





# **RECENT ADVANCES in LUG's font projects**

Münster, March 7th–9th, 2007

**Bogusław Jackowski, Janusz M. Nowacki, Jerzy B. Ludwichowski**

## 2 Projects: Latin Modern & T<sub>E</sub>X Gyre

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**T<sub>E</sub>X Gyre:** launched in spring 2006; aimed, following the Latin Modern project, at supplementing Adobe's 33 basic text fonts (based on the URW++ collection, distributed with Ghostscript) with a rich repertoire of diacritical characters; so far, 24 fonts (5 families) have been released.

# Legal matters

## Legal matters

Both Latin Modern and T<sub>E</sub>X Gyre packages are,  
of course, freely available:

license: the GUST Font License  
(open, legally LPPL)

maintainers: B. Jackowski and J. M. Nowacki, GUST

## Legal matters

Both Latin Modern and T<sub>E</sub>X Gyre packages are, of course, freely available.

For Latin Modern, the situation is clear. The situation of the TeX Gyre fonts is different and concerns have been raised (Ralf Stubner) whether it is formally correct to switch from the original GPL to the GFL/LPPL. There were several reasons behind the change, the most important of which was perhaps that LPPL addresses explicitly the problem of orphaning projects and provides a well-defined means for recovering from such situations.

Nevertheless, the problem is still vividly discussed and one of the possibilities considered is switching back to GPL.

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Recently, OTFs were improved and the most persistent bugs have been fixed, for example, a long-standing bug in cmmib5, reported by Richard Kinch already in 1995:



More details about fixes and changes can be found on the Latin Modern distribution web site:

<http://www.gust.org.pl/projects/e-foundry/latin-modern/>

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Plans for the future: we work on the improvement of hints and the structure of the OTF files; the most important, however, seems to be the extension and enhancement of math (so far, math fonts are available only in the Type 1 format); in the far future, we consider also providing support for Greek and Cyrillic alphabets.

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Currently released fonts are: **Bonum** (derived from Bookman; 4-font family, v. 1.001, January 2007), **Heros** (derived from Helvetica; 8-font family, v. 991, February 2007), **Pagella** (derived from Palatino; 4-font family, January v. 1.011, January 2007), **Schola** (derived from Century Schoolbok; 4-font family, v. 0.996, January 2007), **Termes** (derived from Times; 4-font family, v. 1.011, January 2007).

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Plans for the future: preparing the remaining fonts (**Adventor** derived from Avantgarde, **Cursor** derived from Courier, and **Chorus** derived from Zapf Chancery); then improving small caps, oldstyle figures, Greek symbols, hinting, etc.; math companion, however, will be perhaps the next important step.

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Note that the Cyrillic glyphs, added to the URW++/Ghostscript fonts by Valek Filippov, are of moderate quality (actually, they are unfinished)—we retained them since there are no protests against their presence in the URW++/Ghostscript collection.

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As was mentioned, the source for the work is the collection released by URW++ and distributed with Ghostscript (ver. 8.11).

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Unfortunately, the original Adobe names cannot be retained due to copyrights and registered trademarks issues. URW names, on the other hand, are somewhat incongruous. Therefore we decided to coin new names, mnemonic to some extent, consistent within the project.

## The names of the game

Origin	PS name	TFM name (kernel)
ITC Avant Garde Gothic	TeXGyreAdventor	qag
ITC Bookman	TeXGyreBonum	qbk
Courier	TeXGyreCursor	qcr
Helvetica	TeXGyreHeros	qhv
Palatino	TeXGyrePagella	qpl
Times	TeXGyreTermes	qtm
New Century Schoolbook	TeXGyreSchola	qcs
ITC Zapf Chancery	TeXGyreChorus	qzc

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ITC Zapf Chancery	TeX Gyre Chorus

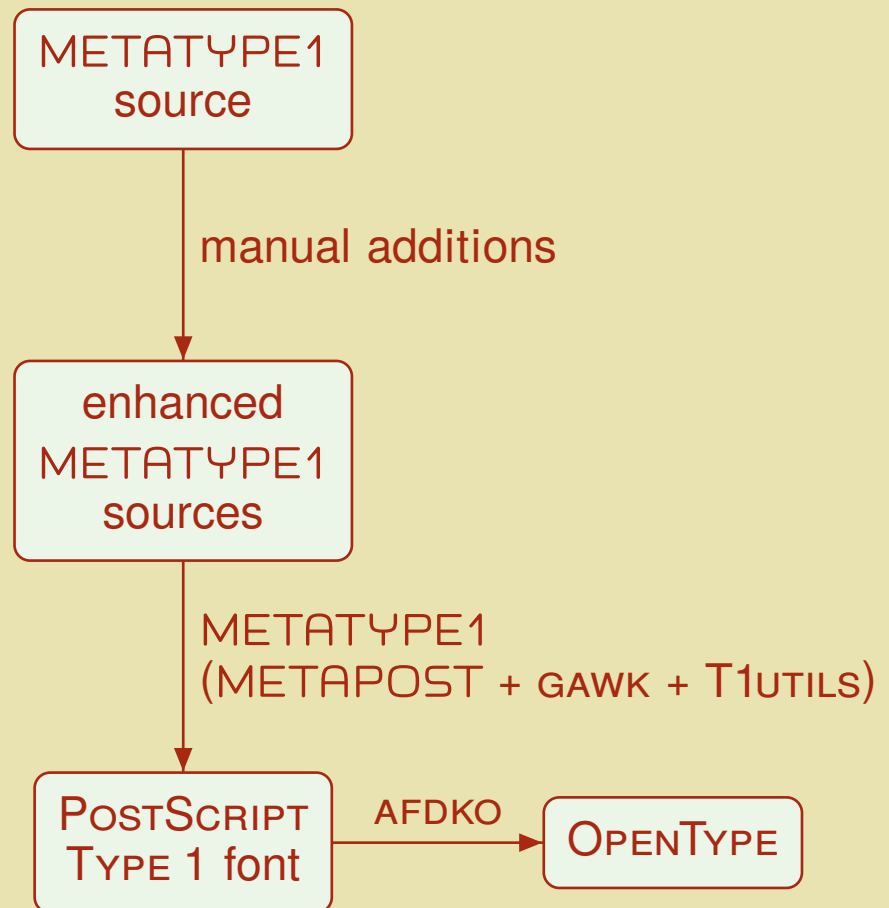
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T<sub>E</sub>X Gyre fonts are being created using the same technological line which we used to Latin Modern fonts.

