

~aa~

**MelloSans™**

~a

# MelloSans™

~black~	~ <i>black italic</i> ~
~bold~	~ <i>bold italic</i> ~
~medium~	~ <i>medium italic</i> ~
~book~	~ <i>book italic</i> ~
~light~	~ <i>light italic</i> ~

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AUP 610 Monograph Presented as a Requirement for the Obtainment of  
a Bachelor's of Art Degree in Architecture, Urbanism and Graphic Design

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São Paulo, February 2005

**#2908812**

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*qßbü£*

## Introduction

Typefaces are key elements in the modern world. Especially in the big cities, we are more and more surrounded by types that are present in divers communicative situations such as advertising, newspapers, magazines, packaging, blank forms, receipts, bills, coins, pamphlets, tickets, products, traffic signs, etc. Phil Baines and Andrew Haslam say that:

*From the moment we wake up, the first thing we see when we open our eyes is already invaded by type: the alarm clock, the radio dial, shampoo brand-names, toothpaste, coffee or breakfast cereals; we are being bombarded by typographic messages that require our attention.<sup>1</sup>*

Typography is not only the activity of creating types but also the activity of combining these types to transmit a message. It is fundamental to anyone involved with visual communication to acknowledge typography as typedesign. Type is a key element in visual communication. In fact, it is its motive power, one of the most important elements in communicating an idea. It is the language's visual representation.

Typeface design, or simply typedesign, the main objective of this TCC (monograph presented as a requirement for the obtainment of a B.A in Architecture, Urbanism and Graphic Design), is an activity that demands constant up dating. Its practice is always involved with re-definitions and adaptations, related to either technologic progress or to new intentions of those who practice it.

As far as text typefaces are concerned, typedesign may be a complex activity that requires specific technical knowledge, intensive study of modulation, proportion, contrast, legibility, among other aspects.

The final result of this work is the elaboration of the **MelloSans™\*** family, a sans-serif typeface with five weight variations (light, book, medium, bold and black\*\*), and their respective italic versions, totaling 10 different fonts. Two versions were elaborated: **MelloSans OSF™** that corresponds to “Oldstyle Figures”, and **MelloSans LF™** that corresponds to “Linning Figures”. In typography, oldstyle figures and lining figures are two numerical systems; the former corresponds to the “lowercase numbers” or “non-linning numbers” that balance themselves with the lowercase letters and, therefore, are indicated for run on texts; the latter, corresponds to the “linning figures”, “uppercase numbers” or “tabular figures” and are indicated for compound texts and titles in uppercase or for use in blank forms and tables.

The use of a font family in the printing of a text or in a visual communication work confers versatility to the text and to the graphic design as a whole. Font weight variation may serve many purposes such as text, words, citations or paragraph highlighting. The use of italics with varied weights also contributes to this versatility.

**0123456789**

**0123456789**

**MelloSansBlack OSF™ and MelloSansBlack LF™, 38 pt**

*\* The word Sans refers to sans-serif from the French. It became frequent in typeface names (Scala Sans, Gill Sans, etc).*

*\*\* The major part of the terms for weights and font styles are in English because they are firmly established in this language, even in Brazil.*

The **MelloSans™** family, like any other text font family, may expand itself in many ways. Besides those versions already designed, others may be created, including new weights (such as ultralight, ultrablack, extra-bold, among others), small cap versions, ligatures, extra symbols, greek characters, cyrillic characters, condensed versions and extended versions, among many other variations.

The present work focuses on the basic latin characters used in portuguese language. It is concentrated on the 5 weights already mentioned in the previous page and in its italic versions, because drawing the other variations would take more time and research; however, it could be considered as the subject of a future work.

The study presented in this TCC proved a valuable experience that I intend to use, as a graphic designer, in the elaboration of other typefaces (for text or non-text). Technology is ever changing and everything may be easier in technical terms, but it is necessary to emphasize that the essence of design activity in typeface design, especially for text typefaces, will always depend on intense studies, besides technical talent. It is also important to remark that FAU (Faculty of Architecture and Urbanism) offered me the necessary basis for this work, through historical notions related to art and architecture, through space discussions in many scales and approaches, through disciplines more specifically related to graphic design or through the access to specialized bibliography.

This apostil is divided in four parts: the first one that includes this introduction, focus on the history of typography and typedesign and presents the many types of fonts; the second one shows the principal characteristics of the design of a text typeface; the third one describes the process of the elaboration of the **MelloSans™** family and the fourth one is the presentation of the many weights and variations of this family.

Typography, as we know it today, came to Europe in the XV century with Gutenberg's metal mobile type that marked the beginning of the process of composing and printing using standardized units. Many printing and composition methods have appeared since then, each one influencing the way types should have been designed. Among them are:

- **the manual composition system**, based on re-utilizable types, used by Gutenberg in the 15th century and in subsequent centuries (with some improvement and adaptations), based on the utilization of mobile types, most of the times cast in metal with inverted relief characters that are organized and re-ordained in a component bar. This system is still in use in small printing shops for handicraft publications and printed matters;

- **printing of copper engraving**, used mainly in the XVII and the XVIII centuries, it consisted in manually engraving the characters in a copper plate (or of any other metal) with a steel needle;

- **lithography**, used from the 17th century on, consisting of the drawing of types with a special ink in a polished porous stone plate that, afterwards, was bathed in acid that preserved only the painted areas;

- **hot metal composition**, that appeared during the Industrial Revolution and is represented by mechanic composition equipments such as the Linotype, based on the casting of lining characters through a complicated mechanism of matrix liberation, controlled by a keyboard;

- **offset printing**, used from the middle of the 60's on and still in use. Its principle is similar to the one used in lithography, but instead of a stone plate, a metal plate is used and the engraving process is made with the use of a negative film.

