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EsadType 2021–2023

A Typeface Family
Inspired by
Industrial Lettering
and Printing
Technique

École Supérieure d'Art et de Design d'Amiens

TARIF 1909

Fabrique de Brosses et Pinceaux,-:-



Le présent Tarif annule les précédents

[fig. 1]
Promotional poster of the shop
"À la renommée du peintre", a brush factory
created by Hyppolite VoiLquin, 1909

330000

INTRODUCTORY NOTES

THE BEGINNING

I was interested in the post-graduate course at ÉsadType, because I considered typography to be the most effective graphic medium for communication, and I wanted to master it with greater ease.

This advertising poster dates from 1909 and comes from my great-great-grandfather's brushing company [fig.1]. I really liked the singularity of these letterings. I wondered how I could integrate their decorative elements into a reading typeface, which does not allow for so much frivolity because of its legibility constraints. Knowing that the company had diversified into the sale of hand tools, I became interested in the tool catalogues because it's the main medium of communication for these manufacturers. Tool catalogues appeared at the beginning of the 19th century, during the industrial revolution, in order to communicate to the greatest number of people. It was also in these same catalogues that new vernacular lettering designed for titling and advertising appeared. These letters were made possible by the appearance of new techniques, more accessible to non-professionals in typography, such as lithography, woodcut printing, pantograph or lettering

I have also noticed that the design of the reading type used for the catalogue adapts to technical developments in printing or photographic reproductions in order to preserve the legibility of the letter. Examples include the linotype machine, photocomposition and the typewriter.

Today, digitalization and offset printing have freed typographic design from these constraints. It remains to be seen whether reusing these old forms for their industrial connotations is relevant for contemporary reading...

THE MYTH OF NEUTRALITY IN TYPOGRAPHY

Compared to the highly decorative catalogues of the 19th century, contemporary tool catalogues (from Proxxon or Hilti to name but a few) use neo-grotesque linear typography (Helvetica or Univers). These typefaces are so present in our environment that we end up not seeing the typeface at all in favour of the objects presented in the catalogue. In itself, why not... I thought it was relevant to use a typography that I considered "neutral" so that the form would only serve the content. But what is a "neutral" typography?

Vivien Philizot, in his publication "Le signe typographique et le mythe de la neutralité" (The Typographic Sign and the Myth of Neutrality), asked himself about this. According to his research, this neutrality is pretended. In fact, the aesthetic choices would only be the result of technical developments and a search for legibility in the service of the content in order to maintain a pleasant reading experience. In my opinion, this would correspond to rationality rather than neutrality.

I would summarise rationality in typography as the search for the simplest, most economical and most effective writing technique to convey any information to the intended readers, taking into account all the general and particular conditions of format, reading conditions, time, distance, price and quantity, and this since the appearance of writing and calligraphy.

This process was accentuated with the invention of the printing machine to adapt to the new technical constraints of printing. The latter initiated a questioning of the forms established by handwriting by reducing the letter to its significant forms

(from Philippe Grandjean and his Romain du roi at the end of the 17th century to Bayer's universal alphabet, to name a few of them).

During the second half of the 20th century, the question of neutrality in typography was raised, notably by Adrian Frutiger. He would have noticed a recurrent skeleton between all the styles, which would have given the typeface "Univers".

However, in the same period, this search for neutrality in typography was challenged. Indeed, despite the modernist movement that advocated a rejection of history and ornamentation, modern classicism, a movement represented by type designers such as Jan Van Krimpen, took a different view.

As with the Bauhaus adherents, they integrate abstraction and technology into their design practice, without putting aside ornamentation and its historical connotations. For them, an overly rational alphabet can make reading too confusing (as was the case with Futura) as it would make the process too monotonous. The more organic and humanistic forms are more eye-catching, and would be more appropriate for a long reading. Furthermore, I have found that the irregularities and imperfections of letters printed through the old printing processes do not affect their reading even today. Finally, before reading letters, we read words.

This questioning of neutrality allowed me to stop making the endless parallels between neutral typography and neo-grotesque lineal, and thus to move towards more assertive design choices. Moreover, there are many different styles of lineal fonts, all with very different meanings. I applied this reflection to my documentary research on industrial typography. Finally, what is industrial typography? Indeed, drawing techniques related to industry can produce typographic forms that would not at first glance suggest industry (such as a single-line cursive). On the other hand, craft lettering techniques (such as brush, calligraphy or die-cutting) can suggest industry either by the angular forms produced by the tool or by producing types of lettering present in the industrial era.

To help me expand my possibilities and avoid giving a stereotypical typographic answer, I needed to expand my research, which I will summarise in this essay, without focusing on a specific source. In the first part, I will discuss the formal qualities of letters due to industrial reproduction techniques (or not) and produced by type designers, engineers and scientists alike. I will study the role of perception and optics in letter recognition and how speed and distance also influence its design. This study will help me to choose the typographic forms that I consider to be the most relevant for reading purposes. In a second part, I will present the experimental steps that led me to my final typefaces.

I. DOCUMENTARY RESEARCH

I EXAMPLES OF LETTERS CONSTRAINED BY MATERIAL AND INDUSTRIAL TECHNIQUES

As a typeface designer, basing my work on existing lettering is interesting. For a lettering job, some letters are drawn. So the lettering is not meant to be used as typography. Moreover, some are created by typographic amateurs, and approach the letter in an empirical way with the aim of making it visible and legible despite the strong constraints of space and applications. Innovative forms can be created in this way and can be an interesting source of inspiration for creating new typography. In this part, I wanted to focus on lettering drawn by technical design or constrained by the material.

LETTERING INTEGRATED INTO ARCHITECTURE

From the 19th century onwards, artistic movements related to architecture appeared (Art Nouveau, Art Deco, Jugendstil, Wiener Werkstate). Industrial designers as well as architects became interested in the letter and integrated it into their creations for signage. This application within architecture requires space constraints that encourage the use of lettering with a fixed spacing and in capitals, as we can see on license plates for example [fig.5]. In capital letters, line spacing is simplified, as there is no need to take into account ascenders and descenders. In addition, in the context of signage, the letters only need to be visible in the context of a short reading. Capital letters are therefore sufficient for this purpose.

As the letters are cut from rough, solid materials, sharp, clean cuts are made, resulting in numerous irregularities in their design. Certain characteristics are recurrent in these letters, such as the diagonals joined by a horizontal crossbar for the "K;" a high lower point which makes it possible to narrow the "M", or a diagonal branch joined by a horizontal crossbar for the "X". Due to the constraints of cutting, contrasts are sharpened at junctions; terminals can be bevelled for diagonal stems; roundness can be flattened as well as having an overall straight appearance. In order to deal with the difficulties of kerning for Dutch digrammes such as the combinations "AA" and "IJ", the apex of "A" is flattened and broad and serifs are present on the letters "I" and "J" in order to fill the lateral gaps [fig. 7]. I can sometimes find a thickening of the line with a straight outline in the countershape and a round one on the outside [fig. 3].

These characteristics are present in the work of contemporary designers such as René Knip, who is specialised in volume typography and industrial lettering [fig.2]. He himself was inspired by the Art Deco movement and the typography of the 1920s to 1960s with their lettering integrated into the architecture.

Another example that adopts similar forms is the movable wooden typefaces that were popularised in the 19th century. They have the advantage of being easier to handle than metal type and can be produced in large size with the help of the pantograph. The latter is a practical tool for easily reproducing any size of letter from a model design. Wood is a very malleable material that allows for a wide variety of styles. However, I found some specific features of wooden movable type that I could relate to my other examples of industrial lettering [fig. 6]. In contrast to lead type, the "talus" is absent at the top and bottom of the letter, which does not allow for the necessary optical compensation for certain letters such as the "A" and "O" for example. Indeed, these letters would have to overshoot their baseline in order to give the impression that they are at the same height as other, more square letters such as the "E". One solution was to use octagonal shapes. These shapes are also present in René Knip's work in order to apply these letters to very constrained spaces [fig. 7]. These shapes give a very mechanical appearance to the letter, and because of the absence of "talus", line spacing is greatly facilitated by the absence of ascenders and descenders and is suitable for headlines as well as poster compositions. Lowercase is therefore less suitable for this type of technique and use.



;. 2] :ain By René Knij

dsvej

;. 3] his lettering for signage fte 1923

KSZ.

. 4] d at Amsterdam t David Quay

57AH

[. 5] ence plate

INSTILUCTION

[fig. 6]
Detail from a poster printed by Paullet, 1842
(Archives Municipales de Nancy,
14FI-3092) http://www.ericnunes-carnet.fr/)

J BODEBALIE TROUWHAMER

Type design for signage conceived by René Knip for City Hall Rotterdam



Stenci

Kombinationsfdhri Uktiengesellfdafl

[Sample] Kombi Aktiengesellscha

RADICALITY OF THE DRAWING BY THE STENCIL AND THE MODULE

In the 19th century, the Stencil was used by architects, engineers and surveyors, as it allowed them to reproduce shapes quickly and on different types of support with elementary and radical forms. With the stencil, letters can be reproduced by filling in the shape cut out of the material, making it a tool accessible to all.

Eric Kindel, based on his research conducted in the United States, dig into the work of Mayson J. Metcaff [fig. 8]. The latter marketed complete kits providing the necessary material to make one's own stencils on metal plates. Since the stencils are not pre-made, they must be hammered directly onto the surface with the steel letter ends. In order to have a stencil that is sufficiently resistant while having legible letters in small sizes, the tenons are sufficiently wide and the letters are reduced to their elementary forms. The result is a typeface adapted for small bodies while evoking the field of manufacturing through these geometric and radical forms.

This work anticipates the future type design of Bauhaus typographers by their research of simplification and their radical approach such as the Kombinations-Shrift of Joseph Albert. This typeface was intended to be used on glass, plastic and wood and not as an editorial typeface. [fig.9]

Stencil is a way to create a complete typography through the use of a few modules. Stencils can be characterized by openings, but are mostly characterized by its lack of counter form [fig.10&11]. The type designer William Addison Dwiggins used to design reading typefaces from stencil modules [fig.12].



[fig. 10]
Bahr's Normograph, 1909 "From Lettering
Guides to CNC Plotters — A Brief History
of Technical Lettering Tools", Typotheque.com



[fig. 11]
Stencilling for letters and printing texts in the 17th century.
Research conducted by Eric Kindel



[fig. 12]
The celluloid stencil that Dwiggins made for the specimens in the 'Newsface', 1937.
Image from the website "hex.xyz"

SINGLE LINE LETTERS AND TECHNICAL DRAWINGS

With the Stencil, it is possible to reproduce letters with the technical pen, like the Rotring. The technical pen produces a letter with a single line. So, the letter does not have any contrast. An interesting example of a stencil is "La Plaque découpée Universelle" by Joseph A. David at the end of the 19th century [fig. 20 / next page]. In addition to the advantage of the stencil's accessible use, the use of a single plate to draw all the letters of the alphabet (especially the capitals) results in letters of the same height and size. These letters are therefore perfectly suited for use in signage. Because of the grooves, the letters can easily be drawn with a rotring by engineers, but also by children to learn how to read. Another stencil suitable for the technical pen is the normograph [fig 13].

