TeX in church: more adventures

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Abstract

This article is a continuation of the author's typographical adventures when producing material for masses and church-related activities.

Abstract

Questo articolo è il seguito delle avventure tipografiche che l'autore ha sperimentato nel produrre materiale per la messa e altre attività ecclesiastiche.

1 Introduction

Using TeX and friends beyond the academic scope is not too unusual as it sounds, specially in tasks in which typography plays an important role. However, the literature is a bit sparse when covering such scenarios and looking for potential opportunities.

In a recent TUGboat article (CEREDA, 2020), I described how I use TeX for producing material for masses and church-related activities. In that particular document, I covered two topics, songsheets and song booklets, describing how TeX and friends could provide an efficient and fluent work flow, as well as producing beautiful materials. The reception was surprisingly positive. Now, this article for the Italian community can be read as a natural extension of my previous contribution, covering other areas of the church. The original advice stands: there is yet plenty of room to cover!

2 Books

I tend to not dissociate design and content when reading a book, as they offer an unique experience to the reader. If the book is of a spiritual nature (e.g, the life of a saint[1]), things get more intricate: as in sacred music, the text is food for the mind and the visual aspects are food for the heart.

Recently, good book projects can be found from local Catholic publishers. Not just the paper quality and cover artwork are well chosen, the entirety of the typographical elements is finely crafted. This offers a very positive and pleasant experience, as well as an authoritative impact: mind, heart and soul are invited to harmony.

In 2015, I had the opportunity to typeset a small songbook for our parish. That was my first contact with an actual print shop, with a circulation of 200 copies. I had to design everything from ground

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1. I am currently reading a book about the life of Saint Alphonsus Maria de Liguori, which is fascinating.

up, from cover to internal elements. Of course, in hindsight, I would change a couple of (if not several) things if I had the chance; the use of TeX, however, helped me understand the importance of good typography. Figure 1 illustrates two pages of the book (songs and prayer).

This particular project was challenging: I had to fit 400 songs inside the book without going over 100 pages total. Also, the text had to be readable by people in a comprehensive age range, from children to elders. I had to work with at least 6 different layouts until I found a reasonable compromise solution. I used memoir as class, followed by some important packages such as multicol and tcolorbox, as a means to produce the final result.

One interesting bit worth mentioning is the inclusion of \textls, used for letterspacing shorter pieces of text, alongside with \scshape to typeset the words of the Consecration in the Eucharistic Prayers, as a means to provide emphasis:

```
\textls{\scshape Hoc est enim
                 Corpus meum.}
```

In 2018, I decided to typeset my own songbook. This time, I had only a few constraints and was able to include 900 songs in 160 pages total. I also had more space available for content, so I decided to keep the existing layout with minor tweaks and a brand new font. Figure 2 illustrates two pages of the book (songs).

As the previous project, I used memoir as class, followed by some important packages such as multicol, tcolorbox and fontspec. This was also my first project using XƎLaTeX as engine.

