

# The `oldgerm` package for use with L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>\*

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## 1 Introduction

This file defines commands to use the old German fonts for Fraktur, Schwabacher, and Gothic designed by Yannis Haralambous. To access them, use the package `oldgerm` in a `\usepackage` command.

`\gothfamily` This package option defines the commands `\gothfamily`, `\frakfamily` and  
`\frakfamily` `\swabfamily` to switch to the corresponding font families (thus these commands  
`\swabfamily` behave similar as `\sffamily` or `\ttfamily`). Since these families only consist of  
one shape in one series, commands like `\bfseries` or `\itshape` have no effect when  
typesetting in these families. However, size changing commands are honoured.

`\textgoth` In addition the package defines the corresponding font commands with argu-  
`\textfrak` ments, that is `\textgoth`, `\textfrak`, and `\textswab`.  
`\textswab`

### 1.1 Important notes

These fonts are currently encoded in a way that does not correspond to any standard encoding (for this reason they are classified by NFSS as U encoded. In addition the fonts uses special ligatures with the character " to access accents and sharp s. For this reason commands accessing special characters like `\ss` or accents like `\"` will not really work directly when used with these fonts. You can either declare them for the U encoding manually, e.g., by saying something like

```
\DeclareTextCommand{\"}{U}[1]{\UseTextAccent{OT1}#1}  
\DeclareTextCompositeCommand{\"}{a}{"a}  
\DeclareTextCompositeCommand{\"}{u}{"u}  
...  
\DeclareTextCommand{\ss}{U}{"s}
```

and so on, or you use the ligatures directly. However, declaring composite characters for the U encoding means that they are declared for every font with U encoding which might be totally inappropriate for other fonts.

Please also note that while "a, etc. looks very much like the convention used by the `german` or `babel` packages the internal mechanism to produce the accents

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\*This file contains a reproduction of an article by Yannis Haralambous

is completely different. These packages define "a to produce something like \a which isn't defined for the U encoding, while "a without the package is interpreted as a ligature generating the accented letter "ä" in the font. Using these packages with these fonts will therefore produce some undesired effects.

Finally please note that there might be some strange hyphenations in the German examples of the article by Yannis below. The reason is that this document is typeset with standard English hyphenation patterns to ensure that it does work everywhere (this could be improved).

The following section is a reproduction of an article by Yannis about these fonts which was presented at the Cork '90 T<sub>E</sub>X conference and was later published in *TUGboat* 12#1, pages 129–138. It is complete except for the picture of Emanuel Breitkopf and the appendices which have been left out.

The sample code in the section on initials refers to a command \yinit to select the yinit font. In L<sup>A</sup>T<sub>E</sub>X one could define this command, for example, like this:

```
\newcommand{\yinit}{\fontencoding{U}\fontfamily{yinit}\selectfont}
```

or perhaps including a \fontsize command, if one wants control over the size of the letters.

## 2 Typesetting old german: Fraktur, Schwabacher, Gotisch and Initials

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Typesetting in the old style, with the corresponding types, besides being an art, is also a real pleasure. Metafont allows the creation of faithful copies of these types and T<sub>E</sub>X gives the possibility of using them in the most traditional manner. In this spirit, the necessary fonts and macros to typeset in the old german types Gotisch (also called Textur), Schwabacher and Fraktur are pre-

sented in this paper, together with an historical introduction to each of them. Also, a set of initials is described. Rules for typesetting in these types are given, together with extracts from the original sources.

*This paper is dedicated to  
D. E. Knuth.*

This article shows the first results of a longterm project on reconstructing old types and typesetting following the old rules, with  $\text{\TeX}$  and *Metafont*. The work presented in this paper has been done on a Mac SE/30 with *OzTeX* and *MacMetafont*.

## 2.1 General Introduction to the Project: What's the Use of Reconstructing Old Types

Old types are beautiful. Until now, one could find either modernized copies of them (for decorative use) or facsimiles of historical books. With  $\text{\TeX}$  and *Metafont* at last we have the possibility to approach these types in the manner — and with the care— of a *collectionneur*. Since there is no commercial scope, no compromise needs to be made in the creation of the fonts. And once the *Metafonting* is done, we can bring the fonts back to life, by using them in typesetting texts, new or old ones.  $\text{\TeX}$  and *Metafont* are strong enough to achieve a faithful reproduction of old works, and what's more, delicate enough to allow a personal tone and new ideas. Thanks to D. E. Knuth's work, typesetting becomes an interpretative art at the reach of everybody. And you can believe me, it is the same pleasure to read (resp. typeset) Goethe's poems in Breitkopf's Fraktur as to hear (resp. play) Mozart's Sonatas on a Stein's Pianoforte.

## 2.2 Old German Types Gotisch

Gutenberg chose the bible as his first work for merely commercial reasons: only the churches and monasteries could afford to buy quantities of books. Con-

sequently, the first types he created had to imitate manuscript characters, to be able to concurrence the beautiful manuscript bibles produced by the monasteries themselves. This explains the fact that Gutenberg's font is so elaborated. A similar situation arose with Venetian greek renaissance types, which had to imitate alexandrinian and byzantine greek handwriting: hundreds of ligatures were used.