The monolinear letters are also used as a skeleton to draw all the other variants of a typeface from the Light to the Bold version for example [fig. 14]. It is also possible to draw a contrasted typeface through the formation of several lines by vector drawing [fig. 16]. Neon-lit, CNC-reproduced or letters produced by vectors can also be produced with a single line. Either a letter can be created with a single line or adding some contrast by the help of several lines [fig. 15 and 16]. An interesting example is the work of Gerard Unger for his typeface Markeur. In order to achieve the contrast needed to give the feeling that the horizontal and vertical stems are equal, two passes of a milling cutter were necessary. He shifted the milling cutter pass slightly on the vertical stem to make it wider. It renders a rounded design on the edges of the stems. [fig.18].

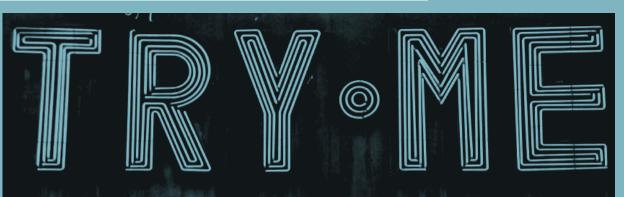
Given that the majority of letter endings are rounded, cursive scripts, written with a technical pen, can be reproduced with the CNC machine [fig. 17] and can be a good inspiration to be reproduced by this technique.

I found monolinear typography to be an interesting formal response to my project in that I find it more unfamiliar compared to the rugged and cut letters, whose connection to the industrial environment was more obvious to me.

JREM 31XV3

9

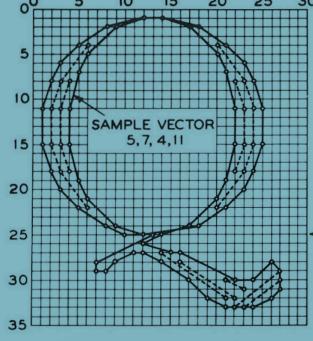
[fig. 14]
Typeface family
Nexus, by Martin Majoor a font based
on the same skeleton FontShop, 2004



[fig. 15]
Photography from the website www.studiotype.
Part of a research project on inline typography by
Joe de Baerdemaeker



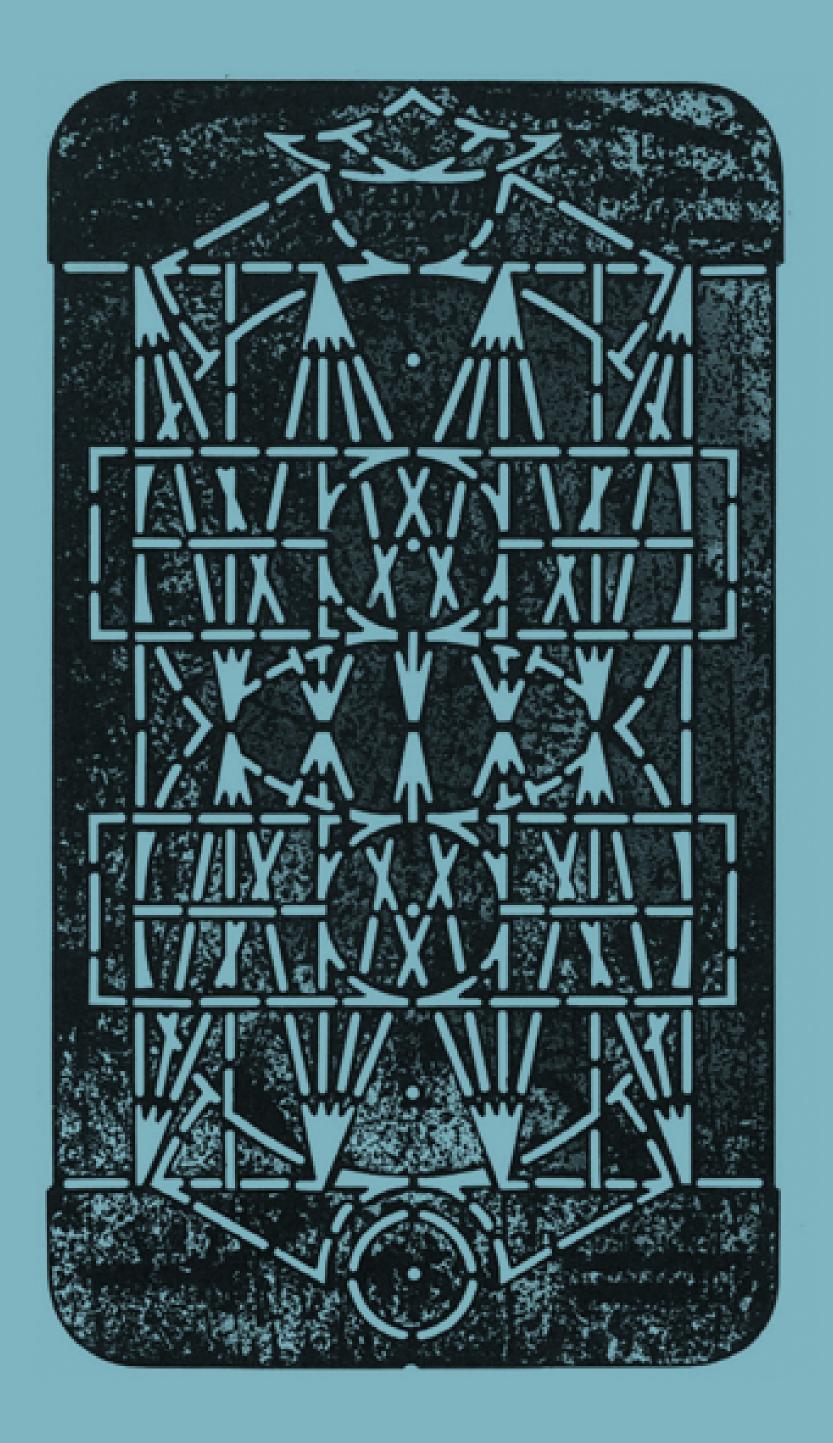
[fig. 18]
Figure from the Markeur typeface designed by Gerard Unger, 1972



[fig. 16]
Drawing with vector lines
Hershey developed around 1967,
Dr. Allen Vincent Hershey at the Naval Weapons
Laboratory

il est original!

[fig. 17]
The typeface "Stylo", La Fonderie Typographique
Française, 1939





[fig. 19] Universal cut-out plate Joseph A. David, 1876

II RATIONALIZATION OF THE LETTER BY PRINTING TECHNIQUES

The main purpose of typography is to increase the speed and the production of the writings. This objective will lead to the modification of our writings with the movable type and the printing process.

printing process.

The repetition of the forms by the work of the counterforms, is a fundamental factor of the typography. Indeed, from the very first movable typefaces, the same counterpunch is used to create several letters like p, q, d, and b. The engraving of punches is thus more related to an idea of sculpture contrary to the lapidary engraving cut with the burin which is more related to the idea of drawings. This approach even makes me think of certain stencil techniques such as the normograph where certain cut-out shapes can be reused for certain letters. The development of printing techniques and their speed had an influence on the drawing of letters as well as on the image of the text before the arrival of photocomposition.

PENMANSHIP: THE BASIS FOR THE STANDARDIZATION OF WRITING FOR PRINTING

Before the advent of printing, the tasks were done by hand. A calligraphic instrument that I find interesting is the bevelled nib. The contrast and angle are defined by the tool, which provides an intuitive medium for writing quickly and an awareness of the two-dimensional shape of letters and their visual rhythm.

At the end of Antiquity, a capital calligraphic script derived from Roman capitals (Capitalis Monumentalis) was born: the rustic capital (Capitalis rustica) which will help in the development of uncial scripts and the caroline minuscule. These scripts are more suitable for writing codexes with a pen, because the formation of descenders and ascenders allow better distinction between letters.

In the Middle Ages, an increase of the literate population in Europe led to the multiplication of books and the development of the Gothic script. The bevelled angle of the nib is used to reduce the width of letters by a very condensed writing and the formation of elemntary shapes to create letters. It enabled to write quickly and a lot of information on a same page. I can see through the gothic script that this calligraphic technique allows for broken shapes that can also be found in industrial lettering.

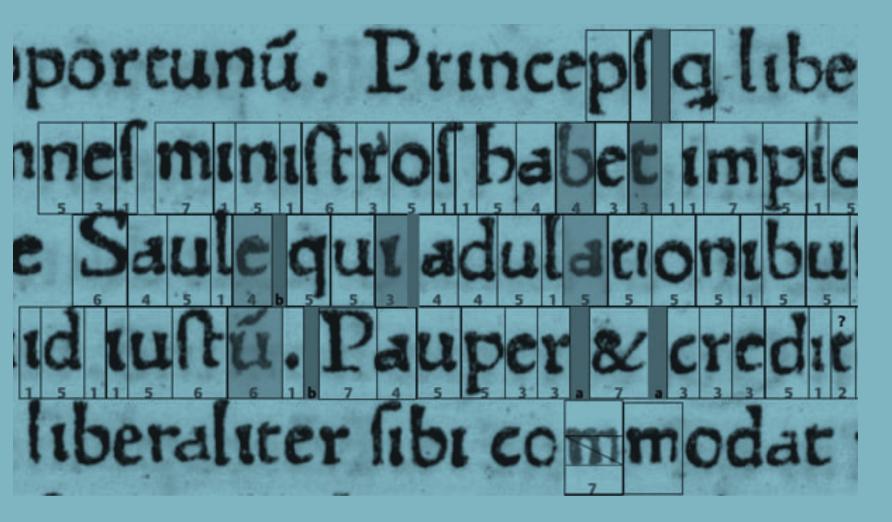
With the advent of printing, the shape of the letters must be standardized in order to facilitate their manufacture The Textura Quadrata written was therefore an ideal basis. Indeed, several letters, as the "a", the "n" or the "u", could be formed by the two stems of the "m" and be molded on the same caster [fig. 20]. The production of the punches and the spacing was thus greatly facilitated by these vertical and horizontal stems. According to Frank E. Blokland's research, the Gothic script may have served as a basis for the standardization of humanistic scripts for printing [fig. 21]. [1]

I found that the calligraphic technique could be compared to the Stencil by the systematism of the forms that it implies and allows the construction of very angular letters as can be found in the Gothic letters.

[1] "On the origin of patterning in movable Latin type: Renaissance standardisation, systematisation, and unitisation of textura and roman type" Blokland, F.E, 2016-10-11



[fig. 20]
Gutenberg's 42-lines Bible type (1455)
shows standardizations in horizontal
and vertical directions
www.lettermodel. org



[fig. 21]
Weynheym and Pannartz's unsophisticated type
from 1472 shows related standardizations
www.lettermodel. org

Birming

[fig. 22] Eight-line Egyptian condensed, Wilso

[fig. 23]
Presentation of Benton's "Self Spacing standardisation of body sizes for justification. Extract from Benton Spacing Type.