I also used imakeidx for song indexing. However, I had to patch it, as songs had to be referenced by their numbers and not by the pages in which they were located in the document. Thanks to etoolbox, the patch was straightforward:

```
\makeatletter
\patchcmd{\@wrindex}{\thepage}
{\thesongscounter}{}{}%
\AtBeginDocument{%
  \patchcmd{\imki@putindex}
    {\immediate}
    {\ifimki@disableautomatic
    \else\immediate}
    {}{}%
  \patchcmd{\imki@putindex}
    {\endcsname}
    {\endcsname\fi}
```
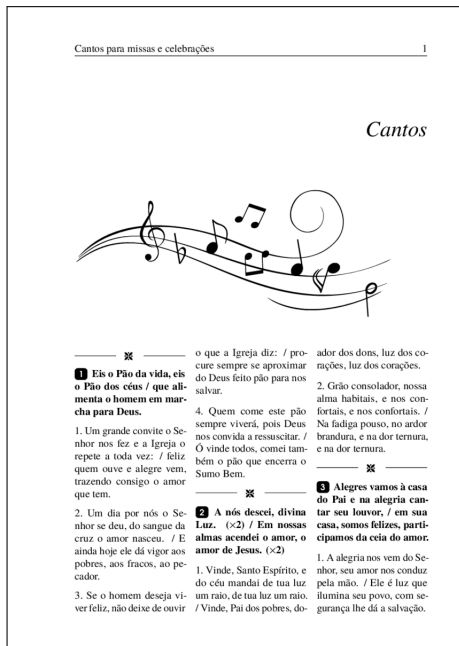
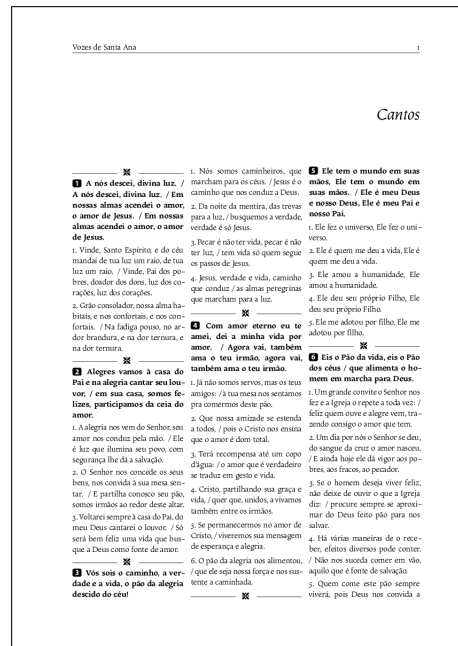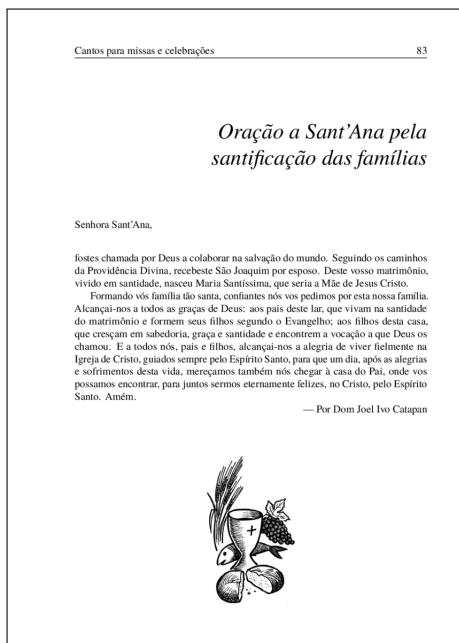FIGURE 1: My first songbook typesetting, in 2015.

FIGURE 2: My second songbook typesetting, in 2018.

```
        {}{}%
}
\makeatother
```

In 2019, I collected songsheets from the Taizé community, an ecumenical Christian monastic fraternity in Taizé, France, and compiled them into a personal songbook as well. Figure 3 illustrates two pages of this book (cover and index).

Again, I decided to use memoir as class and packages such as tcolorbox, fontspec and imakeidx for graphical elements, font handling and index, respectively. As reference, I used the following custom style for the index:

```
headings_flag 1
```

```
heading_prefix "\\letra{"
heading_suffix "}\\nopagebreak\n"
item_0 "\n\\item "
delim_0 "\\nobreak\\dotfill "
```

In this particular style, \letra is a wrapper around a custom tcolorbox environment which helped me achieve the effect of boxed letters as section headings in the printed index.

Songsheets were included as images, so I had an external script to calculate the box widths and set up the dimensions in my document accordingly. I also used X⅃LATEX as engine. The result was quite interesting, as I managed to automate almost every step of song inclusion.
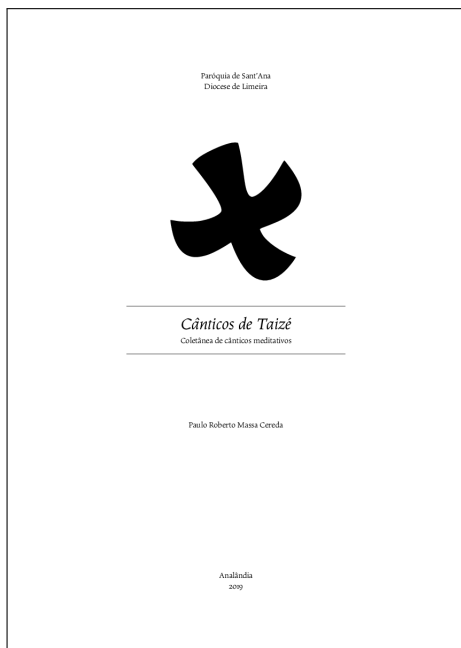
Figure 3: My third songbook typesetting, in 2019.