The photocomposition systems used in the 60's and 70's brought some new possibilities to typography, such as the facility of amplification and reduction of the characters and more flexibility in spacing adjustments that used to be a complicated task because previous technologies were based on pre-established size and spacing. At that time, dry methods such as the Letraset were also used. When the desktop publishing and the postscript digital system were established in the late 80's, graphic softwares in personal computers became the main way of composition, offering direct manipulation of the graphics and types, granting the graphic designer more freedom and control of his created pieces.



80's Letraset Sheet, Helvetica Medium 24pt

The arrival of the digital system and the consequent consolidation of computer softwares at the beginning of the 90's, were landmarks in typography and graphic design because, besides making typeface design accessible to anyone who had a personal computer, they also made the task easier because everything was controlled digitally and many aspects of typeface design that required great manual skill or complex and expensive technology were suppressed. Until the middle of the 80's, typeface design was a specific activity, practiced mainly by important type foundries or companies and by manufactures of composition equipments such as Linotype and Letraset. The major part of graphic designers was only customers and not creators of new types. Today things have changed and hundreds of type distributors (the digital type foundries) are spread around the world, digitally creating and distributing and selling through the Internet.

On the other hand, the digital system made the creation of types a democratic activity, in the sense that new experiments in the area were possible. Today, we see many new graphic creations that give up traditional typographic standards and many times challenge overvalued concepts such as legibility and proportion.

In a parallel manner to the progress in computer technology, the worldwide consolidation of the Internet also contributed to the activity of typeface design. Besides being the main commercial and divulgation vehicle of the type foundries, the Net has many sites with valuable information such as **typophile (www.typophile.com)** that has an open forum for the public to discuss any questions and answer any doubts, with the participation of great names of the international typographic jet set. Without the Internet and its technical support, this work would have been much more difficult to be elaborated. At the end of this presentation, there is a list of links related to typography that was collected in the course of this work.

Although desktop publishing offered typography many facilities, text typeface design is still, in a certain way, a very specific activity and demands form, proportion, and legibility studies. There are some visual standards related to character form that must be considered in the elaboration of a new text typeface; however, it is also important for them to have self identity and self expressivity. The study of existing fonts is fundamental because we come into contact with different form studies and different attempts and solutions.

## Display fonts / Text fonts

Typefaces are nowadays classified in many possible ways. A font may be classified: in relation to its weight (light, book, regular, bold, ultrabold, black, etc); in relation to its width (condensed, normal, extended, compressed, etc); as a serif font or a sanserif font; or according to its style (geometric, grotesque, decorative, script, humanist, etc). There are also some specific cases, such as the pixel fonts (or bitmap fonts) that are elaborated in pixel units, aiming to achieve optimized aspect in the computer monitor, and the dingbat fonts that are sequences of drawings, figures or pictograms in font format that date from, in its essence, the illustrated clichés and ornaments that has existed since the appearance of the metal cast types.

Putting aside the dingbats and the pixel fonts, there is a more general classification that divides typefaces in two branches: *display fonts* and *text fonts*:

- **display fonts** are those used in titles, advertising, headlines and logos – its design usually departs from classical legibility standards, with the purpose of calling the reader's attention. They are commonly used in sizes larger than 14 points, although sometimes they may be used in smaller sizes. The consolidation of desktop publishing brought new possibilities to the creation of display typefaces such as the application of filters and ready made effects in graphic softwares.

- **text fonts**, on the other hand, are created to be used on the composition of texts and usually follow the classical visual standards, as far as character form is concerned, because their aim is to offer great readability. They are used in sizes that vary from 6 to 14 points, although text fonts may sometimes be used in situations that require larger characters, such as titles, logos, signalization, etc. The digital system and computer graphics also brought new facilities and possibilities for this kind of font. The families **Meta** (1991), created by Erik Spierkemann, **TheSis** (1994), created by Luc(as) de Groot and **Fedra** (2001 – 2003), created by Peter Bilak, are good examples of modern text fonts that are based on classical standards but that suggest innovation. The **MelloSans™** family here presented is a text font family.

## La era de la máquina 0123456789

MelloSansMedium™ 20pt (text font)

## Computerwelt 0123456789

Gordurama™ 22pt (display font created by the author in 2003)

## We are the robots, 0123456789

Yanez™ 20pt (pixel or bitmap font created by the author in 2004)



Chimps™ 36pt (dingbat font created by the author in 2002)

## Sanserif fonts

Serif is the name given to the existing trace in the extremities of the forms of some letters. We usually attribute to serifs the role of improving the continuity of the reading of a text line, in such a way that serif terminations approximate the characters of a word. Studies prove that, when we read a text, our brain does not register each letter of a word, but it recognizes the word by its set of letters, by its “blot” and the serifs supposedly make this operation easier. To illustrate this idea, it is enough to observe media that present long run on texts, such as books or newspapers, and we will see that the major part of them use serif fonts in their composition.