How is one to assess and even in terms of its esthetic despace-makers in the art of a specific face of type? Whit? Why is it so superlatively eyes? Good design is alway. And what they see in a go partly, its excellent practic form its work. It has a "he all of its parts just right form good tool has. Your good coparts made nicely to the riactly the work that the

[fig. 24]
American-based Linotype's response to the is
for newspapers in the twentieth century wa
legibility group. It started in 1926 with C.H. C
5, a descendant of Caslon's Ionic No.2. As sho
Linotype faces, 1938. St Bride Lil



From the 19th century onwards, industrialization and the increase in the speed of production led to the appearance of new printed matter known as "ephemeral" such as catalogs, advertising posters or the press. Typography moves away from the standards of the edition to adapt to these new prints in particular by an explosion of typographic creations of "eyecatching" titles. I can quote the low contrast slab serif typeface, also known as Egyptians, which are characterized by their rectangular serifs [fig. 22].

From these titling slab serifs, a sub-family of slabs was created to be adapted to the constraints of linecasting printing, the Clarendons. A very distinctive feature of these Slab serif is the bracketed slab serifs [fig. 25]. It is difficult to say whether these brackets are due to the smudging of the ink after printing. However, readers used to read from Roman typefaces with triangular smooth serifs. The use of geometrical serif seemed perhaps too strange for the reader. Brackets were therefore added to the rectangular serif to find a compromise between the over-geometric slab serif and the Serif of Roman typeface^[1].

Moreover, slab serifs were compatible for the fast and bad quality prints of the Linotype machine. Indeed, by these imposing rectangular serifs, they could resist to wear. Moreover, its moderate contrast between the full and the smooth, its important eye height, and its ascenders and descenders short, make it a typeface perfectly adapted for a reading in small size. Families of the "legibility group", such as Ionic or Excelsior, are good examples [fig. 24].

This analysis allowed me to identify two solutions for adapting typefaces to small sizes. Either, decorative elements and details that are too subtle to be visible in small type are reduced or erased. Or, we accentuate these details to make them visible. It is the latter solution that is used in typefaces like Ionic with its imposing serifs.

The linotype has the constraints of the fixed width typeface that we can find in the typewriters, especially by rationalizing certain glyphs under the same width. This standardization of the glyphs was already initiated by the typographers of the 16th century. This was demonstrated by Frank E. Blokland through studies of punches and printing in the Plantin-Moretus Museum, including the work of Claude Garamond and Pieter Van den Keere.

With the arrival of the linotype, Linn Boyd Benton invented in 1883 the "Self Spacing Type" which consists in classifying all the glyphs of a font in six categories of widths called "units". The narrow letters like the "i", the "j" and the "f" are 2 units while the " and the "n" are 4 units. This standardization makes it easier to compose justified text, but will result in strange proportions such as very wide "a" and very narrow "n". Some adjustments have been made to certain glyphs to compensate for these differences in cast. For the "a" for example, the lower ending is curved upwards to reduce its width and also to reduce the countershape of its bowl. Moreover, the letters being constrained in their width, glyphs like the "j" and the "f" have been narrowed. Indeed, the loops, the ascenders and descenders could not overflow on the neighboring characters to regulate the kerning as it was the case on the old movable characters [fig. 23].

Another constraint of the linotype is that each matrix has its roman and its auxiliary (an italic or a bold version). The benefit is that the composer can easily change version without having to change case. However, the italic and bold versions had the same width as the roman, whereas traditionally the italic is more condesned while the bold is wider. To make italics look like condensed, the bottom and top endings of some glyphs are curved to reduce their counterforms. Nowadays, we are used to these Linotype-induced features.^[2]

The typefaces created through the constraints of the linotype are a good inspiration for designing semi-proportional typefaces. They allow to give the texture of a typewriter while being adapted for a reading typeface. This can be achieved by defining fixed width for glyphs of similar widths.

 Three chapter in the devlopment of Clarendon/Ionic typeface/Mitja Miclavcic, University of Reading, 2006

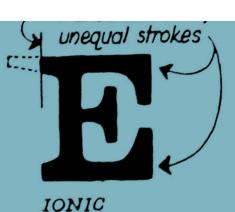
[2] "Technique & design graphique: outils, médias, savoirs" Edition B42, 2020

square serifs and equal strokes

EGYPTLAN

curved and slender serifs

ROMAN



[fig. 25]
Comparaison entre une mécane géométrique, une romaine et une Clarendon (Ionic)©Three chapter in the devlopment of Clarendon/ Ionic typeface/Mitja Miclavcic, University of Reading, 2006

TYPEWRITER AND FIXED WIDTH

The typewriter has the advantage of being accessible to everyone. The text must be written letter by letter and is not intended to be reproduced in several copies. Because of these constraints, its primary purpose is to communicate efficiently and quickly (and less to be read) and is therefore perfectly suited to business correspondence. Typing is also suitable for text intended to be corrected afterwards, such as scripts. Through this ephemeral use, the design of the letters is very simplified and rationalised; the letters are engraved with a single-line structure in a fixed-cast print bar [fig.29]. The advantage of a single-line relief for engraving is that it allows a high degree of legibility to be maintained, regardless of the pressure applied by the user and the paper used, and finally form a lineal. As with most fast printing techniques, the letters, once printed, tend to have more rounded edges due to the smudging of the ink and the quality of the paper [fig. 26]. Due to these constraints, cursive writing, written with a ball-point pen, can be reproduced by the technical constraints of a typewriter [fig. 30]. The print bars are manufactured in the same format to facilitate its production. The fixed width allows the user, who has no knowledge about micro-typography, not to worry about layout or spacing. The spacing is looser in order to unify the general colour of the text [fig. 28]. Knowing that the majority of the letter endings

The glyph design is similar to that of the Linotype printing process in that it is very constrained and can be printed very quickly. These typefaces are, in general, adapted from Clarendon typefaces already used by the Linotype. In order to fit a fixed width, special design adjustments are necessary, especially for glyphs that have wide and narrow widths in a proportional typeface. For example, the letters "m" and "w" are lightened to make the overall colour of the text more uniform. The letters "i" and "l" require long serifs to fill the gap, and their serifs are also present in a monospaced lineal typeface [fig. 27].

4 D



[fig. 29]
Vintage old typewriter hammer, 1943,
Photography by Charles Taylor, Adobe Stock













Silk

Typewritten'a' printed withribbons made of different materials. from the María Ramos Silva's thesis "Type design for typewriters: Olivetti", 2015

iiiii
00000
wwwww
iiiii
00000
wwwww
mmmm

[fig. 27]
Comparison between a monospaced typeface and a proportional typeface from a typewriter
From María Ramos Silva's essay "Type design for typewriters: Olivetti", 2015

The expression "Olivetti style", which is now commonly used in magazines and conversation to describe a specific taste and trend, evidently refers to something more than transitory fashion or gifted improvisation.

SOURCE: AA. VV. "Olivetti, 1908-1958" Ing. C. Olivetti, Ivrea (Italy) 1958, p, 145

[fig. 28]
Typewrittensamples of Pica (top)
tiré de la dissertation de María Ramos Silva
"Type design for typewriters: Olivetti", 2015

Olivetti Lexikon 82 ABCDEFGHIJKLMWOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz

Olivetti lexicon
Olivetti Roma
http://luc.devroye.org/, 2015

III LETTERS PRODUCED BY NON-INDUSTRIAL AND OPTICAL PRODUCTS THAT MAY CONNOTE INDUSTRY

The legibility of letters is essential for their recognition and for reading process. We have seen that type designers must take into account technical constraints in order to obtain the desired result. However, other parameters are taken into account for their drawings.

The tools or instruments used can influence the way letters are drawn. Even if they are not linked to industrial constraints or to a machine, they can evoke the industrial environment by the shapes they produce. Moreover, the distance, the size of the letters, the format used, and the speed of reading also have an impact on the legibility of the characters and thus on their drawing.

First, we will see that shapes that connote industrial

lettering can be reproduced by manual processes with the help of instruments used by plastic artists, letter painters and contemporary type designers.

contemporary type designers.

In a second step, I will show how the shapes produced by these tools can be useful to increase the legibility of letters. Some experimental studies have been done by type designers, engineers or scientists who have worked on this point.

TYPOGRAPHY AND LETTERS IN THE INDUSTRIAL ERA: THE CONTRAINTS BY THE TOOL AND THE FORMAT

I found the technique of letter painting interesting because it evoked, for me, the industrial era: its development took place in the 19th century, as a titling for signs and/or for advertising messages. Moreover, the letters are worked to scale and therefore allow a wide variety of weights and widths to best fit the format. As with monospaced typography, this format constraint means that the weights of certain letters such as the "m" or the "w" must be modified to fit the format. In this sign, the letter "i" appears to float in space. The question is whether serifs would have been necessary to fill the space as is conventionally the case with monospaced typefaces [fig. 33].

In order to achieve a high degree of design accuracy, the stems must be drawn in one stroke. The stems are slightly curved so that they can be corrected in case of error, and spikes may appear at the endings [fig. 31]. I also thought that these spikes (called white traps) were similar to those used in photocomposition to counteract the rounding effects of flashing [fig.36]. It also reminded me of the glyphic typeface, which are historically characters engraved in stone or metal (hence the triangular serif reminiscent of the chisel mark) [fig. 37].

The technique of lettering allowed for a wide variety of styles, as was also the case with wooden characters [Fig. 32]. One can see lineal as well as slab serif or more decorative styles. The Detroit or Tuscan style is a slab serif which, with its spurs and rectangular serifs, is perfectly suited to this kind of tool.

This style can be found in a typeface designed by Joseph Churchward. It has a handmade flavour, with the curvatures produced by the brush, while at the same time referring to the "Detroit" style typefaces from the 19th century industrial revolution [fig.35]. An another typeface who has a artisanal flavour but robust, which appeared in the same period, is the William Morris' Golden typeface, based on Venetian typefaces of the 15th century [fig.34]. The rectangular serifs embedded in a humanistic structure and its dense typographic grey gives this typeface an overall imposing and brutal posture and may be an interesting source of inspiration for a less stereotypical typographic response in relation to industry.



account

rack

by WM.H.page&Co, 1874



[fig. 36]
Optical compensation for Univers 69 before flashing by photocomposition, 1965



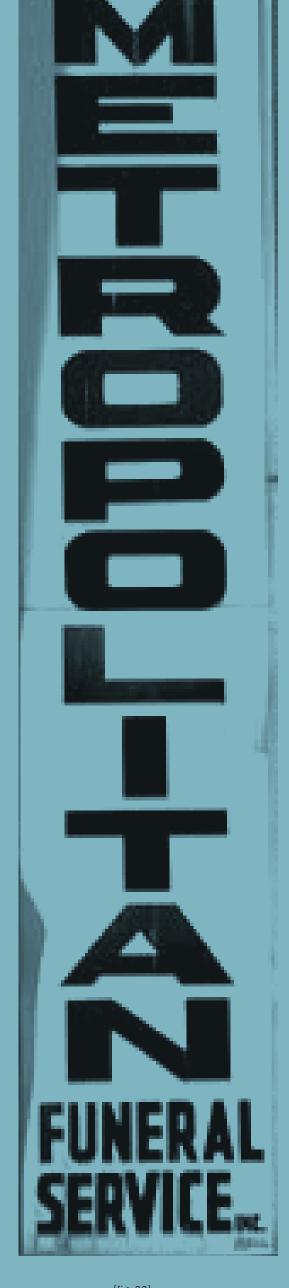
[fig. 37]
Detail of the Claudian Table, right column, 4,
Musée gallo-romain de Fourvière



[fig. 35]
Churchward Newstype Ultrabold
"collections.tepapa.govt.nz"

illiam

[fig. 34] Golden Typeface, William Morris, 1890



[fig. 33]
Signage, New York City.
Photographed by Tobias Frere-Jones and Nina
Stössinger, date unknown



CUTTING TECHNIQUE

Irregular shapes and square counterforms can be obtained by the cutting technique, either with the X-acto [fig. 41], the chisel or directly by hand. These cuts can even be reused for stencilling. The typographic foundry Occupant is a reference, designing typographic forms by making their own cutting tools and drawings [fig. 38].