Paper size

Some decisions were result of years of experimentation, as well as trial and error sessions. The first choice to make was about the paper size. A4 was pretty much the norm around here, but I was concerned about how uncomfortable and clumsy it was for people to hold an A4 paper sheet during masses and other church-related activities. I was also suspicious that the larger the paper, the quicker it would be damaged and had to be replaced.

At a certain moment in time, I decided to try A5 for a change. People were quite reluctant on holding a paper different than the traditional A4 size. It took a couple of weeks. Soon, I saw the potential on using A5, not to mention the possibility of saving

sheets, since I could print two A5 pages (or four, considering the two sides, as seen in Figure 4) in just one A4 page. In a humble parish like ours, this would be a most welcoming benefit.

Figure 4: Booklet sample from 2018.

So I found a paper size that would be ideal for our parish. It did not take long for me to start experimenting booklet formats as well. It was a success. Thanks to the `pdfpages` package, which provides support for booklets, I was able to organise A5 pages together such that I could just print and fold A4 sheets without the need of cutting:

```
\includepdf[pages={4,1,2,3},
            nup=2x1]{booklet}
```

I even acquired a special stapler to help me staple in the middle of an A4 page when we need to produce an A5 booklet with more than four pages, as seen in Figure 5.

Figure 5: My special stapler.

From now on, A5 is our paper size of choice for books and booklets, as it seems the most reasonable

balance between cost and benefit for our parish. I have plans for A6 booklets as well (specially devotional material), but that might take a while.

Fonts

Fonts do play an important role in producing church-related material. In a way, the type choice might even convey an impression of credibility and assurance (or lack thereof, in the case of unfortunate decisions[2]).

For some reason[3], certain popular publishes are increasingly adopting the use of sans serif fonts. While these documents do not look that bad at all, I still favour the use of serif fonts as the norm for printed material. Occasionally, I might rely on a sans serif font for a section title, but even so the font has to be carefully chosen.

How do I choose a font? The answer is not too simple. For starters, I need to know the target public, so I can direct my efforts towards enhancing their reading experience. For instance, when preparing an order of mass, I have to assess the peculiarities of this scenario:

1. There are people in a comprehensive age range, from children to elders, so I need to ensure the text is readable. I tend to opt for rounder and wider fonts, so Bookman-based typefaces are an excellent choice. It is also possible to experiment with microtype as a means to tweak character protrusion and font expansion.

2. The church building does not provide too much natural light during masses, so the font size has to be sufficient to be spotted in a low light environment. In this regard, due to its stylistic nature, Bookman seems to be an interesting choice again, as it is readable even at smaller sizes.

3. Considering the use of an A5 paper size and the area available for the actual content, how should I deal with text alignment and hyphenation rules? This is way trickier than it sounds: there has to be a balance between good typography and readability.

There is a lot yet to consider, including the use of bold, italics and other styles throughout the text. Are they really necessary? The human eye is very receptive to differences in a text. However, a text should not exaggerate on such emphasis, as they could (unintentionally) distract the reader from an actual text comprehension and the message would be lost. As my mother usually says, a text should

not contain too much information coming from styles or shapes. Less is more.

When preparing material for children, fonts with irregular shapes like Comic Sans are actually welcome. I am looking forward to an opportunity to use an interesting font named Open Dyslexic, created to increase readability for readers with dyslexia. According to the author, letters have heavy weighted bottoms to indicate direction, and the unique shapes of each letter can help prevent confusion through flipping and swapping.

There is another interesting font project named Luciole, which might explain the increasing use of sans serif by certain publishers. The typeface is developed explicitly for visually impaired people. According to the development team, the font adheres to several design criteria to provide the best possible reading experience for the visually impaired. It is indeed worth giving a try, specially in a context in which people could certainly benefit from such font features.

If you are curious about the fonts I typically use in a project, here is a non-exhaustive list: Bookman, Karol, Calendas Plus, Arno Pro, Calluna, Source Serif Pro, Lucida, Elstob, EB Garamond, Alegreya, Sabon Next, Walbaum and Quire Sans. This list contains proprietary and open source fonts.

Layout

Since I had some constraints when working on these projects (specially number of pages as a means to save printing), I decided to experiment some minimalist designs. I then opted for smaller titles and graphical elements unobtrusively disposed in the page. The feedback was positive. I also refrained myself from using too much colour (if any), so the majority of my material is monochromatic.