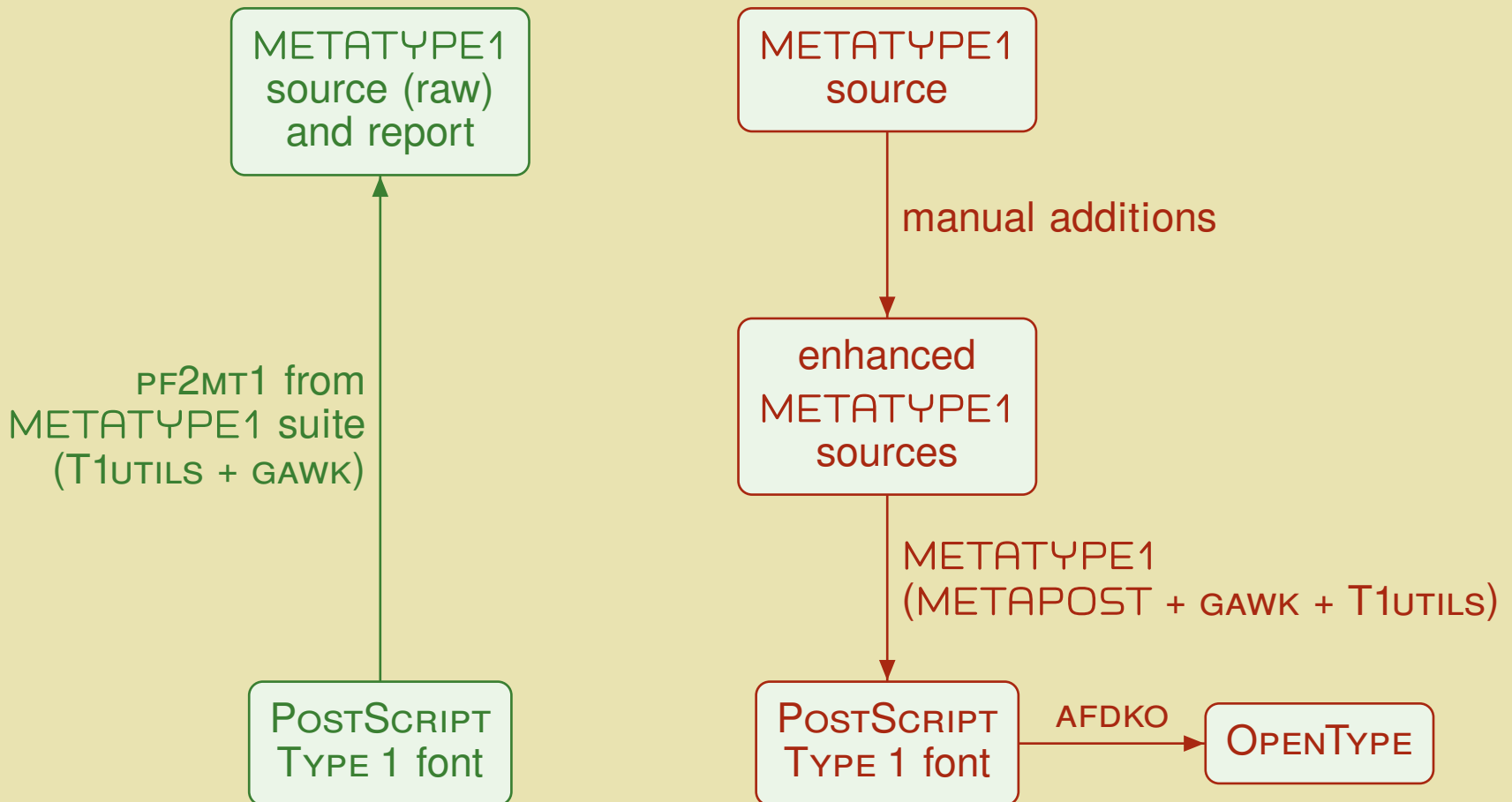
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