Gutenberg's font had 288 characters: besides the 25 uppercase (there is no distinction between I and J) and 27 lowercase (there are two kinds of s), all the others are variant types, accented characters and ligatures.

The font *ygoth* presented here, is not an exact copy of Gutenberg's font. It merely follows Gutenberg's guidelines on lowercase characters and selects the uppercase ones from different 15th century types. Please note that these uppercase characters are not suitable for "all capitals" typesetting. Here are the basic upper and lowercase characters:

A B C D E F G H

I K L M N O P Q R

S T U V W X Y Z

a b c d e f g h i j

k l m n o p q r

s t u v w x y z

For all old german types there is no distinction between I and J; also there are two kinds of s: the middle and initial "long s" and the final "short s"

l s

In composite words, a short s is used when some component of the word ends

on s:

**Ausgang**, but **Anstand**.

Since it's almost impossible for a computer to know if some s is long or short, you have to do it manually: type **s**: for a short s, like in **Aus:gang** or **Alles:**.

The following ligatures are part of the font:

æ ha he ho ch ch̄

ua ue wo ha he ho

ff fi ff̄ ff̄ ij ll

œ pa pe po pp qq

ff̄ fī ft̄ f̄ ha he hu

Beside the ones shown beyond, there are variant forms

ū ū ū

at positions '052, '057, '075 of the font. Because of the many ligatures, there is no place left for special characters (I used only 128-character fonts); you'll have to switch to CM for #, \$, %, &, \*, +, = etc. For the vowels a, e, o, u with Umlaut and for the ß, I followed Partl's [1988] convention: just type "a, "e, "o, "u, "s (ë is used in flemish) to obtain

ā ē ö ū ſ̄.

The difference with Partl's approach is that in our case "a, "e, etc are ligatures. Since ß historically comes from the ligature s+z (ß is called es-zet), by typing either "s or sz, you get the same output.

In Appendix A you can find a sample of the font; it is an extract of Luther's bible (1534), in the original orthograph.

### 2.3 Schwabacher

The name comes from Schwabach, a little german town on the south of Nürnberg. According to Updike [1927], *in fifteenth century German gothic or*

*black-letter fonts, a differentiation of type-faces began to show itself, as we have seen, in the last twenty years of the century, between types that were somewhat pointed and a rounder, more cursive gothic letter, with certain peculiarities —the closed a, looped b, d, h, and l, and a tailed f ans s. The first type was called "fraktur." The second was ultimately known as "schwabacher."* Schwabacher was in some extend the "boldface" font, compared to the usual Fraktur. The font presented here is called yswab; it is based on 18th century types. Nevertheless, some characters (like the "hebrew-like question mark ?) have been taken from a contemporary book: A. Wikenhauser [1948], *Das Evangelium nach Johannes*, where John's text is written in Schwabacher and comments in Fraktur. Here are the basic upper and lowercase characters:

A B C D E F G H I J K L M N  
O P Q R S T U V W X Y Z  
a b c d e f g h i j k l m n  
o p q r s t u v w x y z.

The following ligatures are included in the font:

ff, ff̄, ff̄, ft̄, f̄

For the vowels a, e, o, u with Umlaut, you have the choice between two forms: for the older one (a small "e" over the letter) you need to type a \* + vowel combination, and for the newer one a " + vowel combination. So, by typing \*a, \*e, \*o, \*u, "a, "e, "o, "u you get

ā ē ö ū ā ē ö ū

respectively.

### 2.4 Fraktur

The first Fraktur type was created by Johann Schönsperger in Augsburg to typeset the book of prayers of Kaiser

Maximilian (1513). Some years later, Hieronymus Andreae created a new Fraktur type, used by Dürer for the printing of his theoretical works. In the 17th century, Fraktur had a period of decline. It was only in the fall of the 18th century that some progressive typographers like G. I. Breitkopf and J. F. Unger gave Fraktur a new breath, by creating new fonts with the aesthetic standards of their time. Especially Unger's font seems to lay more in the 19th century spirit.

Gottlob Immanuel Breitkopf (1719–1794) lived in Leipzig. He travelled a lot, studied french, english and other foreign fonts and wrote himself an article (Breitkopf [1793]) on the situation of typographers and typography in Leipzig at his time. In 1754 he was the first to use removable types to typeset music. His name is familiar to all musicians and friends of music, because of the famous Breitkopf & Härtel editions of complete works of Bach, Beethoven etc.

After Breitkopf, the “official” version of Fraktur (newspapers and official documents) didn't evolved very much. In the 19th century, with all its social—and artistic—turbulences many decorative Fraktur types have been made, most of them are monstrous (for example see Knebel [1870]). A final renovative effort has been made in the twenties of our century by artists like Walter Tiemann and others. Unfortunately, the destructive trend for uniformisation of nazism didn't left much place for aesthetic improvements or changements.