LF Antiqua

Openings for executives increase 15% in January.

**TheAntiqua** 40pt and 12pt, an example of serif font and its characteristics

Until the end of the 18th century, occidental writing was based on serif typefaces. Although sanserif letters originated in the Greek and Roman periods, a new interest in the use of these types occurred in the beginning of the 19th century, at first, in the form of advertising and publicity, when the lithographic impression system had just been improved. Adrian Frutiger says that:

*(...) lithography set the professional designer free of the intrinsic characteristic of mobile types and copper engraving. All its creativity was manifested on a stone surface skillfully prepared. One of the first lithographic writings was created with sanserif letters by the Englishman William Caslon III (1754-1883).<sup>2</sup>*

At the beginning, sanserif fonts were termed *grotesque* or *lineales*. Advertisements were composed with thick sanserif types, in order to increase message impact. At the end of the 19th century and beginning of the 20th century, sanserif fonts were known as a new style. The **Akzidenz Grotesk** typeface, of the German foundry Berthold, dates from 1898, and the Morris Fuller Benton's **Franklin Gothic** dates from 1903. They are, respectively, the European and American branches of what was consolidated as the grotesque model (or gothic, in the USA) that later on originated a new Swiss type, the **Neue Haas Grotesk** (1957) based on Akzidenz. It was afterwards renamed **Helvetica** (1960) and classified as neo-grotesque and is largely used from then on. The **Univers** typeface dates from 1959 and was designed by Adrian Frutiger, comprising 21 variations and introducing, in a significant way, the concept of font family that would be consolidated years later.

The beginning of the 20th century was characterized by new experiments in the arts and in industrial design, such as the Russian Constructivism and Bauhaus, in the 20's. At this time, new typeface studies directed by these movements appeared, such as Paul Renner's **Futura** font (1927) constituted of a geometric, economic and new design, which proves its relationship with Bauhaus' artistic and architectonic ideology. At this time, England also produced its experiments with sanserif types, being its most representative examples Edward Johnston's **Underground** typeface (1916), created for the London Underground, and **Gill Sans** (1927-1930), created by Eric Gill who had already worked with Johnston in the Underground typeface. Both fonts present a fusion of sanserif typeface with forms that recall roman inscriptions and the manual writing of the Renaissance, and are considered first examples in Europe of what is called humanist model for sanserif fonts.

The humanist model for sanserif typefaces, when compared to the grotesque and geometric models, presents a more visible variation in stem thickness and more open forms. It was developed along the 20th century, in fonts such as Hermann Zapf's **Optima** (1958) and Hans Eduard Meier's **Syntax** (1967). Later, from the 70's on, it was a reference for typefaces such as Adrian Frutiger's **Frutiger** (1973-1976), Carol Twombly and Robert Slimbach's **Myriad** (1992) and Luc(as) de Groot's **TheSans** (1994), each one of them, introducing modern forms that aimed at providing more legibility to the humanist model. The **MelloSans™** typeface presented here had as its reference and inspiration fonts like the three last mentioned above and for this reason, we can classify it as a humanist sanserif typeface or as a sanserif typeface based on the humanist model.

Nowadays, common sense attaches to sanserif typefaces the idea of modernity and dynamism, whereas the serif typeface is characterized by traditionalism, sophistication and refinement, besides its association with more fluency to long readings. It is worth mentioning that serif typefaces are still largely used, especially in the majority of books and newspapers. They are also studied and produced as revivals of classic fonts or as new designs that also adopt innovations, contemporary forms and weight variation, such as Luc(as) de Groot's **TheAntiqua** (1999–2001), used on the example shown on page 16. Today it is also a common practice to design a serif typeface first and then draw its sanserif version; this was the way Martin Majoor's **Scala** family (1994) and Peter Bilak's **Eureka** (1998) and **Fedra** (2001–2003) families were created.

**acd gjx 38**

**acd gjx 38**

**acd gjx 38**

**acd gjx 38**

**acd gjx 38**

Some characters from the **Franklin Gothic Roman** (60 pt), **Futura Bold** (58 pt), **Gill Sans Bold** (70 pt), **Frutiger Bold** (68 pt) and **MelloSansBold™** (74 pt)

## Italics

The first italic types appeared in Italy (hence its name) at the beginning of the 16th century, and were created by the engraver Francesco Griffo, in partnership with Aldo Manutius, a venetian printer. It was based on contemporary apostolic calligraphy which characteristics were informality and quickness. Its appearance is also due to the fact that Manutius started to print small books that required space optimization. The new type was made of small inclined and condensed letters that propitiated the optimization he looked for; however, they did not have capital letters – they were used with roman uppercase letters. Today, italics are mostly used to emphasize text passages and expressions.

One of the first italic types to work as a secondary type and with the same formal characteristics of the roman type became with the creation of the **Romains du Roi** type, engraved in 1702 in France by Phillipe Grandjean. One of the first italics that assimilated an inclined roman type was designed by Firmin Didot in 1784 in France. Since the beginning of the 20th century, the italic fonts vary from inclined versions of the roman version (also named obliques) to cursive versions.