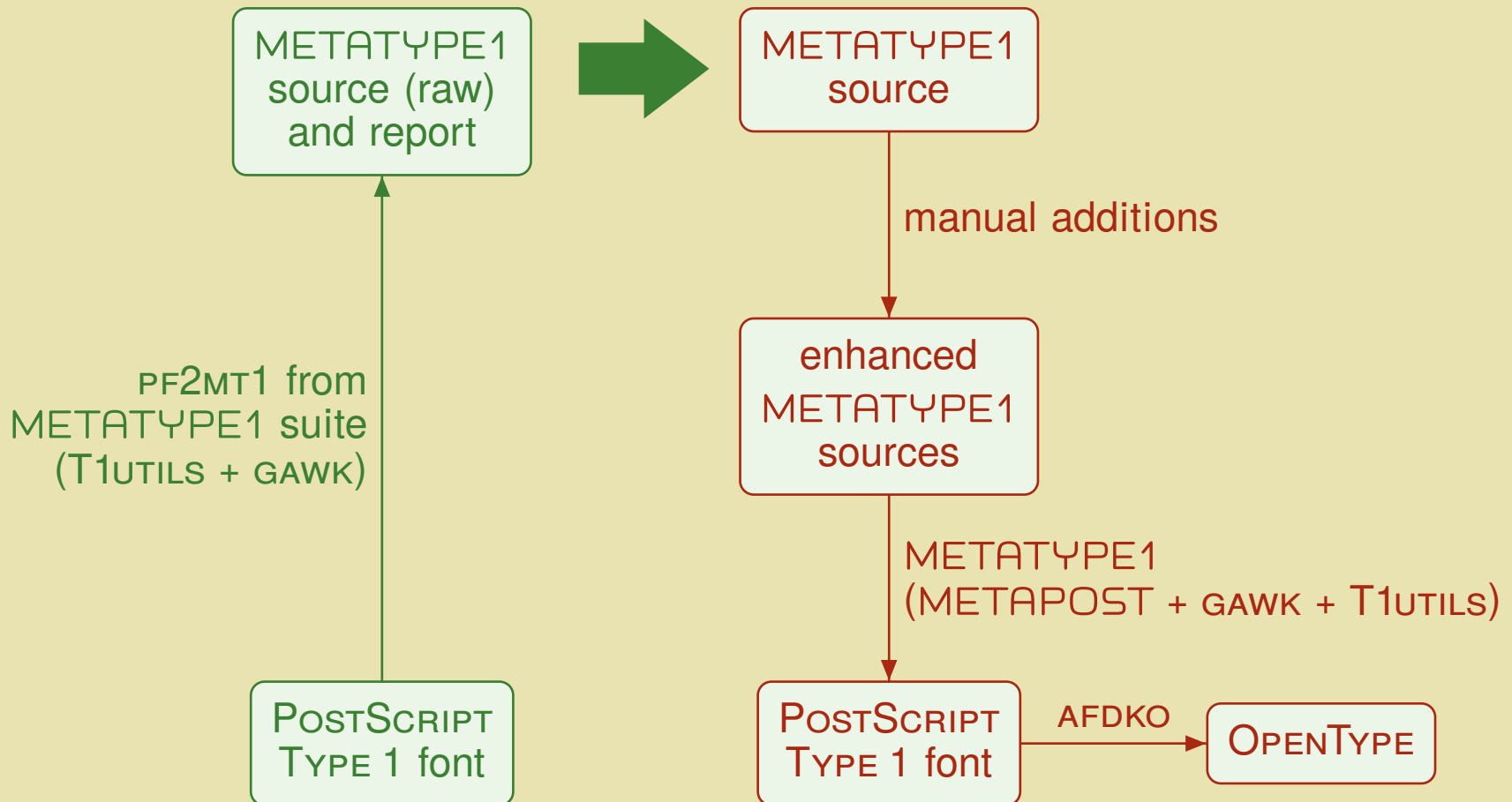
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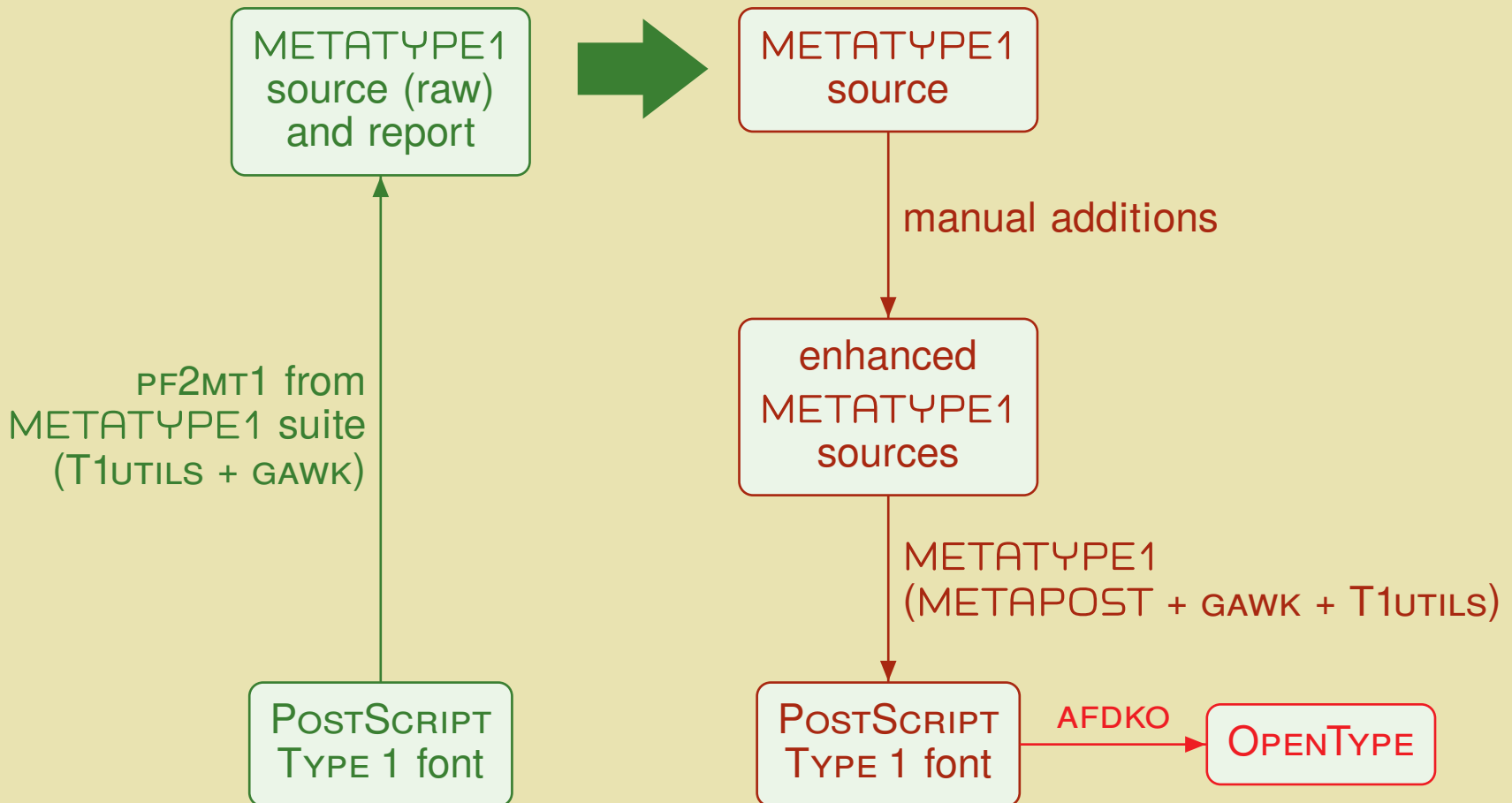
