann Nitsch
Gilbert and George
Minimal Art
Alfred Jensen
Myriam Shapiro
Kenneth Noland
Jo Baer
Post-painterly Abstraction
Josef Albers
Richard Lohse
Max Bill
Ellsworth Kelly
Frank Stella
Fluxus
Joseph Beuys
Nam June Paik
Yoko Ono
Dick Higgins
Wim T. Schippers
New Wave typography
Wolfgang Weingart
April Greiman
Post-minimalism
Sol LeWitt
Yayoi Kusama
Bruce Nauman
Hyperrealism
George Segal
Duane Hanson
John De Andrea
Process Art
Bernard Cohen
Robert Smithson
Richard Serra
Michael Craig-Martin
Arte Povera
Mario Merz
Luciano Fabro
Jannis Kounellis
Guiseppe Penone
Beyond category
Francis Bacon
Lucian Freud
R.B. Kitaj
Conceptual Art
Marcel Broodthaers
Robert Barry
Daniel Buren
Dennis Oppenheim
Giulio Paolini
Nancy Graves
Lawrence Weiner
Barry Flanagan
Jan Dibbets
Joseph Kosuth
Jon Borofsky
Appropriation Art/ pictures generation
Barbara Kruger
Sherrie Levine
Richard Prince
Cindy Sherman



Transavantgarde/ Neo-expressionism in Italy
Sandro Chia
Mimmo Paladino
Enzo Cucchi
Francesco Clemente

Neo-expressionism in Germany
Georg Baselitz
A.R. Penck
Markus Lüpertz
Anselm Kiefer

Heftige Malerei
Bernd Zimmer
Rainer Fetting
Helmut Middendorf
Salomé

Mühlheimer Freiheit
Hans Peter Adamski
Peter Bömmels
Walter Dahn
Jiří Georg Dokoupil
Gerhard Naschberger
Gerard Kever

Neo Geo
Peter Halley
Roni Horn
Philip Taaffe
Peter Schuyff
Ashley Bickerton

The new wild ones
René Daniels
Henk Visch
Rob Scholte

Graffiti
Keith Haring
Rammellzee
Jean-Michel Basquiat

Postmodernism/ Eclecticism
Jenny Holzer
Jeff Koons
Donald Baechler

After Nature
Peter Klashorst
Bart Domburg
Jurriaan van Hall

Young British Artists (YBA)
Stephen Park
Gary Hume
Sarah Lucas
Michael Landy
Anya Gallaccio
Richard Patterson
Tracey Emin
Jake & Dinos Chapman
Marc Quinn
Damien Hirst
Angela Bulloch
Matt Collishaw
Ian Davenport
Angus Fairhurst
Abigail Lane
Chris Ofili

Computer art/ Pop reloaded/
Micha Klein
Mariko Mori
Michel Majerus
Knowbotic Research

Post Human
Paul McCarthy
Stelarc
Orlan
George Lappas
Yasumasa Morimura
Charles Ray
Robert Gober
Mike Kelley
Karen Kilimnik
Jeff Koons (Cicciolina-Periode)
Clegg & Guttmann
Wim Delvoye

Media Art
Bill Viola
Gary Hill
Julia Scher
Steven Pippin
Pipilotti Rist
Gillian Wearing
Philippe Parreno
Jane & Louise Wilson (YBA)
General Idea
Sam Taylor-Wood
Matthew Barney

Urban Art
Henning Eichinger
Gabriel Orozco
Yvonne Kendall
Nina + Torsten Römer
Barry McGee
Steve Powers
Todd James
Bernard Föll
Mauy Parivuhiphongs
Maggie McCormick
Christine Gillespie
Michael Capapas

A closer look at the type family

Over the course of time, different terms for the appearances and parts of typefaces have been invented in various countries and languages. And now that, in the computer era, English terms have been added to the mix, it is complete confusion. Is it cursive, oblique or italic; regular, normal or roman? Consensus on this front would be a good thing, but cannot be expected just yet. To at least provide clarity for the terms used by us in this book, we will here give their definitions.

Above right: the capital 'A' of the Linotype Compatil Letter Bold. This typeface belongs to the slab-serifs category, as does the Serifa, shown below in all its variants. Characteristic of the group are the heavy, rectangular serifs and little thick-thin contrast.

A typeface category is a named group of typefaces displaying similarities, for example script types. A typeface or type family is a group of types closely related in design, designed to be used together and usually bearing the same name (with various modifiers), such as Rockwell or Helvetica. A font is a variant of a typeface, also called grade, weight or type sort, such as the italic version of a standard typeface. So a typeface may include various fonts. This means that if we buy a font for our computer, we only buy one version of a typeface. Mostly, however, a number of fonts such as Regular, Italic, Bold and Bold Italic are sold as a set. A master font is a version as originally designed with a particular intent, i.e. a font designed for a particular size (the design size), though it may be used (with or without modification outside the original designer's control) for various sizes. A type family may, for instance, include three different master fonts to cover sizes from 6 to 72 pt, but other fonts may be interpolated between the masters.

Typeface or type family

Aa *Aa* **Aa** *Aa* **Aa** **Aa**

Font or variant

The Linotype typeface Serifa displayed in all available variants.

The names of the various fonts can differ quite a bit from each other, too. The normal version of a typeface is indicated as Roman, Normal, Medium or Regular. The italic version of a typeface is sometimes called Oblique. In this book, we use the names that type founders have given their own variants or fonts. The 26 letters of the alphabet are only the core characters in a font. Without numerals, punctuation marks, special characters and accented signs, a font is not complete. And each language has its specific punctuation marks and ligatures, which were added to some fonts by the type designer. The variants of a font are discussed separately on the following pages.