I found the Ad Lib titling typeface designed in 1961 for ATF (American Type founders) interesting. The handmade look of the Ad Lib, whose letters appear to have been carved on wood or linocut, is due to the chisel cut in black material. The geometric shapes are reminiscent of the massive lettering of the American artist Ben Shahn in the 1940s and 1950s, for example [fig. 40].

[fig. 38] Willem Sandberg, 1957, New Year's card, 1956

[fig. 39]
Letters painted in cut paper.
Picture from Cyrus Highsmith's Instagram
account @Occupantfont

ABCDEFGHIJKLMNOP QRSTUVWXYZ abcde fghijklmnopqrstuvwxyz

[fig. 40] Ad Lib typeface by Freeman Craw pour ATF, 1961

Silk thread
pearl mountain
cello scroll

[fig. 41]
Poster for "But Beautiful",
by Sean Singer, 2002

READING IN SMALL BODY TEXT THROUGH OPTICAL COMPENSATION

Passionate about typography, Émile Javal shows, through his research in his laboratory, that reading is done in jerks, that "the gaze does not have time to examine each letter" that the point of fixation moves along a line that cuts the letters a little lower than their top. He notes the role of the law of "least effort". To improve legibility, Javal recommends eliminating line spacing; decreasing approach; flattening type; using a smaller size; and decreasing the extenders of long letters. When reading, Javal demonstrates that the reader does not examine each letter in detail. Only the accentuation of the main characteristics of the letters is sufficient for their recognition, especially since the details are less perceptible to the naked eye in small type [fig. 47]. Thomas Huot Marchand, in his typeface "miniscule" in size 2, goes even further in the simplification of the letters by reducing them to their significant forms [fig. 48]. The result is surprising, because it brings it closer to the Stencil letterforms from normograph or to the modular typography "Kombinations-Shrift" of Joseph Albert.

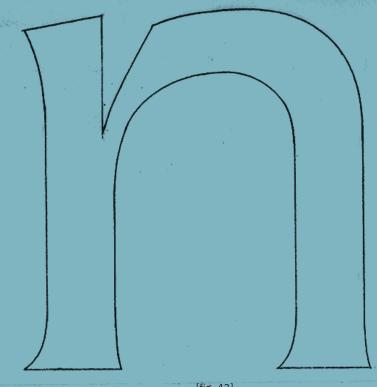
Another interesting reference was the work of Ladislas Mandel, who notably designed a typeface for telephone directories, Galfra [fig.43]. He was also inspired by the work of Emile Javal to create his typeface designed for telephone directories. The aim was to achieve an optimal degree of legibility in size 5 for a work that requires maximum space saving through very tight line spacing. What I liked in this typography is the presence of breaks in the attack of the curves as an ink trap. One finds on the terminations, the points as optical compensation. In order to optimize the photocomposition for the cathode ray tube machines, Ladislas Mandel anticipated this pixelization by drawing himself the bitmap version of his characters. It is the technique of the "predigitization".

Light and distance influence the way objects are perceived. Dwiggins realized that straight lines and geometric curves properly assembled were more effective in portraying the puppet's face than combinations of curves and flowing shapes. Likewise, angular shapes are perceived as curves when viewed in small form. He will apply this approach by opening up the counterforms of these letters with sharp angles, to increase their legibility in small type [fig. 44].

Simplifying the shapes of the letter by strong and angular forms and seeing the effects when reduced are not only effective from a functional point of view, but also interesting in terms of formal invention. Freight, a contemporary typeface family designed in 2005 by Joshua Darden, use these angular shapes in their type design for the micro version [fig. 45] [1]. Finally, these features, used for small body text, could also be used as a display typeface because of their peculiar shapes.

With punch engraving, the letters could be reduced to a size that was difficult to achieve with the calligraphic technique [fig.42]. Indeed, the steel used for their engravings was so malleable that the engravers could achieve many subtleties in the design. The old punch typefaces designed for the small body remain an interesting source for creating typography. Angular shapes are noticeable on timeworn punches designed for small size printing. Despite the wear, they could be reused, as the defects of the punches had little impact on the legibility of the letters when printed in small type.

[1] Texte tirée en partie et traduit de l'article de Nick Sherman, Gerard Unger, Experimental № 223, a newspaper typeface, designed by W.A. Dwiggins https://hex.xyz/Experimental № 223/



[fig. 43]
Ladislas Mandel, Galfra typeface
for telephone directories, 1975



[fio 44]

e first sketches showing the M-formula lied to type, an illustration also from the document of 3 July 1937, (hex. xyz /Experimental_No_223/)

eight

[fig. 45] Freight Micro, Joshua Darden, 2005

56ea

[fig. 46]
Bell Centenniale designed by Matthew Carter in the period 1975–1978.

particulière

[fig. 47]
Typographic experimentation by Emile Javal
Physiology of reading and writing
Scientific treatise, 1905

Typ-graphie

[fig. 48]
Minuscule typeface in 2 pt,
Thomas Huot-Marchand



[fig. 49] Pré-rounding of letter "a" Gerard Unger, Markeur, 1972

DESIGN TECHNIQUE: PRE-ROUNDING THE CASE OF GERARD UNGER

Photocomposition is a process of composing lines of text in typographic quality by a photographic principle, and not, as in the early days of printing, by manually or mechanically assembled lead type.

Photocomposition tends to round off angles and details after flashing [fig. 50]. For his Demos typeface, Gerard Unger has taken on this constraint by rounding off the details and angles of his letters in advance to preserve the original design [fig. 49].

When signs are illuminated from the inside with fluorescent tubes, the principles of optics can be used as a basis for the design. Whatever the shape of the opening (triangular, square or polygonal), the light passing through it on a surface always tends to form a circle. M.O.L. typography is rounded at junctions and terminations to make the light lettering more uniform and legible [fig. 51].^[1]

These forms of designs adapted for photocomposition or for certain illuminated signs are reminiscent of other designs of similar shape caused by industrial printing and lettering techniques. One can think of the rounded endings and corners caused by the smudging of the ink after printing. One can also think of the rounded endings of letters drawn by the technical drawing, as well as the rounded corners caused by the milling machine.

Nowadays, rounding the design to make it imperfect can be seen as a purely stylistic element. A rounded design can give an industrial flavour by giving the feeling that the letter has been stamped roughly.

[1] Informations tirées du livre de Christopher Burke "Gerard Unger: life in letters"

Here are some Sears Lab personnel, dedicated to the continued development and quality of CRAFTSMAN Tools

In 1911, Sears was offering a number of food products to our customers. To test the quality and purity of these items, we hired a food chemist. Thus was born the Sears Laboratory.

From this humble beginning, Sears Lab has grown into one of the biggest resources of its kind in American business. Our facilities have expanded from a single room to over 65,000 sq. ft. of lab space. As our staff and facilities have grown, so has the scope of our activities. Besides sample testing, our staff is involved in full consulting and developmental responsibilities on problems that may occur with any of the products we sell.

[fig. 50]
Sample from the tool catalogue
"Sears Power and Hand Tools"
from website archive. org 1985/86 1985

ABCDEFGHIJ KLMNOPQRS TUVWXYZ abcdefghijkl mnopqrstuv wxyz-.:,

> [fig. 51] M.O.L. signage typeface designed by Gerard Unger, 1974

TYPEFACES ADAPTED TO DIGITAL CONSTRAINTS

Since the 1990s, the Apple Macintosh computer has been an integral part of the process of creating and designing graphic media. Designers developed typeface families whose shapes were linked to the constraints of the computer and the laser printer. With digital technology, the notion of the screen and, more particularly, of resolution, appears. The designer is therefore no longer constrained only by his own optical capacities, as the engraver was in the 16th century, but also by the resolution of his display. Thus, Zuzana Licko designed the Emperor typographic family in 1985. She fully assumes the reductive aesthetics of the bitmap mode as a sign of their digital origin. The digital tool thus allows the emergence of a new formal style, that of the pixel/bitmap with the capacity to obtain innumerable possibilities. This led to the creation of one of the very first independent online foundries: Emigre Fonts. [1]

Unlike Ladislas Mandel, who develops a bitmap version of an existing typeface with pre-digitalisation, bitmap typographies can also be used as a basis for developing other typographic forms.

The Triplex typeface, for example, is based on the Citizen typeface, which is made up of straight lines and is itself based on the BitMap Lo-Res Twelve typeface. As a first step, she increased the resolution of her Bitmap font to make it suitable for screen to printer. To do this, she used programs that polished the stepped pixels into smooth diagonal and circular segments. The Triplex retains a very rational and geometric look, although Zuzana Licko has included more curves in the design. Bitmap and pixelated typography are less relevant today for our screens, as they have a higher resolution. Nevertheless, basing one's work on pixels is interesting because it creates robust, low-contrast shapes that are perfectly suited to small sizes and poor quality paper and makes hinting easier [fig. 52].

However, the matrix grid is still used for some purposes.

LED bus displays still need to fit a matrix grid for example [fig 54].

This grid is also used for dot matrix printers. They are still

This grid is also used for dot matrix printers. They are still used in industry because they are inexpensive and very resistant to heat and dirt. These dot matrix printers are still used for printing receipts for example [fig 53].