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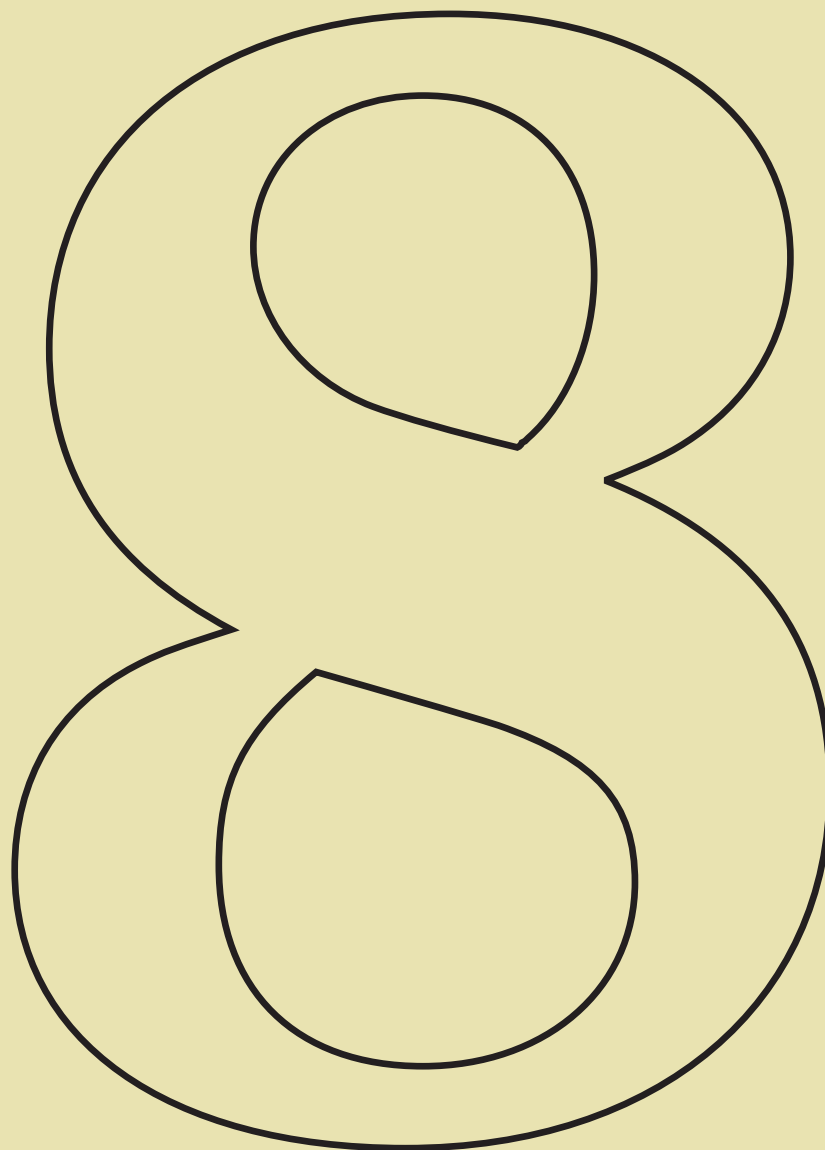