The **MelloSans™** family, as many of contemporary text fonts, has “true” italic versions or, in other words, versions which characters undergo re-designing presenting cursive forms, instead of inclined roman forms like in the oblique versions.

eyagf

*eyagf*

*eyagf*

MelloSansBook™ and MelloSansBookItalic™ 72pt, and below, an example of a possible oblique version.

**Elderly people will be guaranteed.**

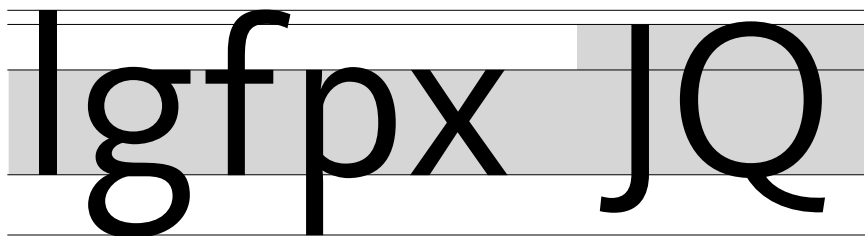
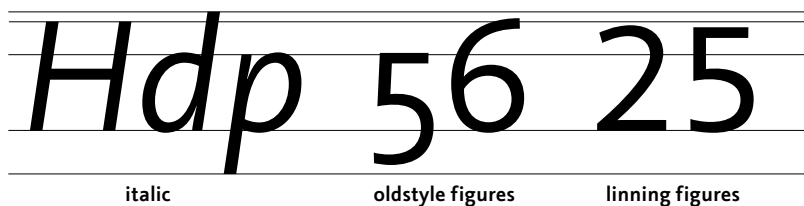
***Elderly people will be guaranteed.***

MelloSansBlack™ and MelloSansBlackItalic™, 18 pt.

**2**

***wàz5d***

## Characteristics of a text typeface

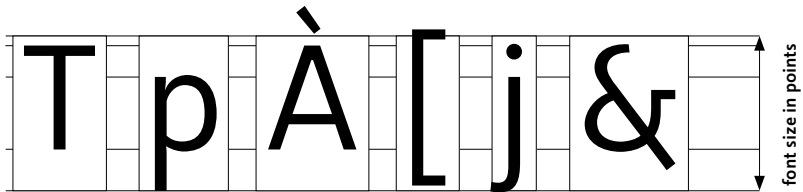
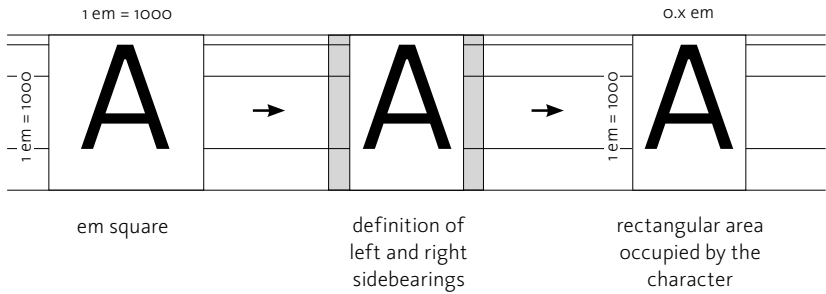


The main lines that define the proportions of text typefaces are presented here using **MelloSansBook™**. It is worth noting that, in the case of the italic version, in spite of the inclination, the lines that define the proportions are the same (although this is a common practice, it is not a rule). In the lowercase letters, all the forms that exceed the limits of x-height are called ascender forms; those that exceed the baseline are called descender forms. Uppercase letters may also present descender forms, such as in *J* and *Q* in all weights of the **MelloSans™** family.

### Em square

In order to design each character in a typeface, it should usually be taken into consideration a square area called *em square*. The term *em* comes from letter *M*, that is one of the widest characters of the alphabet, but this does not necessarily mean that it should occupy the whole width of the em square. When the font is designed in the graphic softwares, the em square is 1000 x 1000 units, if the language adopted is Postscript, and 2048 x 2048 units if the language is True Type. The **MelloSans™** family used Postscript language, therefore, all its characters were designed based on a 1000 x 1000 em square.

The space between the ascender and descender lines is equivalent to the em square height or, in other words, 1000 units or 1 em. Thus, when the font is generated, 1 em represents the size of the font in points – for example, if we adjust the font to 12 points, it means that the distance between the ascender and descender lines is 12 points. The em square, where each character was designed, will be replaced by rectangular areas with varying width, according to the lateral spacing of each character that is defined by the author of the font, and with a fixed height of 1000 units between the ascender and descender lines. This rectangular area is for the digital system somewhat similar to the rectangular form present in the main body of the metallic mobile types.



Tudo que respira conspira.



\* Detail showing metallic mobile types on the component bar, taken from Phil Baines' and Andrew Haslan's *Tipografía/función, forma y diseño*.