[1] Tiré du mémoire de Lola Lou Li "Défaut et singularité dans la création de caractères typographiques"



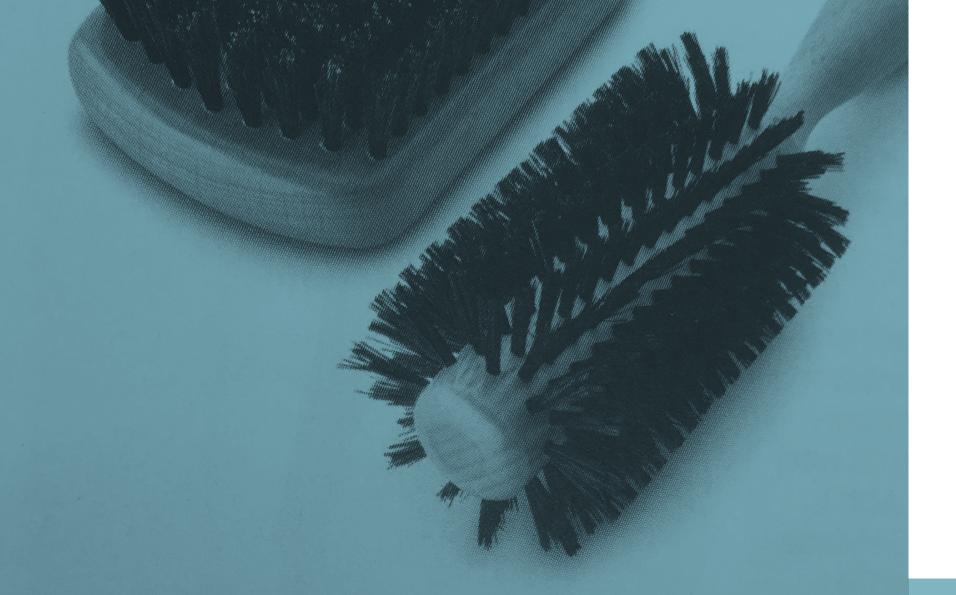
[fig. 52] of the letter "a" to Triplex typography, Zuzana Licko, 1985 – 2001



[fig. 53]
Matrix print character.

134 Porte d'Orléans 57 Pl Saint Georges 72 Chatelet-Halles 258 Issy Val-de-Seine/Meudon® ParcHenri Barbusse/Nieuport® 196 Issy Val-de-Seine

[fig. 54]
LED Display typeface, Parisine Girouette,
Jean-François Porchez, 2012



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KENT HA

Pflegebürglattes od langes und gut entwir Haar und Korpus Kihärtere Wlänge 2 cm 5,5 cm, He Bestell-Nr



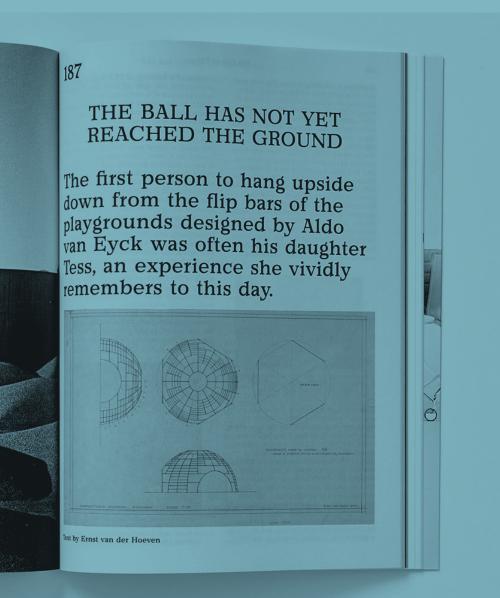


FROM EDITORIAL CONTEXT, TO WEB CONTEXT?

The old tooling catalogues were an interesting source to understand the technical, economical and cultural data that led to the use of a certain typographic style or layout. I had to think about the application of my family within contemporary editions to better determine my needs in terms of typographic design and typeface. Mac Guffin magazine is one of my references [fig. 56]. It uses the Churchward Newstype designed by Joseph Churchward. It is a versatile typeface that is both functional, as it is legible in a working typeface, and confers an identity in relation to the subjects the magazine deals with, craft and object design. Indeed, this typography combines an artisanal aspect, through organic shapes produced by the brush, with a reference to the vernacular lettering of the 19th century industrial era through the presence of Detroit-style with their slab serifs.

Another reference edition is the Manufactum catalogue [fig 55 and 57]. Manufatcum is a German distributor company that mainly sells gardening equipment made with traditional methods and materials in shops or online. A wide variety of other goods are offered such as cosmetics, computers, shoes, etc. The main strength of this catalogue is the use of the Atlas in commercial text. It is a very functional linear typeface with long ascenders and short descenders, which allows a high reading comfort even with very tight line spacing. These formal qualities make it such an economical and functional typeface that it can be placed on a narrow column and thus condense a maximum of information.

Based on these two catalogues, I was able to think of typographic creations with contradictory stakes: it must be adapted for long readings such as articles and interviews, but also for discontinuous reading, consultation and therefore a demand for hierarchisation of information.



[fig. 56] Sample from MacGuffin magazine



Architectonics Unacclimatized Remanufactures Nonmathematical Environmentalists Pseudoclassicism

[fig. 58] Tungsten Rounded, 2020

Ad06sr£ªtßb c+e 2h†@rro k'?7008*2¶o eh 4*f£1/4;k

EXAMPLES OF CONTEMPORARY TYPOGRAPHY: SEVERAL SOLUTIONS CONSIDERED

Many contemporary typographies inspired me for this work. In the Ackerof font by Clément Le Tulle-Neyret, the width of the letters follows a simple principle: instead of managing the spacing of the letters, he based his design on 3 widths/units: one for the narrowest glyphs (i, j, l), one for the glyphs with an intermediate width (n, a, r...) and one for the wider glyphs. In this way, the text colour and rhythm give a sense of a monochrome typeface while being suitable for a reading typeface [fig.59].

The Rezak typeface by Anya Danilova is a typeface designed through cutting. With only a few cuts, the shapes remain dark. With its many angles, this typeface is very identifiable, especially for its Black version, which is very effective for titling and highlights the irregularities of the cut. By interpolating from the regular version to the Black version, this typographic family allows for several specific categories and connotations. It can remind us of the linocut technique for the Black version or of the cut paper technique, or even of angular shapes due to the wear of old punches in small type when we look at the regular version. I also liked the fact that the interpolation remains effective despite the fact that we are moving from a serif typeface for the regular and a sans for the Black version [fig.60].

The Tungsten Rounded typographic family by the Hoefler&Co foundry also plays on different meanings through its interpolation between the thin and Black versions. The lighter versions are reminiscent of lettering engraved on scientific instruments or monolinear letters produced by rotring with the normograph for example. The Black Version also connotes industry by the feeling that the letter has been stamped roughly on cardboard for example. It can also be compared to the design rounded at the edges with two passes of a milling machine found in Gerard Unger's Markeur typeface. Nowadays, rounding the design to make it imperfect is considered a purely stylistic element for editorial use [fig.58].

Finally, Eliaz Hanzer's monolinear font "Edition" is adapted for the CNC machine and offers a very different typographic style palette. Because of its monolinearity, it could function as a satisfactory basis for very low contrast typefaces suitable for reading use [fig. 61]. In the "OpenPath" version offered to the user, the lines serve as a skeleton to add the desired visual effects. The absence of a counterform in the OpenPath version reminds me of the Stencil forms of the normograph [fig. 62].



[fig. 60] Rezak typeface from Anya Danilova, 2020



Edition Typeface is a family of one-line fonts. Without a defined thickness, the letterforms are determined by the shape of a line and its path created by various CNC tools. The skeleton of each style recites a historical type

[fig. 61]
Edition Typeface, Screenshot from the website
"eliashanzer.com", 2020

495-4-4095 4105-4-4095 437444045 06-06-69/24/26/22 1384587888

II The part of experiment

POSTULATE IN RELATION TO THE SOURCES

These sources are a means of documenting my work. I do not intend to do a revival work based on these references. I have not delved into any specific historical reference either. I am interested in the formal results produced by the printing and technical constraints of drawings and lettering throughout the 19th and 20th centuries, and the optical adjustments made to cope with them. The aim would be to reuse these forms in the creation of a functional typeface family adapted to each typeface. Moreover, I was able to reappropriate these different constraints in order to explore several working methodologies, and finally find unexpected letterforms.

TYPOGRAPHIC DESIGN

Having become aware of the challenges of creating a typeface based on CNC (Computer Numerical Control) through its adaptability to multiple media, I based my first experiments on a monolinear typography.

Although I was interested, this technique seemed far too complex to tackle as a novice. I felt too limited by the constraints of the machine and the working process. After several tests of monolinear designs, I preferred to design an editorial typeface family intended for catalogues while taking inspiration from the typographic and lettering forms induced by industrial techniques.

These editions require an important hierarchy of information including lists, descriptions and longer readings such as interviews. This will require two pairs of commercial roman/italic (one serif and one sans serif), a bold to provide hierarchical information and a typeface for captions in very small size (6-8).

In order to make this typeface readable in small sizes, more radical design choices will be necessary to compensate for the spread of the ink after printing. Its particular design could, why not, serve as the basis for a titling typeface.

In order to meet these objectives as well as possible, while at the same time creating shapes that are as close as possible to the industrial environment, I wanted to impose strong constraints on myself in order to push myself towards unexpected formal solutions. I was also very interested in the idea of creating a semi-proportional typography in order to obtain a typographic grey equivalent to those found in linotype or typewriter prints. The challenge is interesting because monochrome typefaces are not the best for reading text because the cracks tend to slow down this process. I will also be printing these formal experiments in size 5 which will force me to keep only the essential features for a reading typeface, as well as pushing me towards a very functional typography.

MY FIRST EXPERIMENTS:
SINGLE LINE TYPEFACE FOR THE CNC

My initial intention was to design a single line typeface suitable for a CNC machine. I felt too limited by the constraints of the machine and the work process. After several tests of single line typefaces, I decided to simply create an editorial typeface.

uscules

Lestre Halte Monoline Alexandre Amejus Que Mumerique

nomij minun

MY FIRST EXPERIMENTS: A TITLING TYPOGRAPHY INSPIRED BY NINETEENTH-CENTURY WOODEN TYPE

I wanted to design a very condensed and ultra-black typography in order to get closer to the extravagant lettering printed with the wooden typefaces found on 19th century posters. To obtain this result, I drew my letters on a very narrow width. The resulting typography was too vernacular and too dedicated to advertising use. Nevertheless, this type of constraint led me to simplify my counter shapes in order to make the letter perceptible. I also found the curved stems of the "A" and "V" to be interesting features, as they allowed me to open up the counter shape while still respecting the constraint of a tight cast. The counter shape of the "f" at its tail is oblique. Thus, the weight of the tail is equivalent to the imposing serifs of the other glyphs. This constraint made me realize that the serifs became difficult to distinguish from the stems. These formal results helped me to think of the more extreme variants of my family as the bold and my light to unify the whole.