For the layout itself, I found out columns could be an interesting approach for taking advantage of the space available in the page in a clever way (specially with balanced columns). The question was, how many columns should I use? It depends, again, on several aspects.

For smaller font sizes, three columns seem to be the most sensible approach, as seen in Figures 1 and 2. For larger fonts or for certain scenarios, two columns seem to be the norm. Figure 6 illustrates the use of two columns in a song booklet for masses.

Personally, I always find useful to prepare document proofs, i.e, print some samples and ask for feedback during production. In here, my parents work as my layout reviewers. Everything is put under scrutiny: text, layout, paper size, printing quality, font size and style, and other graphical elements. The feedback, however, does not necessarily has to be of a technical nature. Even the simplest suggestion or criticism (or the lack thereof) contributes to the project typesetting. The more the document looks fluid and pleasant to the eye, the better impact on its potential readers.

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2. I still find some parishes using fonts like Comic Sans for bulletins and devotionals. While I do not hold anything against this font family and its derivatives, I strongly believe they should be used with absolute great care and attention in very specific scenarios, as seen later in this article.

3. Actually, I have an hypothesis on this particular topic, which I expand a bit later on in this section.

FIGURE 6: Song booklet from 2020.

Columns are handled by the multicol package. I usually rely on balanced columns (which is the default behaviour when using the multicols environment), for mainly two reasons. The first is of course aesthetic, as text and other graphical elements are equally distributed in all columns. The human eye is keen on symmetry. The second reason is actually strategical, as the remaining space could be used for an additional content. The multicol package offers several features for multiple columns, including tweaks on its inner workings and column separators.

3 Assorted materials

Besides books and booklets, I use TEX and friends to produce other church-related materials. This section aims at presenting some of them, from several areas and topics of interest.

Figure 7 presents (parts of) the Eucharistic Prayer I (also known as the Roman Canon), typeset with LuaLATEX and Lilypond thanks to the lyluatex package. This package also allows the use of system fonts within Lilypond; however, we decided to keep the default sans serif font for the lyrics, defined by the engraver. It is worth mentioning, as a trivia, that the Brazilian edition of the Eucharistic Prayers has responses between sections (approved by the Vatican).

The use of the lyluatex package is quite straightforward. Keep in mind that the package requires LuaLATEX with shell escape enabled, as it invokes Lilypond under the hood. A simple macro pointing to the Lilypond file to be typeset suffices:

```
\lilypondfile{sheets/amen.ly}
```
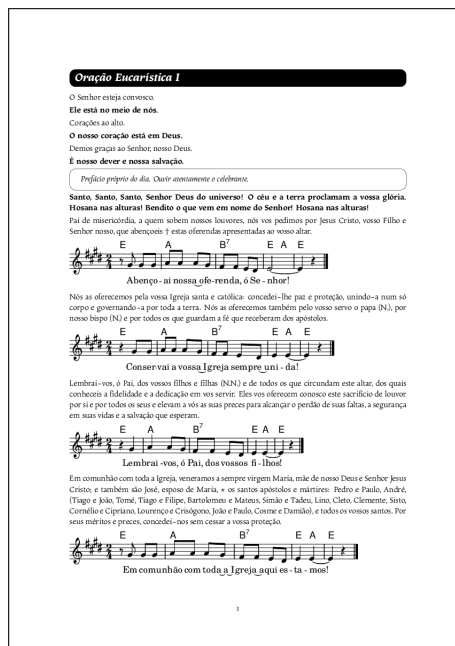

FIGURE 7: Eucharistic Prayer I (incomplete).

Figure 8 presents a monthly bulletin. I write and typeset this material for the liturgy pastoral in which I work as a volunteer. This bulletin is typeset in A5 and distributed at the end of the masses. It is a very short bulletin (typically two pages), so we have to manually cut the A4 paper in half with the help of a manual paper cutting machine. We produce no more than 40 copies per edition. Occasionally, we provide copies of past editions on demand, according to certain requests.