### Spacing and kerning pairs

As we have already seen, each font glyph receives lateral left and right spacing that will delineate the width of the rectangular area to be occupied by the form. This spacing defines areas to the left and right of each glyph denominated *sidebearings*. Spacing of the characters of a font could be determined by the letter *H* (or *n*, in the lowercase) or letter *O* (or *o* in the lowercase) because they present equal or similar sidebearings on both sides. The basis for the spacing of straight forms is letter *H* (or *n*), and for the spacing of curved forms is letter *O* (or *o*). In the case of italics, because the forms are not centered on their rectangular areas, glyph inclination should be taken into consideration for the adjustment of the sidebearings.

With the spacing of all glyphs completed, we still notice that some pairs of letters are a bit strange when we read. For example, when letter *V* joins letter *A*. For these pairs, it is necessary a kerning adjustment to approximate the letters. These adjustments are numerous in a text font and may be negative (as when letter *V* joins letter *A*) or positive (pairs in which letters must be separated).

As to the weights of a font family, when we come near the light weight, spacing values and kerning are slightly higher or, in other words, the font is more spaced, and as we approximate to the black weight, these values are slightly lower; therefore, the font is less spaced.

Space adjustments and kerning pairs in a text font are as important as the design of the glyphs itself and require many printing tests. These adjustments are done in softwares of font creation such as Fontlab.

| H | | O | | H | | O |

HAHBHCHDHEHFHGHGHHIHJHKHLH  
OAOBOCODOEFOGOGOHOIOJOKOLO  
nanbncndnenfnngnhninjnknlnmnnnon  
oao bocodoe ofogohoi ojokolomonooo

**BRAVA**

without kerning

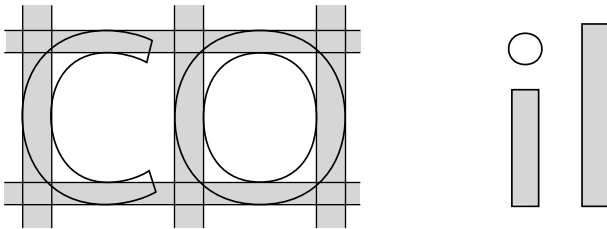
**BRAVA**

with kerning

### Modulation and contrast

The design of a text typeface must follow a modulation in relation not only to the main lines already presented but also in relation to character thickness. For example, curved horizontal and vertical forms of letter *C* must present similar thickness (or almost similar) to the same forms in letter *O*, and the straight stem of letter *i* must be similar (or almost similar) to the straight stem of letter *l* (See figure bellow). Within this modulation there could be a contrast between vertical and horizontal thickness of the stems of a letter. In a typeface based on the humanist style, horizontal stems usually are a little thinner than the vertical ones, and the curved forms are slightly thicker than the straight ones. Despite all of this, when compared to serif faces, the contrast on a sanserif one is usually considered low.

Within the weight variation of the **MelloSans™** family, as well as in the majority of sanserif typefaces based on the humanist model, the more we get nearer to the light weight, the less perceptible is the contrast between the forms; on the other hand, the more we get nearer to the black weight, the more visible is the contrast.



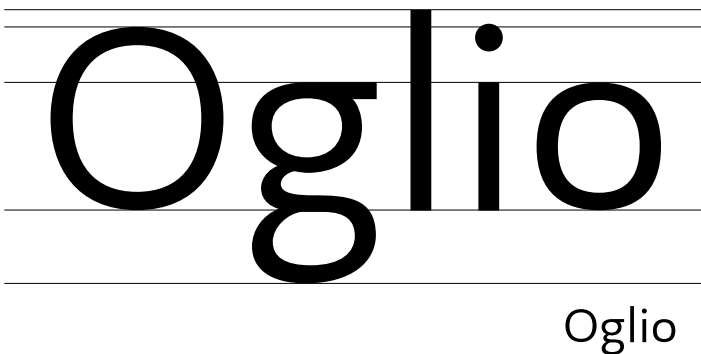
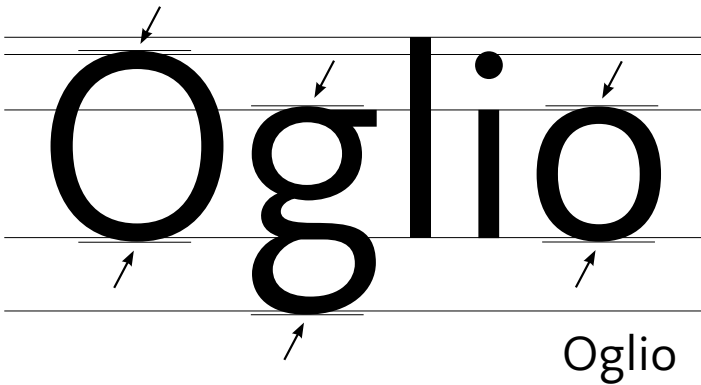
The grey areas show similar thickness in different characters

**OOOOO**      **aaaaa**

Contrast variation in the 5 weights of **MelloSans™**

### Overshooting

In the curved forms of letters such as *O* and *g*, presented on page 23 of this work, we notice that their superior and inferior limits exceed the main lines a little. This is an optical adjustment called *overshooting* that is used to balance the curved forms with the straight ones, and is indicated with an arrow on the first example bellow. If this adjustment is not made, curved characters will seem smaller than the straight ones, as shown in the second example.