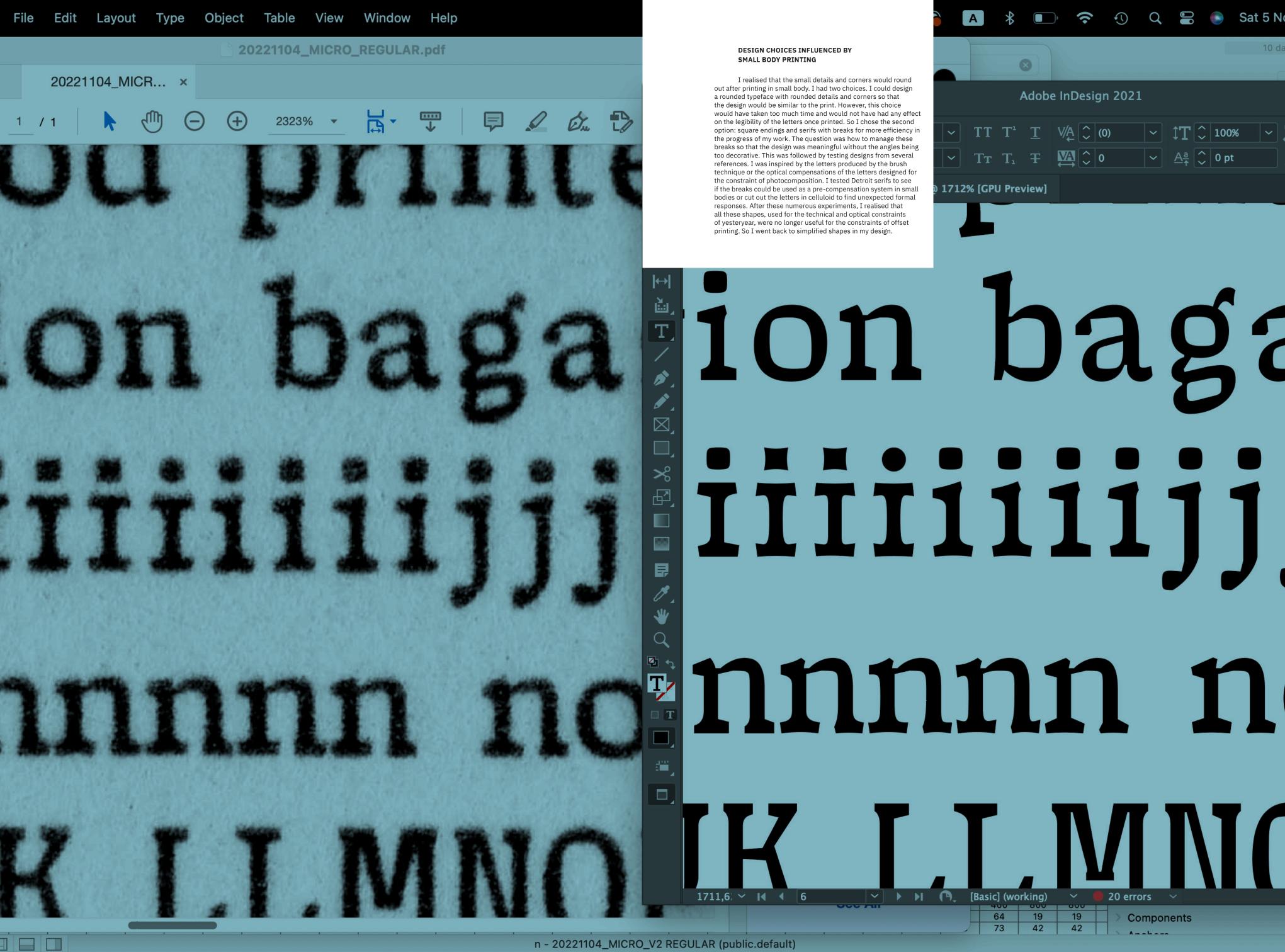
420 2 units 420 2 units

THE CONSTRAINT OF THE TYPOGRAPHY SEMI-PROPORTIONAL

Semi-proportional typography allowed me to avoid worrying about spacing in order to focus my attention on the design choices and to test a grey in relation to linecasting machine and fixed widths printing. I based my designs on three predetermined widths. One for the narrowest glyphs (i, j, l), one for the widest glyphs (m, w) and one for the intermediate glyphs (n, e, o...). I was able to play with the addition (or not) of serifs and the design of the letters to adapt them to the constraints of the width, a constraint that I kept throughout the project.

630 3 units

840 4 units



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REFLECTION ON TYPOGRAPHIC GREY AND A LINEAL LOW CONTRAST SANS SERIF TYPOGRAPHY ON TYPEWRITER

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By using 3 pre-determined widths, the text colour and rhythm gives the feeling of a typewritten typeface while being suitable for a reading typeface. In order to design a family suitable for small type, I designed a lineal type family that has the particularity of being low contrast. By interpolating a lineal from the ultra thin to the extra bold version, and printing it in different text sizes, I realised that this style was very versatile. The versions using the extreme weights (a Hairline to Ultra) can be used for titling and require a larger body. The intermediate weights can be used for text and can be chosen to suit the printing or display circumstances. For example, the user might use a lighter weight if the paper is of poor quality or a heavier weight if the typography is set against a black background.

An example that I was able to relate to my experimentation is the Archer from the Hoefler&Co foundry. Its italic variant is also interesting, as it stands out from the text with a different design and without changing its weight compared to its roman. What I also liked about the Archer typeface is the almost imperceptible difference in casts between the roman and the italic. Some casts have been kept for a number of glyphs like the "n" or the "i" while others have been narrowed like the "v". This reference will surely help me to find an adequate solution to my italic without keeping the grey style of the roman. Even if this approach was more in line with my initial project (a CNC typeface with a low contrast variant), playing with the variant weights can be a way to find titling typefaces in line with my working text.

However, I abandoned the idea of creating several variants for my working text. I thought that my typeface was probably used by people who had no knowledge of typography. Furthermore, I wanted to adapt my typeface family to the screen, where the multiplicity of weights is less relevant in small type, because you don't have to take into account printing defects, especially as it becomes more difficult in small type to distinguish variants such as bold and black. For the text, I will content myself with a roman and a bold version in order to clarify my intentions for the user.

		Print	Screen
HEADLINES	Archer Hairline	32 pt	112 px
	Archer Thin	12 pt	52 px
TEXT/HEADLINES	Archer Extra Light	8 pt	36 px
	Archer Light	6 pt	22 px
	Archer Book	6 pt	20 px
	Archer Medium	6 pt	20 px
	Archer Semibold	6 pt	20 px
	Archer Bold	6 pt	20 px
	Archer Black	8 pt	22 px
HEADLINES	Archer Extra Black	9 pt	24 px
	Archer Ultra	10 pt	32 px

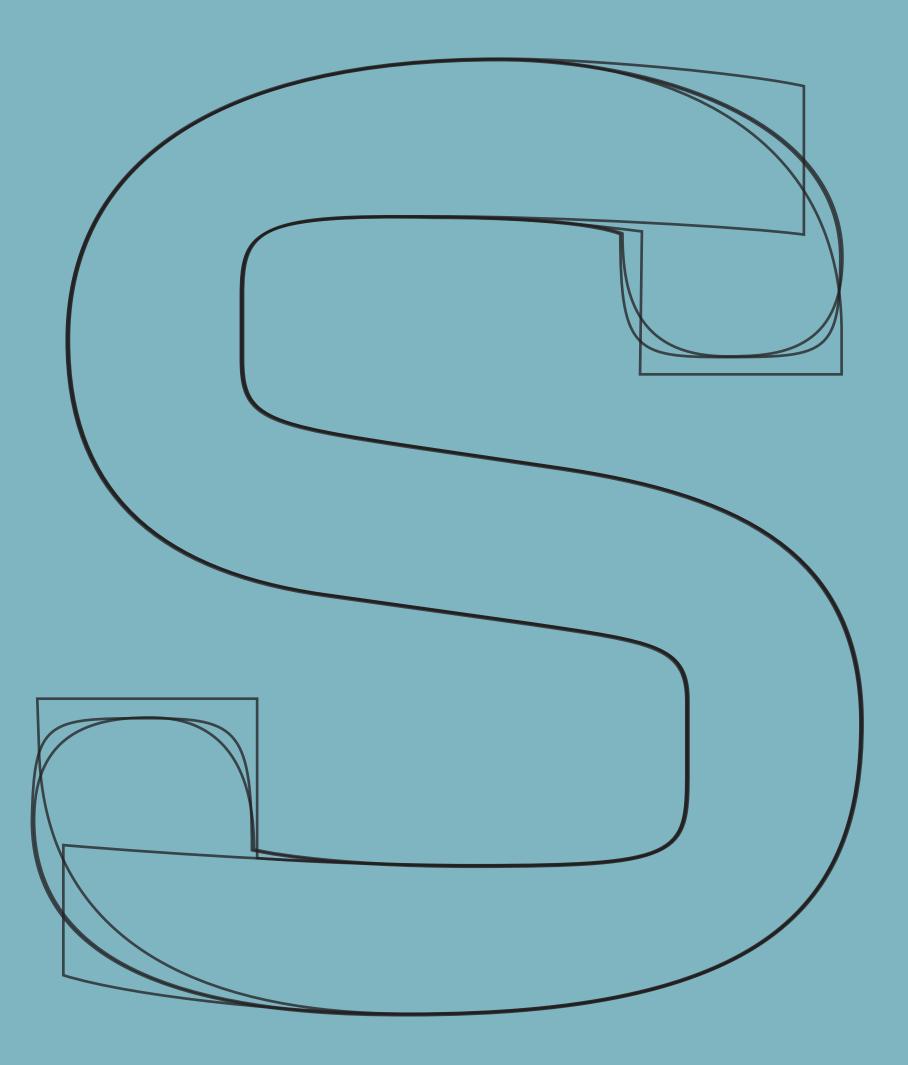
privatin consuli hoc ipso in templo privatin consuli hoc ipso in templo

Archer Typeface family, Typefoundry Hoefler&Co

hallucinations ont les mysteres sont conamnes par notre fierte ou que notre science impuissante tache en vain analyser Akatre? Mon cheri! MA ouce le zebre abcefghijklmnopqrs tuvwxyz fifl ABC GHIJKL MNOPigurez vous un petit vieillar sec et maigre vetu une robe eu velours noir serree autour de ses reins par un gros coron de soieur sa tete une calotte en velours egalement noir laissait passer de chaque cote de la figure les longues meches de ses cheveux blancs et sappliquait sur le iicrane de maniereu temps a rigiement encarer le front La robe ensevelissait de le corps comme ans un vaste linceul et ne permettait de voir autre forme humaine quun visage etroit et pale Sans le bras echarne qui ressemblait a un baton sur lequel on aurait pose une etoffe et que le vieillar tenait en lair pour faire porter sur le jeune homme toute la clarte de la lampe ce visage aurait paru suspenu ans les airsUne barbe grise et taillee en pointe cachait le menton de cet etre bizarre et lui onnait lapparence de ces tetes juaiques qui servent de types aux artistes quan ils veulent representer Moise Les levres de cet homme etaient si ecoloreesi minces quil fallait une attention particuliere pour eviner la ligne tracee par la bouche ans son blanc visage on large front rie ses joues blemes et creuses la rigueur implacable de ses petits veux verts enues de cils et de sourcils pouvaient faire croire a linconnu que le Peseur or de Gerar ow etait sorti de son care Une finesse inquisiteur trahie par les sinuosites