The bulletin contains reports, news, film and book recommendations, as well as puzzles and other recreational activities. For instance, I use the amusing soup package for generating an alphabet soup, a type of puzzle consisting of a grid of letters for word search:
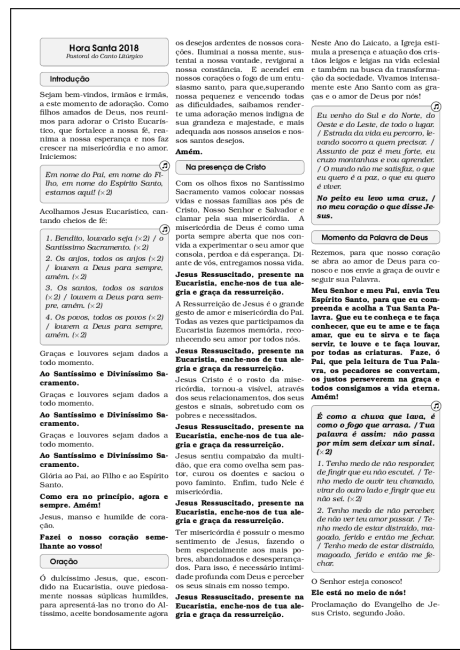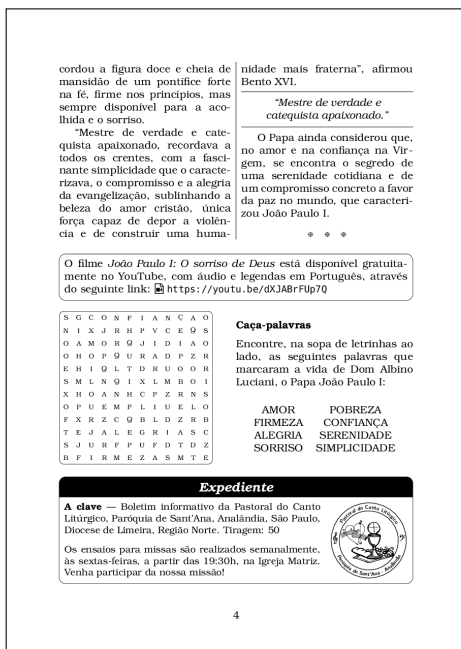
FIGURE 8: A monthly bulletin (two editions).

FIGURE 9: A script of prayers for the Holy Hour.

and prayers arranged together, as well as several graphical elements throughout the document. The awesome tcolorbox package was used to generate the song boxes (represented by a music note icon in the upper right corner) and section styles, while the multicol package provided the layout with three balanced columns. For this particular project, we opted for narrower margins.

The music note icon in the upper right corner of a song box can be achieved by exploiting the overlay key in the tcolorbox environment. Having a vector image, we can use the following code:

```
\newcommand{\musicnote}{%
\begin{scope}[
  shift={
    ([xshift=-.5em,
    yshift=-.1em]frame.north east)
  }, scale=1 ]
  \node[ circle, fill=white,
        draw=black, inner sep=1pt
]{\includegraphics[scale=.6]{note}};
\end{scope}}
```

Figure 10 illustrates the final result, obtained by setting the \musicnote macro, previously defined, as overlay value in the tcolorbox environment corresponding to the song box.

```
% preamble
\usepackage{soup}

[...]

% document body
\begin{Alphabetsoup}[6][6][\sffamily]
\hideinsoup{1}{1}{down}{G,U,I,T}
\hideinsoup{1}{3}{right}{I,T,A,L,I,A}
\hideinsoup{1}{6}{upright}{C,A,R,L,A}
\end{Alphabetsoup}
```

Figure 9 presents a script of prayers for the Holy Hour before the Blessed Sacrament. This project was quite interesting, as it had sections with songs
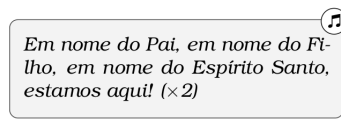

FIGURE 10: A note in the upper right corner of a song box.

Figure 11 presents a document containing a list of activities and events planned for the Holy Week

in 2019. We prepared it for distribution at the end of the masses during Lent. The schedule is typeset throughout two balanced columns and the activities of each day are grouped into boxes, powered by the tcolorbox package. Each activity also features an analog clock indicating the corresponding time (alongside the written counterpart, of course).
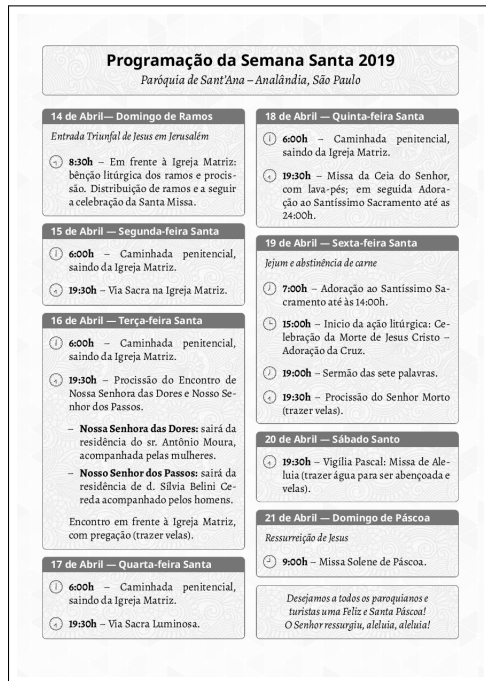