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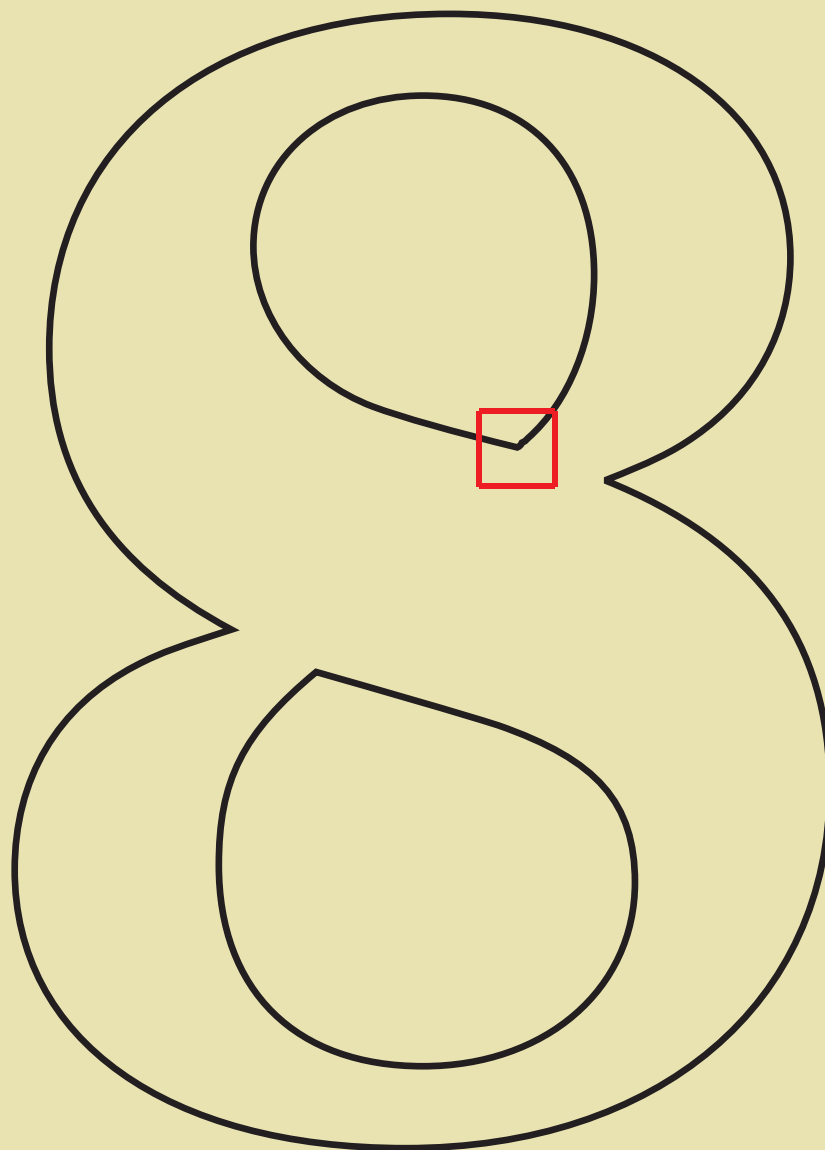
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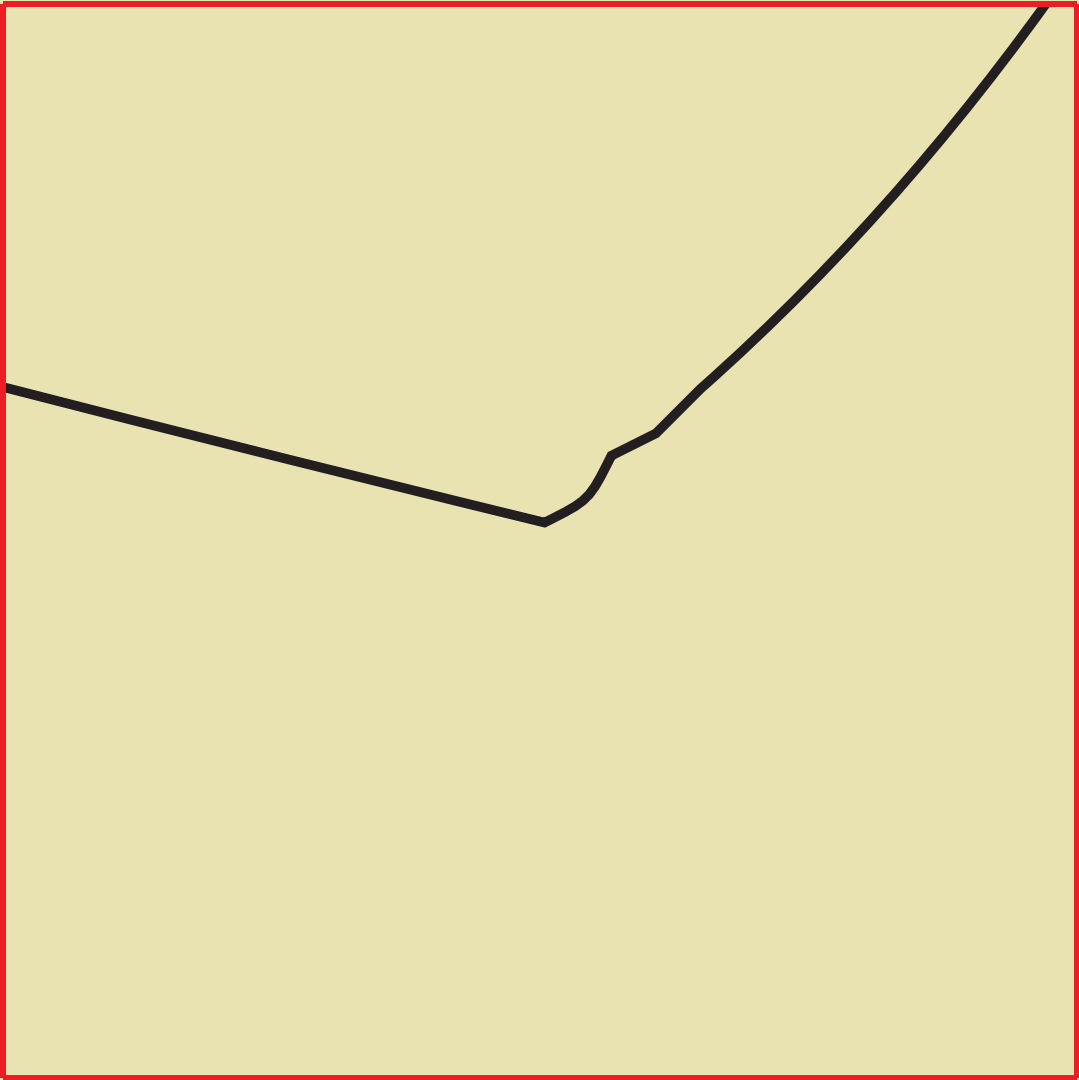
## An example: eight from Century Schoolbook Bold