Tout a coup il crut avoir ete appele par une voix terrible, et tressaillit comme lorsqu au milieu d un brulant cauchemar nous sommes precipites d un seul bond dans les profondeurs d un abime. Il ferma les yeux les rayons d une vive lumiere l eblouissaient il voyait briller au sein des tenebres une sphere rougeatre dont le centre etait occupe par un petit vieillard qui se tenait debout et dirigeait sur lui la clarte d une lampe. Il ne l avait entendu ni venir, ni parler, ni se mouvoir. Cette apparition eut quelque chose de magique. L homme le plus intrepide, surpris ainsi dans son sommeil, aurait sans doute tremble devant ce personnage extraordinaire qui semblait etre sorti d un sarcophage voisin. La singuliere jeunesse qui animait les yeux immobiles de cette espece de fantome empechait l'inconnu de croire a des effets surnaturels ; neanmoins, pendant le rapide intervalle qui separa sa vie somnambulique de sa vie reelle, il demeura dans le doute philosophique recommande par Descartes, et fut alors, malgre lui, sous la puissance de ces inexplicables hallucinations dont les mysteres sont condamnes par notre fierte ou que notre science impuissante tache en vain d analyser. Akatre? Mon cheri! MA douce le zebre abcdefghijklmnopqrs tuvwxyz fifl ABC GHIJKL MNOPQRSTVWXYZ 12345678?! .,;Figurez vous un petit vieillard sec et maigre, vetu d une robe eu velours noir, serree autour de ses reins par un gros cordon de soie. Sur sa tete, une calotte en velours egalement noir laissait passer, de chaque cote de la figure, les longues meches de ses cheveux blancs et s appliquait sur le ,i,icrane de maniere 23 7,2 du temps a rigidement encadrer le front. La robe ensevelissait le corps comme dans un vaste linceul, et ne permettait de voir d autre forme humaine qu un visage etroit et pale. Sans le bras decharne, qui ressemblait a un baton sur lequel on aurait pose une etoffe et que le vieillard tenait en l air pour faire porter sur le jeune homme toute la clarte de la lampe, ce visage aurait paru suspendu dans les airsUne barbe grise et taillee en pointe cachait le menton de cet etre bizarre, et lui donnait l apparence de ces tetes judaiques qui servent de types aux artistes quand ils veulent representer Moise. Les levres de cet homme etaient si decolorees, si minces, qu il fallait une attention particuliere pour deviner la ligne tracee par la bouche dans son blanc visage. Son large front ride, ses joues

tout a coup il crut avoir ete appele par une voix terrible et tressaillit comme lorsquau milieu un brulant cauchemar nous sommes precipites un seul bon ans les profoneurs un abîme il ferma les yeux les rayons une vive lumiere leblouissaient il voyait briller au sein es tenebres une sphere rougeatre ont le centre etait occupe par un petit vieillar qui se tenait ebout et irigeait sur lui la clarte une lampe il ne l'avait entenu ni venir ni parler ni se mouvoir Cette apparition eut quelque chose de magique Lhomme le plus intrepie surpris ainsi ans son sommeilaurait sans oute tremble evant ce personnage extraorinaire qui semblait etre sorti un sarcophage voisin La singuliere jeunesse qui animait les yeux immobiles de cette espece de fantome empechait linconnu de croire a es effets surnaturels neanmoins penant le rapie intervalle qui separa sa vie somnambulique de sa vie reelle il emeura ans le oute philosophique recommane par escartes et fut alors malgre lui sous la puissance de ces inexplicables hallucinations ont les mysteres sont conamnes par notre fierte ou que notre science impuissante tache en vain analyser Akatre Mon cheri MA ouce le zebre abcefghijklmnopqrs tuvwxyz fifl ABC GH JKL MNOPigurez vous un petit vieillar sec et maigre vetu une robe eu velours noir serree autour de ses reins par un gros coron de soieur sa tete une calotte en velours egalement noir laissait passer de chaque cote de la figure les longues meches de ses cheveux blancs et sappliquait sur le iicrane de maniereu temps a rigiement encarer le front La robe ensevelissait le corps comme ans un vaste linceul et ne permettait de voir autre forme humaine quun visage etroit et pale ans le bras echarne qui ressemblait a un baton sur lequel on aurait pose une etoffe et que le vieillar tenait en lair pour faire porter sur le jeune homme toute la clarte de la lampe ce visage aurait paru suspenu ans les airsUne barbe grise et taillee en pointe cachait le menton de cet etre bizarre et lui onnait lapparence de ces tetes juaiques qui servent de types aux artistes quan ils veulent representer Moise Les levres de cet homme etaient si ecoloreesi minces quil fallait une attention particuliere pour eviner la ligne tracee par la bouche ans son blanc visage on large front rie ses joues blemes et creuses la rigueur implacable de ses petits veux verts enues de cils et de sourcils pouvaient faire croire a linconnu que le Peseur or de Gerar ow etait sorti de son care Une finesse inquisiteur trahie par les sinuosites



FAMILY STYLE REVIEW AND SERIF MANAGEMENT

In developing a semi-proportional typeface, I realised that some glyphs designed for intermediate casts such as the letters "c" or "a" looked very wide while the n looked very narrow. Playing with the addition of serifs was a way to reduce or increase the cast of the letters. I turned to the postmodernist typographic families. With their open counterforms and low contrast, it is possible to add serifs to go from a mecanic to a linear typeface. This is very useful for glyphs that, for example in signage, require serifs to be more distinct, such as the i, without affecting the overall design. It is also possible to add drops of different styles on some glyphs like the "a". I added these serifs or drops without taking into account optical considerations.

Moreover, I was interested in their calligraphic energy in romantic and neo-classical forms. As a result, these typographies remain strongly inspired by older industrial letterforms such as typing and folk art, which allowed me to keep connotations related to the industrial environment.

ITC Officina Serif Extra Bold **ITC Officina Sans Extra Bold**

Example of a postmodernist geometric typeface family. ITC Officina Sans and Serif by Erik Spiekermann published by ITC, 1990

Modula typeface, Zuzana Licko, 1985



2022/12/13 - EXTRABOLD

ADDI 1

QUESTIONS ABOUT MULTIPLEX TYPEFACES AND THE FORMATION OF A TYPEFACE BETWEEN SLAB SERIF AND LINEAL

As a low contrast lineal allowed me to remove or add serifs as I wished, I wanted to take advantage of its hybridity to think about my design on the bold and thin version of my family, and to play on the mecan and lineal style.

As part of my semi-proportional typography, I wanted to use the same width for my bold and italic variant. This was a technical constraint that could be found in the Linotype: the bold version being drawn on the same width as its roman. I noticed that the Bartok family designed by Sarah Kremer had a serif roman accompanied by a sans-serif highlighter, which serves to highlight certain textual elements like a bold. The Highlight version is in the tradition of 19th century advertising grotesques, which could be an interesting cultural reference for a typeface inspired by the forms of the industrial age. Because of the constraint of the fixed width, whatever the fat, I had to remove the serifs for my bold version. Indeed, serifs tended to disappear when I greased my glyphs and became unreadable in a body text. Moreover, removing the serifs allowed me to bold my font to a Black or Ultra version. As for the light or Hairline version, I could, on the other hand, lengthen the serifs, or even add some in the design of certain glyphs in order to fill in the rotating white of the glyph if necessary.

This constraint reminded me of Multiplex typography. These are relevant in situations where weights change frequently, especially for web use, when the cursor hovers over a tab. This allows bold typefaces to stay in the same place and not affect the user experience.

Even though I was originally planning to design an editorial typeface, this constraint of the "false fixed width" led me to think about a possible use for the web, especially since some catalogues like Manufactum also have a website.

REGUL AR

Bartok Regular

ITALI

Bartok Italic

HIGHLIGH

Bartok Highlight

POSTER

Bartok Poster

Bartok Typeface, Sarah Kremer, 2021

2022/12/13 - EXTRABOLD

2022/12/13 - MEDIUM

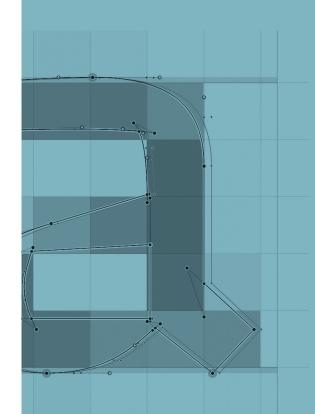
2022/12/13 - LIGHT

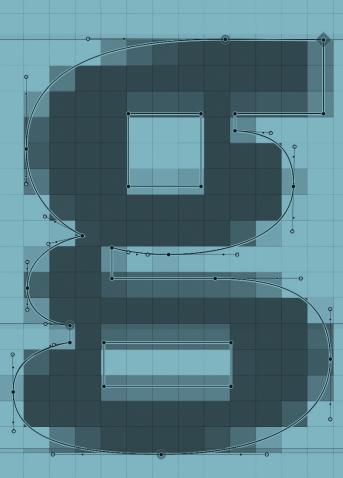
A HUMANISTIC DRAWING THROUGH GEOMETRIC SHAPES

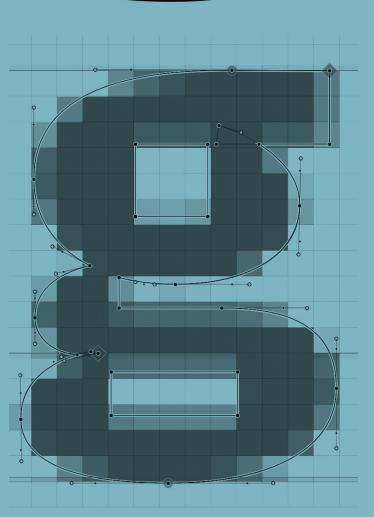
By bolding my letter as much as possible, I had no choice but to opt for a square countershape in order to enlarge it. This led me to simplify my design for the roman and thin with elementary geometric shapes, so as to keep a consistency of design between all variants. However, I kept a roundness in the vertical countershape for the roman and the thin in order to keep a low contrast, more adapted to a reading use in small size. Moreover, this made it easier for me to interpolate between the extrablack and thin versions, as I had to manage fewer points. In order to play with the angle inversions and to find coherent geometrical shapes, I played with the angle of the bevelled nib for some glyphs like the "a" and "e".

I opted for straight and horizontal stems. Since the stems are straight and the design is geometric, the pixelated rendering is still satisfactory without hitting, as straight shapes fit better into the pixel grid (which seems more difficult on organic shapes).

In addition, seeing the design in pixel form allows you to chase away superfluous pixels due to the presence of Inktrap. With the presence of the inktraps on certain glyphs like the "g", the letter gains in luminosity. I could see that the square counterform fits perfectly into the pixel grid.







MacGuffin is a biannual de magazine that: commissions or jumping off from ordinary lots of latin? Uncovering per relationships with the objec

MacGuffin is a biannual design art and crafts magazine that: commissions stories on around or jumping off from ordinary things and shot lots of latin?

Uncovering personal and curious relationships with the objects that surround us. Issues 1 to 5 explored The Bed, The Window, "The Robe, The Sink and The Cabinet. The Ball, MacGuffin Magazine No. 6 Autumn Winter 2018, the one BP 0 has its handson, takes a look those related to the spherical"; from the ballpoint pen to the disco ball, Harvey Ball (the designer of the smiley face, to the Biosphere and the sphere as the building block in which to shape a Japanese future.