### Similar forms between characters

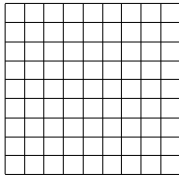
The use of some similar forms in different characters is a common practice in the design of sanserif text typefaces, which offers more balance to the set of letters and makes reading easier. Pairs or sets of glyphs that present some similarity in form are presented bellow using **MelloSansBook™** and **MelloSans BookItalic™**, 14 pt .

bq	<i>agbq</i>
pd	<i>pd</i>
hnu	<i>hnu</i>
ij	<i>ij</i>
cç	<i>cç</i>
CÇ	<i>CÇ</i>
OQ	<i>OQ</i>
69	<i>69</i>
69	<i>69</i>
()	<i>()</i>
}	<i>}</i>
[]	<i>[]</i>
¿?	<i>¿?</i>
¡!	<i>¡!</i>
.: ... ·	<i>.: ... ·</i>
, ” ; “” “	<i>, ” ; “” “</i>
<>	<i>&lt;&gt;</i>
« » ‹ ›	<i>« » ‹ ›</i>
— — — —	<i>— — — —</i>

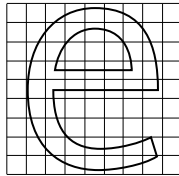
## Hinting

If we set text using a digital typeface in a small size in low resolution conditions, such as in the screen of a monitor or in the printing of a common inkjet printer, hinting adjustment will be necessary. This adjustment consists in giving instructions to the font file, in order to obtain its optimization, under these conditions. This adjustment is also made in softwares of font creation.

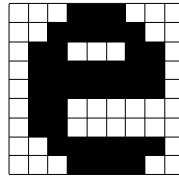
### Example 1 – Monitor



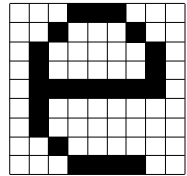
A monitor resolution is defined through a pixel net



A letter is typed in a very small size

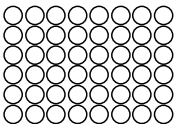


If the font does not have hinting adjustment, spacing and thickness may be impaired

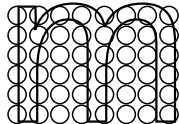


When hinting adjustment is made, the letters are visually optimized

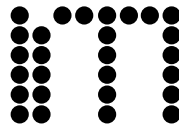
### Example 2 – Printing



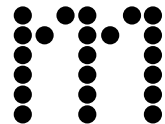
Resolution in an inkjet printer is defined by points



We try to print a word or letter in a very small size



If the font does not have hinting adjustment, spacing and thickness may be impaired



When hinting adjustment is made, the letters are visually optimized

3

*gkèfjx*

### Font creation process

In this section, the typesetting creative process is presented from its start. This study took approximately nine months. The theoretical part of the study was always very important, but even so, there are many technical details concerning text typeface design that are difficult to find in textbooks and magazines and could only be accessed in specialized websites. The Fontlab 4.6 software had to be studied in depth during the elaboration of the work, because the Fontographer software, which I had used before, did not work satisfactorily in the MacOSX system, the one I use. This was possible due to the continuous reading of the user's manual and to the support found on the Typophile page ([www.typophile.com](http://www.typophile.com)).

I had already created a few fonts (see page 15) and was a bit familiar with the basic knowledge of the subject, but the creation of a text font was an unexplored area which demanded a lot of research, once my intention was to experiment with each step of text typeface creation.

What highly motivated me during the process was the obtainment of a good readability, which demanded many changes and revisions based on tests in form of printed texts set in many sizes. Another important factor was the attempt to give identity to the font; besides the necessary study of existing fonts and their influence, I tried to create a design that could have enough self expression.

### First studies

This work started with the printing of an A4 apostil with glyphs of many different sanserif fonts, such as Helvetica, Univers, Frutiger, TheSans, Meta, Kievit, among others, in which the equivalent weight was the regular weight (or normal, plain, roman, medium, according to the case).

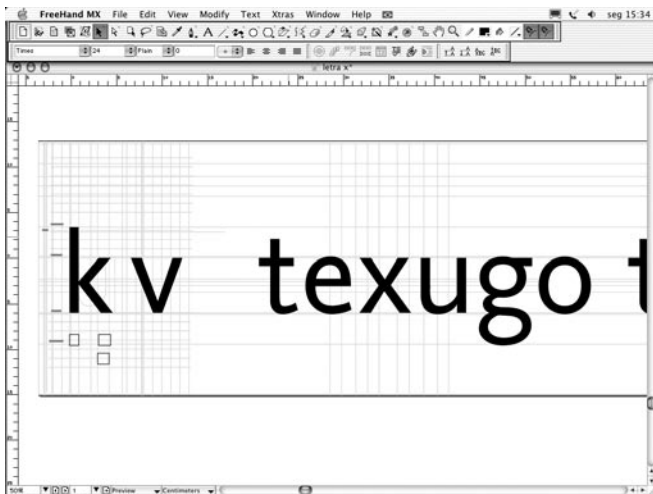
With this apostil it was possible to study the proportions of typeface designs in relation to the main lines and thickness. Modern fonts based on the humanist model such as TheSans, Kievit and DTL Caspari were more considered and studied.