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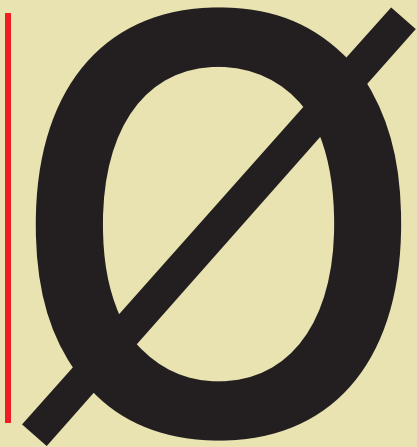
# An example: oslash from URW Nimbus Sans L

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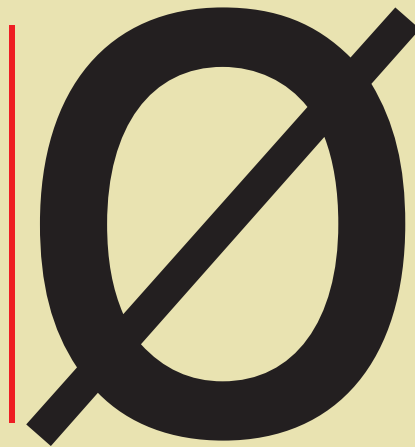
We do our best to keep the T<sub>E</sub>X Gyre metric data consistent with Adobe's canonical AFMs, but not always it is advisable or feasible.