FIGURE 11: Activities and events for the Holy Week 2019.

I decided to include background images (simple patterns) for both page and each block as well, obtaining an interesting visual effect. In this case, I needed to ensure the opacity of such images did not compromise the text readability, so a couple of proofs were printed. This is a sample code of setting a background image in a tcolorbox environment:

```
underlay={\begin{tcbclipinterior}
  \node[anchor=south] at
    ([yshift=-10pt]interior.south)
  {\includegraphics[width=\tcb@width,
  keepaspectratio]{assets/bloom.png}};
\end{tcbclipinterior}}
```

The materials presented in this section do not contain any complex code at all. It is just a matter of proposing simple, minimalist layouts inspired by good, existing typographical works. Again, less is more, specially in a very specific domain such as church materials in which there is a higher, ultimate goal to achieve: contribute, through typesetting, to the complete fulfilment of a person's relationship with God.

4 A case study

On October 2020 in Assisi, at the tomb of Francis of Assisi in the basilica, after mass, Pope Francis signed *Fratelli tutti*, his third encyclical letter, calling for more human fraternity and solidarity, and is a plea to reject wars. The document is divided in 8 chapters, 287 paragraphs and contains 288 footnotes.

The complete text of this encyclical letter (as well as other encyclicals from Pope Francis and his predecessors) is freely available in the Vatican website for online browsing. Additionally, the Holy See provides a PDF version of such document. By inspecting the PDF metadata, it is quite possible to infer that the file is automatically generated.

As a case study, I humbly tried to propose a minimalist layout (Figure 12, second image) as an alternative to the official one (Figure 12, first image). Some remarks of my attempt:

1. The original document uses sans serif fonts. By inspecting it, the fonts used are Arial and Helvetica. I decided to rely on a serif font instead and use just one typeface throughout the entire document. For this particular experiment, I chose Karol, a proprietary font created in 2013 by Daniel Sabino. I used X⅃LATEX as engine and included fontspec and microtype for proper font handling:

```
\usepackage{fontspec}
\usepackage{microtype}

\setmainfont[Ligatures=TeX]{Karol}
```

2. I removed any colour from the document and went for a black and white approach. The Papal Insignia was desaturated as a means to have a monochrome version and match the proposed document style. I included graphicx for graphics support:

```
\usepackage{graphicx}
```

3. I found the margins in the original document to be too narrow, so I made then wider. I also reduced the font size and kept the default line spacing and text alignment. I used memoir as document class with A4 as paper size:

```
\documentclass[a4paper,
    12pt, article]{memoir}
```

4. Excerpts of text written in all capitals were rewritten to match sentence case, i.e, the standard case used in prose, in which only the first word is capitalized, except for proper nouns and specific words that are capitalized by certain rules. Only a few occurrences of sentences in all capitals were semantically replaced by small capitals as to emphasise key words:

```
\scshape La Santa Sede
```

La Santa Sede

LETTERA ENCICLICA
FRATELLI TUTTI
DEL SANTO PADRE
FRANCESCO
SULLA FRATERNITÀ
E L'AMICIZIA SOCIALE

1. «*Fratelli tutti*»,[1] scriveva San Francesco d'Assisi per rivolgersi a tutti i fratelli e le sorelle e proporre loro una forma di vita dal sapore di Vangelo. Tra i suoi consigli voglio evidenziarne uno, nel quale invita a un amore che va al di là delle barriere della geografia e dello spazio. Qui egli dichiara beato colui che ama l'altro «quando fosse lontano da lui, quanto se fosse accanto a lui».[2] Con queste poche e semplici parole ha spiegato l'essenziale di una fraternità aperta, che permette di riconoscere, apprezzare e amare ogni persona al di là della vicinanza fisica, al di là del luogo del mondo dove è nata o dove abita.