In a parallel manner to the study of this apostil, the design began with first manual sketches in millimetered paper for the corresponding weight of **MelloSansMedium™**. At this time, the width and height proportions of the lowercase characters (through letters *h* and *p*) and the definition of curved forms (through letters *p* and *o*) were tested. However, the design improved in form and precision from the moment I started to draw the font in the graphic software Freehand MX.

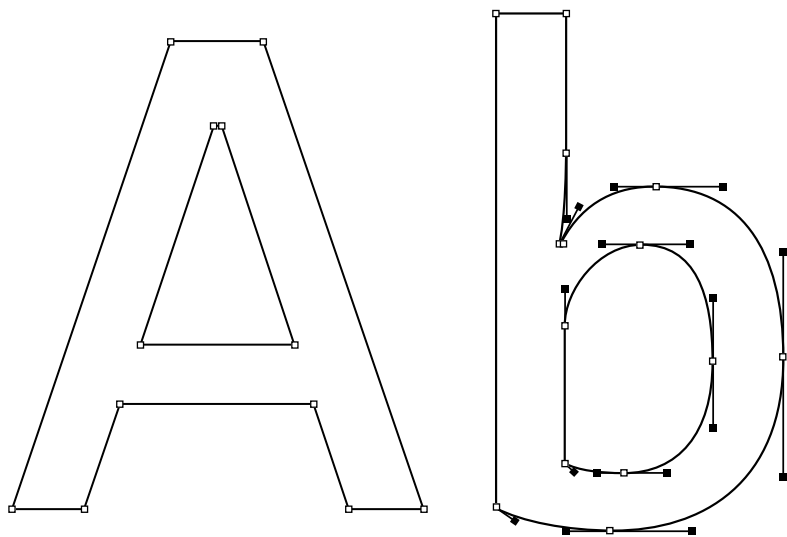


## Freehand

I decided to start drawing the glyphs in this software, which I was familiar with, because in it they could be drawn side by side in the same window, what is more difficult in specific softwares for font creation, such as Fontlab. The glyphs of the first **MelloSansMedium™** version were created in Freehand using the Bézier tool (or Pen tool), that creates vectorial paths based on small nodes. In a parallel manner to the creation of the glyphs, some spacing studies between them were made by setting words. This version underwent many posterior adjustments because its curved forms were too rounded and the ascenders and descenders lengths slightly exaggerated.



Font being developed in Freehand MX



Letters *A* and *b* drawn with Bézier tool

quelque

padaria

First version of **MelloSansMedium™** (note the rounded forms of letters *q* and *d* and the ascenders and descenders slightly exaggerated)

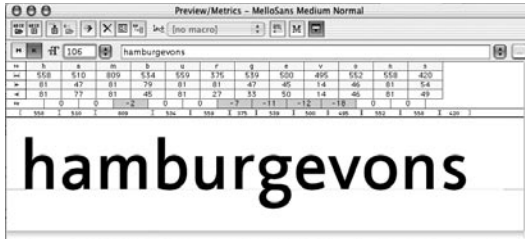
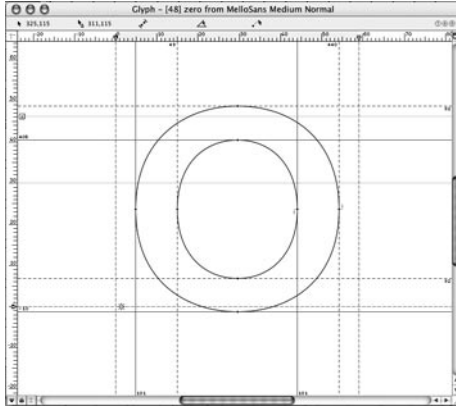
## Fontlab

When I finished the design of all the glyphs in Freehand, it was necessary to transform each one of them separately in an EPS file and open them in Fontlab 4.6, where the font underwent some proportion and re-designing adjustments, before it was composed as a font file

X-height was adjusted to a size that permitted good readability (approximately 70% of the uppercase letters) and, at the same time, contemplated legibility in the accentuation of characters. An initial adjustment in spacing in all glyphs was made, as well as the creation of kerning pairs.

The next step was to create the corresponding italic version, from the first version of **MelloSansMedium™**. All the glyphs suffered an 8,5° inclination to the right and had re-design adaptations. Some of their designs were re-adapted to cursive forms.





*Glyph Window* (for the edition of characters) and *Metrics Window* (for spacing and kerning adjustment) in **Fontlab 4.6**.

abcdefghijklmnopqr uvw y

*abcdefghijklmnopqr uvw y*

Re-designed characters based on cursive forms in **MelloSansMediumItalic™**

## Interpolation

When the first version of **MelloSans Medium™** and its italic version were finished, the next step was to draw the two extreme weights: **MelloSansLight™** and **MelloSansBlack™** and their italic versions. The designs of these extreme versions were directly made in Fontlab, by means of thickness alterations in each glyph. The thicknesses attributed to light and black weights were made according to Luc(as) de Groot's Interpolation Theory<sup>3</sup>, which he created for his super-family TheSis in 1987, that presents mathematic formulas for the attribution of thicknesses, taking into consideration two extreme weights and one intermediate weight.



a=light, b=medium, c=black

$$a = b^2 / c$$

$$b = \sqrt{a \times c}$$

$$c = b^2 / a$$

ABCDEFGHIJKLMNOPS  
TUVWXYZabcdefghijklmnop  
opqrstuvwxyz1234567890

ABCDEFGHIJKLMNOPS  
TUVWXYZabcdefghijklmnop  
qrstuvwxyz1234567890

**ABCDEFGHIJKLMNOPS**  
**TUVWXYZabcdefghijklmnop**  
**opqrstuvwxyz1234567890**

**ABCDEFGHIJKLMNOPS**  
**TUVWXYZabcdefghijklmnop**  
**opqrstuvwxyz1234567890**

Formulas of Luc(as) de Groot's Interpolation Theory and light and black weights.