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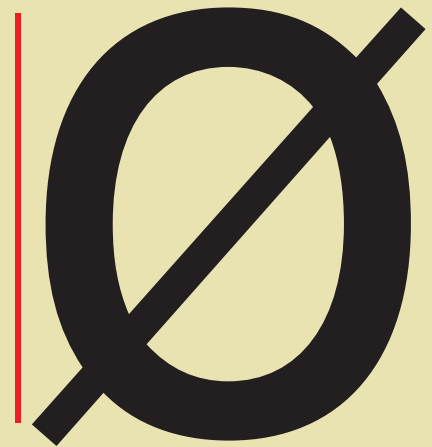
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T<sub>E</sub>X Live: uhvr8a



T<sub>E</sub>X Gyre: qhvr



GS Fonts: n019003l

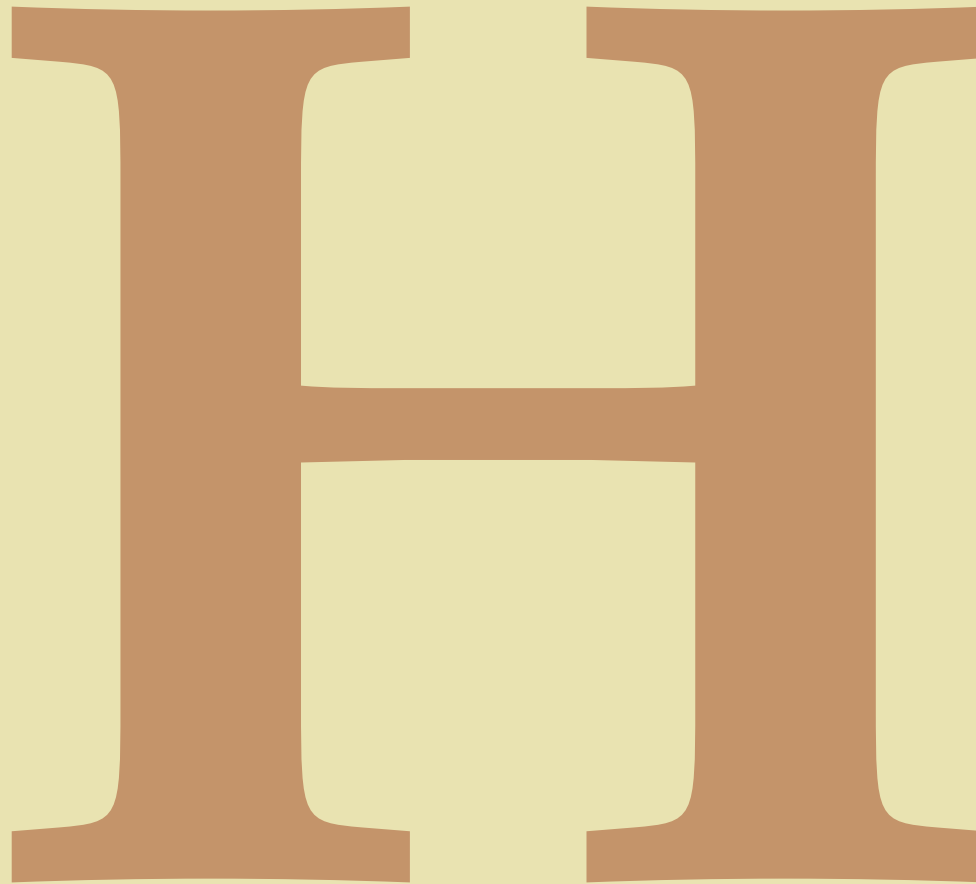
## A gulp of statistics

font name	total number of common* glyphs	number of touched glyphs	total number of nodes	number of touched nodes
qbkr	552	395 (72%)	24386	9105 (37%)
qbkb	552	374 (68%)	23481	6774 (29%)
qcsr	552	453 (82%)	28416	10236 (36%)
qcsb	552	384 (70%)	28863	5426 (19%)
qhvr	552	287 (52%)	12267	3562 (29%)
qhvb	551	275 (50%)	12367	3719 (30%)
qhvc	551	280 (51%)	13444	3433 (26%)
qhvcb	551	285 (52%)	13251	3374 (25%)
qtmr	552	343 (62%)	25300	5083 (20%)
qtmb	552	332 (60%)	22748	4676 (21%)
qplr	552	453 (82%)	29238	6588 (23%)
qplb	552	469 (85%)	29364	7988 (27%)

\* The number of glyphs in the GS fonts:  $\approx 550$  per font; in the T<sub>E</sub>X Gyre fonts:  $\approx 1200$ .

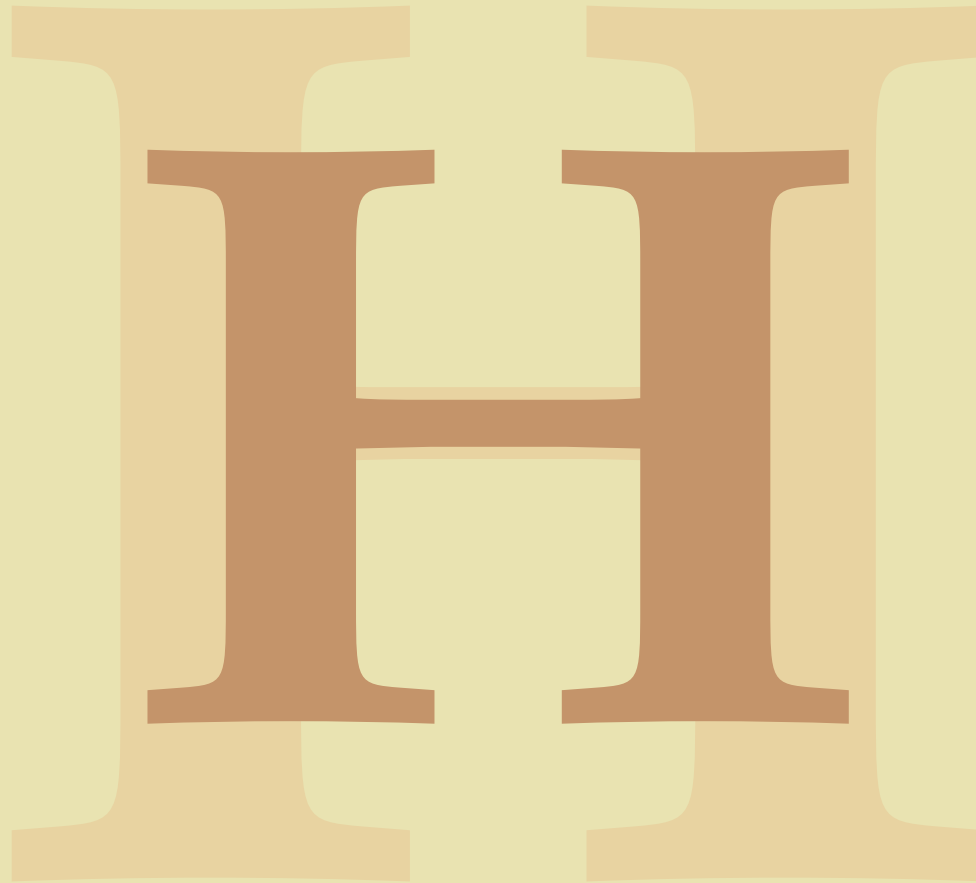
## Another example: creating small caps (Pagella Bold)

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The procedure consists of two steps:

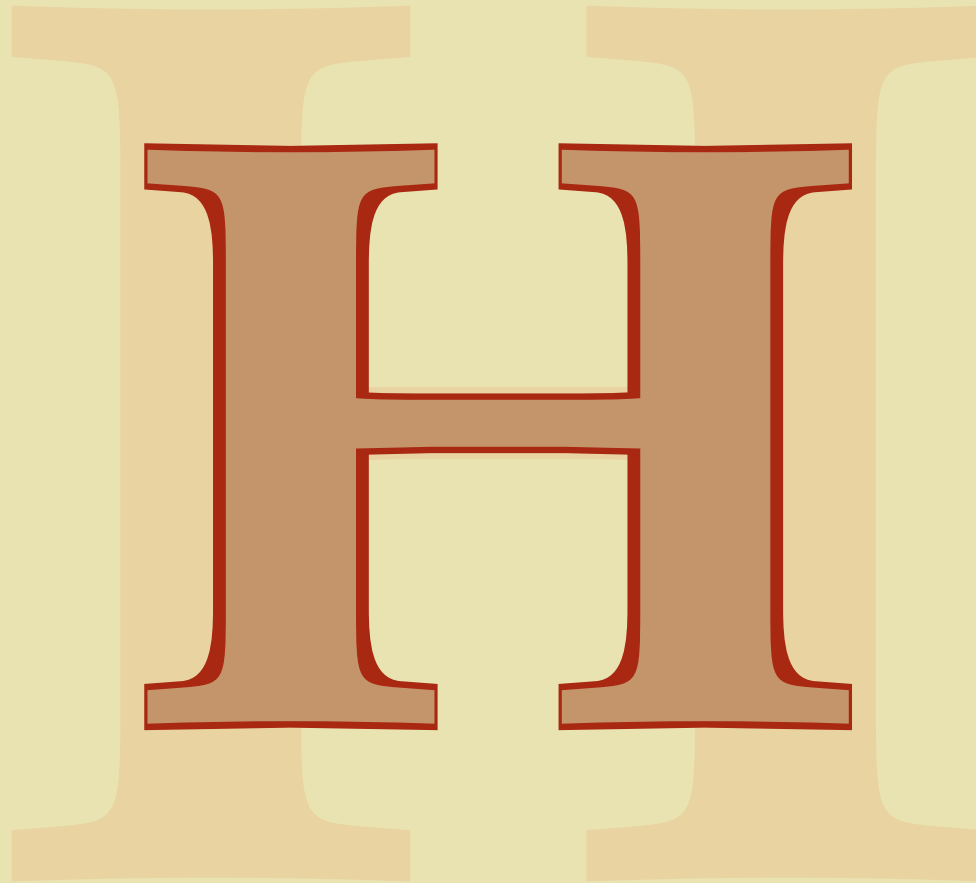
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The procedure consists of two steps:

1. non-uniform scaling

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The procedure consists of two steps:

1. non-uniform scaling and 2. thickening the outline using asymmetric pens.

## Another example: creating small caps (Pagella Bold)



The parameters of the pens are chosen in such a way that the stems of lowercase letters and small caps coincide.

## Another example: creating small caps (Pagella Bold)

```
1. beginglyph(_h.sc);
2.   save p; path p[];
3.
4.   restore_glyph("H")(p);
5.   local default_nib=sc_cir_nib;
6.   pen_stroke(
7.     tip(sc_var_nib,1)(0,1,6,7,9,10,19,20,22,23,28,29,31,32,41,42)
8.     nib(sc_flat_nib)(3,4,12,13,16,17,25,26,34,35,38,39)
9.     ) (p1)(p2);
10.  endlocal;
11.  p3:=p2.r shifted (0,1/2h_nib);
12.  p3:=correct_dish((7,8,9),(20,21,22),(29,30,31),(42,43,0))(p3);
13.
14.  Fill p3;
15.
16.  path_labels.ulft(p3);
17.  set_hstem p3, (21,24), (27,30), (15,36);
18.  set_vstem p3, (3,39), (34,26);
19.  standard_alt_hsbw("h.sc")(1/2h_nib_var,1/2h_nib_var);
20. endglyph;
```

The code is not particularly complex...

Font species: T<sub>E</sub>X Gyre Bonum (v. 1.001)

TAŹÓHąmburğefónśź 0123456789

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Font species: T<sub>E</sub>X Gyre Heros (v. 0.991)

TAÓHamburgefóńśź 0123456789

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## Font species: T<sub>E</sub>X Gyre Heros Condensed (v. 0.991)

TĄÓHąmburğefónśż 0123456789

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Font species: T<sub>E</sub>X Gyre Pagella (v. 1.011)

TAŃÓHąmburğefónśź 0123456789

TAŃÓHĄMBURGEFÓNŚŹ 0123456789

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***TAŃÓHĄMBURGEFÓNŚŹ 0123456789***

Font species: T<sub>E</sub>X Gyre Schola (v. 0.996)

TAÓHamburgefónsz 0123456789

TAÓHAMBURGEFÓNŠZ 0123456789

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Font species: T<sub>E</sub>X Gyre Termes (v. 1.011)

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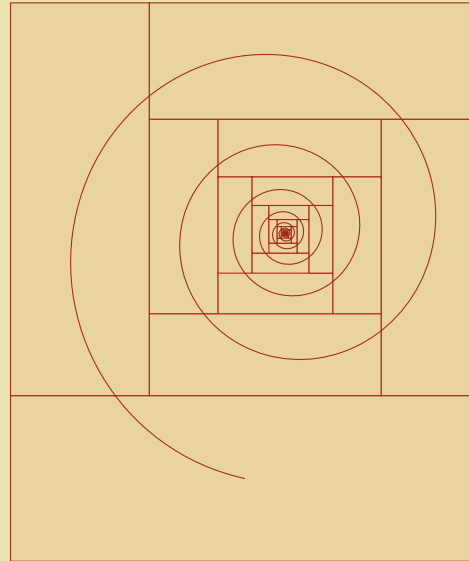


drawing by Miroslaw Gryń

The *Latin Modern* project is supported by T<sub>E</sub>X Users Groups, in particular, by the Czechoslovak T<sub>E</sub>X Users Group CS TUG, the German-speaking T<sub>E</sub>X Users Group DANTE e.V., the Polish T<sub>E</sub>X Users Group GUST, the French-speaking T<sub>E</sub>X Users Group GUTenberg, the Dutch-speaking T<sub>E</sub>X Users Group NTG, and—last but not least—TUG.

## The T<sub>E</sub>X Gyre fonts are available from:

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Welcome to EuroBachot<sub>E</sub>X 2007:  
**Paths to the Future**  
April 28th until May 2nd, 2007