La Santa Sede

✳

Lettera Enciclica

Fratelli Tutti

del Santo Padre Francesco
sulla fraternità e l'amicizia sociale

ʀᴀᴛᴇʟʟɪ Tᴜᴛᴛɪ[1], scriveva San Francesco d'Assisi per rivolgersi a tutti i fratelli e le sorelle e proporre loro una forma di vita dal sapore di Vangelo. Tra i suoi consigli voglio evidenziarne uno, nel quale invita a un amore che va al di là delle barriere della geografia e dello spazio. Qui egli dichiara beato colui che ama l'altro «quando fosse lontano da lui, quanto se fosse accanto a lui».[2] Con queste poche e semplici parole ha spiegato l'essenziale di una fraternità aperta, che permette di riconoscere, apprezzare e amare ogni persona al di là della vicinanza fisica, al di là del luogo del mondo dove è nata o dove abita.   §1

FIGURE 12: The encyclical letter *Fratelli tutti* written by Pope Francis. The first image is the official document from the Holy See (available in the Vatican website), and the second image is my humble attempt for a minimalist layout.

Bold styles were completely removed whereas italics and emphasis were kept to a minimum.

5. The separator rule between the Papal Insignia and the encyclical letter title was made thinner, with the addition of a small ornament glyph in the centre (both vertical and horizontal), provided by the fourier-orns package:

```
\usepackage{fourier-orns}

\newcommand{\ornamentline}{{%
\parindent=0pt
\vspace{-1ex}\hrulefill%
\hspace{0.2cm} \raisebox{-1.5ex}
{\decoone} \hspace{0.2cm} \hrulefill%
}}
```

6. An initial was included in the first paragraph of the encyclical letter. An initial (sometimes referred as drop capital) is a letter at the beginning of a paragraph that is larger than the rest of the text and it usually spans two or more lines. I used Kramer Regular for the decorative initial font and the lettrine package for drop capital support.

```
% preamble
\usepackage{lettrine}

\input Kramer.fd
\newcommand*\initfamily{%
    \usefont{U}{Kramer}{xl}{n}}

% document body
\lettrine[nindent=2pt]{\initfamily F}
    {ratelli Tutti}\autocite{ref:1},
    scriveva...
```

7. Each paragraph of the encyclical letter is explicitly numbered, as a means to ease referencing and citing from other documents. Instead of using an enumerated list, I decided to keep the paragraphs as they are and include the corresponding number as a discrete marginal note. I prefixed it with a silcrow (i.e, a §) as to indicate the unique reference mark of the corresponding paragraph.

```
% Possible enhancement: set
% a counter and hook it on
% every paragraph

\newcommand{\parmark}[1]{%
\marginpar{\hspace{2em}\S#1} }
```

8. The original citation style was replaced to look like footnotes, so it would be not too intrusive. The bibliography is printed at the end of the document. I wonder how moving them to actual footnotes would actually look like. As I say, there is a lot of room for experimentation.

```
% Some suggestions...
\usepackage[style=verbose-ibid,
    backend=bibtex]{biblatex}
```

The final result is presented in the second image of Figure 12, alongside the original document. Of course, both versions convey the same message, as the texts are identical. However, I humbly advocate that the second version adds a layer of fine crafting that somehow might offer a subjective encouragement and motivation for potential readers.

5 Final remarks

There is an old and ubiquitous maxim in design that says that good typography is invisible. If I may add a complement to this sentence, I would say that good typography is also silent. Throughout the years, I noticed how a good design helps people focus on the actual message. Our efforts have to be in being good messengers, heralds of the content our design holds. Light has to go through our work. That is why I believe good typography is not just invisible, but silent as well: it is present in an apparent absence.

TEX plays an important role in my typographical adventures. The ecosystem is very rich and vibrant, offering countless opportunities to let the imagination and creativity soar. Typography is art. At the end of the day, there has to be a subjective component in which we can evaluate our efforts; good design has to be coherent and cohesive. Under this perspective, TEX and friends have to be at our services and not the other way around.

Good typography is indeed invisible and silent, but it is by no means imperceptible. Noticing it brings joy, gratification. Yet it is challenging to have this subtle perception. As once said in a Futurama episode, when you do things right, people will not be sure you have done anything at all.

References

CEREDA, Paulo Roberto Massa (2020). «TEX in church: A typographical adventure». *TUGboat*, **42** (2), pp. 168–170.

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