After the adjustments of the new black and light weights and of their italic versions, the bold, medium and book intermediate weights were obtained through the interpolation process of Multiple Master technology available in Fontlab, which made the first **MelloSansMedium™** version and its italic version dischargeable, because the new medium weight obtained is a true intermediate of the extreme light and black weights according to interpolation. The thicknesses of these new intermediate weights were defined in the interpolation process based on de Groot's theory formulas.

Many other design adjustments and revisions were made in all weights, especially concerning spacing and kerning pairs. Hinting was also adjusted in all versions. The conclusion of the work was the generation of the font files in Type 1 format (Postscript), in Macintosh and PC versions, what was also made in Fontlab.

**Black**

***Black***

**Bold**

***Bold***

**Medium**

***Medium***

**Book**

***Book***

**Light**

***Light***

4

*å}ë8@*

MODELO HUMANISTA  
*e outras referências tipográficas*

CONTEMPORÂNEAS

NENHUMA

SERIFA

ainda assim buscando a boa legibilidade em corpos pequenos

*e expressividade*

UM EXERCÍCIO GRÁFICO

TIPOGRÁFICO

Nas próximas páginas

**MelloSans™**



16/20

O Departamento de Projeto – AUP foi fundado em 1962, sendo denominado inicialmente Departamento de Composição, a partir de reunião dos colegiados João Batista Vilanova Artigas, Roberto C. Cesar, Abelardo de Souza e Hélio Duarte. Naquele mesmo ano, passaria a denominar-se Departamento de Projeto.

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*MelloSansMediumItalic™ 20pt*

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*MelloSansMediumItalic™ 10pt*

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# MelloSansBold™ 20pt

ABCDEFGHIJKLMNOPQRSTUVWXYZ

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5

## MelloSansBold™ 10pt

ABCDEFGHIJKLMNOPQRSTUVWXYZ

XYZ ÀÁÄÅÃÄÈÉËÊËÏÏÏÒÓÖÔÕ

ÙÚÛÜÝÿÇÑ abcdefghijklmn

opqrstuvwxyz àáäâãåèéëèìïï

òóöôõùúüûýÿçñ 1234567890

1234567890 ßµ\$ç£€ƒ¥¶@®©#

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**MelloSansBlackItalic™ 20pt****ABCDEFGHIJKLMNOPQRSTUVWXYZ****XYZ À Á Ä Å Æ È É Ê Ë Ì Í Î Ï Ò Ó Ô Õ****Ù Ú Û Ü Ý Þ Ç Ñ abcdefghijklmno****pqrstuvwxyz à á ä å æ è é ê ë ì í î ï****ò ó ô õ ù ú û ü ý þ ç ñ 1234567890****1234567890 ß µ \$ % £ € f ¥ π @ ° © #****& % ™ ± + - ÷ × = − − − − − \_ < > « » ‹ › ( ) { } [ ] ¿ ?****¡ ! / \ | . , ; : ; … “ ” ‘ ’ ¡ ¢ £ ¤ ¥ ¦ § ¨ © ª « ¬ ® ¯ ° ± ² ³ ´ µ ¶ · ¸ ¹ º » ¼ ½ ¾****MelloSansBlackItalic™ 10pt****ABCDEFGHIJKLMNOPQRSTUVWXYZ****XYZ À Á Ä Å Æ È É Ê Ë Ì Í Î Ï Ò Ó Ô Õ****Ù Ú Û Ü Ý Þ Ç Ñ abcdefghijklmno****pqrstuvwxyz à á ä å æ è é ê ë ì í î ï****ò ó ô õ ù ú û ü ý þ ç ñ 1234567890****1234567890 ß µ \$ % £ € f ¥ π @ ° © #****& % ™ ± + - ÷ × = − − − − − \_ < > « » ‹ › ( ) { } [ ] ¿ ?****¡ ! / \ | . , ; : ; … “ ” ‘ ’ ¡ ¢ £ ¤ ¥ ¦ § ¨ © ª « ¬ ® ¯ ° ± ² ³ ´ µ ¶ · ¸ ¹ º » ¼ ½ ¾**

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This work is dedicated to my parents, to my brother, to Ciça, to my friends and my faculty colleagues.

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This apostil was entirely composed with the **MelloSans™** family and its weight variations, except for the examples on page 15 (Gordura, Yanez, Chimps), page 16 (TheAntiqua) and page 19 (Franklin Gothic, Futura, Gill Sans, Frutiger). The main text was adjusted in **MelloSansLight™** 9/15.

The electronic PDF version of this work may be downloaded at

<http://www.fermello.org/mellosans>



picture by Thomaz Rezende

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