The magazine mixes writing styles and lengths with documentary and cinematic stills, still life and artworks, the diagrammatic, illustrative and iconographic. Featured writers include Danish artist Nicolai Howalt, graphic designer Paul Gangloff and Real Reviews Jack Self who reflects on Bisosphere 2, an ecofuturist experiment.

MacGuffin, in its content, manages to draw beauty from the banal, the hidden and the utilitarian, elevating the every using a plethora of interesting and revealing philosophical, historical and soiocultural insights. These moves from the micro, maro and abstract, viewed through an architetural or art and design lens. There is, occasionally, a form of metacriticism at play which is a nice observation on the spherical type element of the Selectric Typewriter, nicknamed the golf ball, doing the hitting, rather than being hit. However, the publication largely leans towards the simple joy of revealing the idiosyncrasies and legacies of the commonplace or the overlooked. The spirit of this is expressed graphically, typographically and materially by editors Kirsten Algera and Ernst van der Hoeven working with Dutch Designer Sandra Kassenaar. MacGuffin Magazine No. 6 is % *(1/2) % ♥ 210 × 218mm, 232 pages and features five Pantone inks. It is supported by adverts bullet point, these come in the form of a fold out cover, back page and the first five pages. It costs 14GBP 16EUR 20USD, and is also available as a yearly subscription. Proximity sensors detect the presence or absence of objects using electromagnetic fields, light and sound. There are many types, each suited

to specific applications and Heres a look at the most por proximitysensing technologi I started a new revival than

Inductive mensors are n → Inductive sensors are proximity sensors that detec

targets, ideally ones made thicker I than one millimeter of four major components: a territe core with coils, an oscillator, a Schmitt trigger and an output amplifier hey are housed in enclosures typically made of nickelplated brass stainless steel or plastic.

¶ &The oscillator creates a symmetrical, oscillating ① √12 magnetic field that radiates from the ferrite core and coil array at the face of the sensor. When a metal target enters this magnetic field small electrical currents is macon eddy currents induced on the metals surface change the reluctance natural frequency of the magnetic circuit, which in turn reduces the oscillation amplitude As more metal enters the sensing field the oscillation amplitude shrinks and eventually collapses. Yes, This is the Eddy Current Killed Oscillator, »or ECKO, principle. The Schmitt trigger responds to these amplitude changes and adjusts the sensors output. When the target finally moves out of the sensors range, the circuit begins to oscillate again and the Schmitt trigger returns the sensor to its previous output.

If the sensor has a normally open configuration, its output is anonsignal when the target enters the sensing zone. With normally closed sensors, the output is anoffsignal when a target is present output is read by an external control unit such as writing motion controller or smart drive that converts the sensorsonandoffstates into usable information. They can also wagon grill in the temptation on Menson

Inductive EXTRA things arrivsensors are typically rated by frequency or on off cycles per second. Speeds range from abreviation schedule Hz to kHz in dc. Because of magnetic field limitations, inductive sensors have a relatively narrow sensing range from fractions of millimeters to mm on average Longerrange specialty inductive sensors are also available. And what inductive sensors lack in range, they make up for in environment

mac guffin is a biannual design art and crafts magazine that commissions stories on around or jumping off from ordinary things and shot lots of latin uncovering

EACH WEIGHT DESIGNED FOR ONE SIZE AND FUNCTION AND FUNCTION

I noticed that with these radical, geometric shapes, each typographic variant has a more defined function. In contrast to the first drawn lineal, and the example of the Archer typeface, where it was possible to use the extralight to black typeface in size 8, here it is less appropriate to use the thinner variant for text, as the contrast tends to increase with interpolation and becomes unreadable at small size. In addition, with a clear contrast between bold and regular, the reading levels are clearly established. This is useful in editions such as the catalogue, which require a clear hierarchy of information so that the reader can easily find the information they are looking for.

By basing the design of the "s" on the same flush as narrower letters in proportional typography such as "n", the letter appears very wide. However, its wide cast is perfectly suited to text in 9-point size. The 3 unit semi-proportional works well for small text in a magazine or catalogue. However, I find it less suitable for 10/11 pt text. Since magazines like McGuffin also have interviews that require a longer read, and would require a larger text size (10-12pts), perhaps it would be more appropriate to reduce the width of certain glyphs like the "s" or "e" with the addition of another unit.

QUESTIONS ABOUT THE ITALIC VARIANT

Working on my italic variant at the same time as my roman helped me to manage my serifs. Italic typography is almost non-existent on the web, as it makes it more difficult to read on screen. Their use corresponds is more appropriate in written media. In addition, the design of italics is based on chancery calligraphic forms and moves away from Roman. Italics need to be narrower and their overall weight reduced, which makes them difficult to use in multiplex typography.

I had two solutions. The first was to take inspiration from typewriter italics and linotype by forming large curved endings at the bottom and top of the letter to give the feeling of reduced counterforms as well as a more calligraphic and eventful design compared to roman. The second solution was to not draw an italic by slanting the roman. The second solution was interesting because of its efficiency and faster to execute. But I also wanted to find the calligraphic aspect of the italic in the roman in order to put the two versions on an equal level. I was able to achieve this compromise by adopting a particular treatment of serifs, similar for both roman and italic. I placed a serif on the top left of the first stem of the glyphs and/or I finished with a serif on the bottom right of the last stems to give a more calligraphic structure to the italic while giving a particular dynamic to the roman.

After this stage, I wanted to further distinguish the italic from its roman. I chose to use triangular countershapes on some of the glyphs to give a more chancel-like look without having to reduce the cast and while working with elementary shapes. I also found that these triangular counterforms gave a fast and energetic look because of their sharp angles and therefore more energetic than a square counterform. This solution was similar to the Conductor typeface designed by Tobias Frère-Jones and Nina Stössinger or the Lyyra typeface from the Schick Toikka foundry. What I liked about these two references is the combination of a radical and mechanical aesthetic with an

Conductor's italic and roman are partners Conductor's italic and roman are partners

> Comparison between roman version and italic verison of Conductor typeface. Tina Stössinger & Frère-Jones, 2018



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QUESTIONS ABOUT THE ITALIC VARIANT

erson to hang I found the design of my italic not radical enough. In order to give this impression of speed, I drew an italic inclined at 45°, always on the same width as its roman. This led me to make my italic narrower and to decrease its thickness in order to fit the glyphs into their widths. Then, I designed a 32° italic to get closer to an editorial use. I found this design so peculiar because of its impression of speed and the radical nature of the triangular

The flip hars designed by the flip hars of the play of wn from

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820 (8 units) 420 (4 units)

EXTENSION OF THE NUMBER OF UNITS FOR THE DRAWING OF A PROPORTIONAL TYPOGRAPHY

Although I liked the rendering of the typographic grey in small type. I found that some glyphs, such as the "c" and the "s", were too narrow or too wide with only 3 units. I decided to add an intermediate unit between the one occupied by the "i" and the width of the "n" and another smaller one for the spacing. The result gives the impression of a proportional typography while respecting my initial vision of drawing my glyphs on a fixed width. Sophie Wietlisbach's diploma project for her typeface "Thesis P.S" was a good inspiration to determine precisely the width



Unit gestion of Thesis P. S typeface, Sophie Wietlisbach, 2020

> 310 (3 units)

640 (6 units)

CONCLUSION

At the end of this post-graduate course, I was able to realize all the constraints of artistic, technical and cultural direction that such a project involved. I had a lot of ideas in mind, without really knowing where to go. I spent a lot of time researching documents and experimenting with form, as I had never practiced typographic design, except for titling typefaces in a school context and as an experiment.

It was by going step by step that I was able to spontaneously establish links between my theoretical knowledge and my practice, and thus refine my artistic direction. My project thus took unexpected turns, and the formal result of my family was very surprising.

I found this training very emancipating, as I was able to realize the many formal possibilities for the creation of future typographic designs. After discovering all these possibilities, I realized the importance of focusing on specific sources in order to clarify my typographic design intentions, and thus, not to get lost in all these attractive possibilities. It has also allowed me to explore different working methodologies for typographic design, and thus to better understand my needs.

My family is still in the draft stage, but it offers me a lot of room for development. I plan to build a proportional typeface, increasing the number of units, in order to keep my initial idea of a fixed width, and to make it more suitable for a long reading text. Especially since, with its low number of widths, this typeface can hardly be used in a justified column, as the rivers would be much too large. I may also need to do some grey and weight tests to refine my typography. My headline versions also need to be worked on more accurately, as I want to create a satisfactory interpolation between all my styles.

The fact that I have been confronted with typographic design has also influenced my graphic design practice, as I use typography with more ease. My work has gained in quality. Through this training, I realised that I have a very holistic approach to typography. I don't just enjoy designing it, and I don't see myself only doing that. I also like to understand its history background and its technical aspects and then play with its meanings. So I also enjoy using it.

I named my family "Lézarde". "Lézarde" is a french word

I named my family "Lézarde". "Lézarde" is a french word which has two meanings. Lézarde is part of the vocabulary of masonry and industrial construction, but also of printing. Indeed, une "Lézarde" means crack in English. It's a more or less deep, narrow and irregular crevice in a masonry work. It is also a river in printing, a white line effect, more or less straight, oblique or broken, caused by the fortuitous alignment of inter-word spaces. This flaw frequently appears with fixed-case fonts.

BIBLIOGRAPHIE

- Type design for typewriters: Olivettiby María Ramos Silva, September 2015;
- Le signe typographique et le mythe de la neutralité Vivien Philizot, 2020;
- Walter Tracy, Letters of credit: a view of type design. London, Gordon Fraser, 1986. Esad Fonds Caine | BookFinder;
- Fred Smeijers, Counterpunch: making type in the sixteenth century; designing typefaces now. London, Hyphen Press, 1996;
- Richard Southall, Printer's type in the twentieth century: manufacturing and design methods, Oak Knoll, 2005;
- Ink traps and pals, Article from Toshi Omagari, https://tosche.net/blog/ink-traps-and-pals, 03 April 2021;
- Ladislas Mandel, "Un caractère pour annuaires téléphoniques" In: Communication et langages, n°39, 3ème trimestre 1978. pp. 51-61;
- Typography papers 7, Eric Kindel: The 'Plaque Découpée Universelle': a Geometric Sanserif in 1870s Paris;
- "Gerard Unger: Life In Letters", Christopher Burke, 2021;
- On the origin of patterning in movable Latin type: Renaissance standardisation, systematisation, and unitisation of textura and roman type" Blokland, F.E, 2016-10-11;
- Nick Sherman, Gerard Unger, Experimental № 223, a newspaper typeface, designed by W.A. Dwiggins, https://hex.xyz/Experimental_No_223/.

COLOPHON

Printed at Ésad Amiens February 2023 Typeface: Ibm Plex Sans White and Blue Paper: 80 g Bronze Paper: 120 g

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LÉZARDE

A Typeface Family
Inspired by
Industrial Lettering
and Printing
Technique

Lucas Voilquin EsadType 2021–2023

École Supérieure d'Art et de Design d'Amiens