Texts like *Warum deutsche Schrift?* (Why german type?) by G. Barthel [1934],

and *Heraus aus der Schriftverelendung!* (No more degenerate writing!) by T. Thormeyer [1934] (...die Rundungen haben nichts mit dem deutschen Spannungsbedürfnis gemeinsam. Das Schwelgen in abgerundeten Formen kann man andern Nationen überlassen...) show that nazists tried to use Fraktur as a symbol of the german nation. But—an historical paradox—it was the nazis themselves who abolished Fraktur in 1941<sup>1</sup>. In a not too old edition of the Brockhaus, one can find the sentence “*Die nationalsozialist. Regierung ließ die Fraktur 1941 aus Zweckmäßigkeitgründen von Amts wegen abschaffen. Ob sie damit eine Entscheidung traf, die ohnehin im Zuge der Entwicklung lag, ist schwer zu beurteilen...*” (it is hard to say if the nazi decision of abolishing Fraktur was really in the sense of development...); there is a certain nostalgia in these words.

Today Fraktur is used mainly for decorative purposes (a nice counterexample is the dtv pocket edition of Mozart's correspondence: his letters are in Fraktur and the comments in Antiqua). Also there are methods for the old german handwriting (Süterlin) which also include Fraktur (for example *Wir lesen deutsche Schrift*, bei A. Kiewel et al [1989]).

Let's return now to  $\text{\TeX}$ : the font `yfrak` which I propose is in the old Breitkopf style. Here are the basic upper and lowercase characters

$\text{\AA}$   $\text{\B}$   $\text{\C}$   $\text{\D}$   $\text{\E}$   $\text{\F}$   $\text{\G}$   $\text{\H}$   $\text{\I}$   $\text{\K}$   $\text{\L}$   $\text{\M}$   $\text{\N}$   
 $\text{\O}$   $\text{\P}$   $\text{\Q}$   $\text{\R}$   $\text{\S}$   $\text{\T}$   $\text{\U}$   $\text{\V}$   $\text{\W}$   $\text{\X}$   $\text{\Y}$   $\text{\Z}$   
a b c d e f g h i j k l m n  
o p q r s t u v w x y z.

It contains the same ligatures and

<sup>1</sup>There seems to have been some secrecy around this decision of the nazis. The only data I could find is a short and cryptical reference in the 1941 DIN-booklet on typographic standards: “Bekanntgebung II EM 8408/41 vom 26 Juli 1941 des Reichswirtschaftsministers an den Deutschen Normenausschuß”. I would be very obliged if some reader could provide me with more informations.

Umlauts as `yswab`. The symbols  $\text{ſ}$  (which means “etc”) and  $\text{ſ}$  (an attempt to differentiate I and J) are in font positions `'044` and `'100` respectively. You can find a sample of the font in Appendix B; it is the beginning of the second part of Carl Philipp Emanuel Bach’s treatise on the true art of playing the keyboard (meant is the harpsichord and/or clavichord) “*Versuch über die wahre Art das Clavier zu spielen*” [1762].

## 2.5 Initials

The chancery initials which you can see on Appendix B and C are a revival of baroque designs. This makes them suitable for old and new texts as well. They form the font `yinit`. You have the choice of creating characters with depth zero, or characters with height equal to `cap_height` of `cmr10` (with the corresponding magnification) and the biggest part of the character under the baseline. For this there is a boolean parameter `zero_depth` in the `yinit.mf` parameter file. To typeset the initial D of Appendix B, I used the macro `\yinitial{D}` as follows (with `zero_depth:=false`)

```
\def\yinitial#1
{\hangindent=2.54cm
\hangafter=-4
\hskip-3.24cm
\lower-2.7mm
\hbox{\yinit #1}
\hskip1.5mm}
```

Of course all these parameters will need some adjustment, according to the interline skip and the textfont you are using. Note also that `\par` stops the execution of `\hangafter`; you should better use `\hfill\break\indent` instead.

## 2.6 Typesetting Rules

In the following text, taken from the Duden (Mülsing and Schmidt [1919]) many fine points of typesetting in Fraktur are explained. The essential points are the following: 1) don’t use ligatures in latin antiqua words, use them in french antiqua and in french Fraktur; 2) in a composite word, do not use ligatures between adjacent letters of two components 3) the antiqua  $\text{ß}$  is to be used in german words and names regardless of the language; 4) the latin “etc” is to be translated as `ufw.` and its older form  $\text{ſ}$  should not be used anymore; 5) concerning foreign words in german, use Fraktur when the word has been “germanized”, and else antiqua; 6) the hyphen should always be in Fraktur, except when it appears between two antiqua words; 7) in 1879, Daniel Sanders proposed as an alternative to  $\text{ſ}$  for the letter J, it would be nice if the authorities recognize it.

### Einzelvorschriften für den Schriftsatz

In diesem Abschnitte stellen wir einige Einzelvorschriften zusammen, deren allgemeine Befolgung für die Einheitlichkeit bei der Herstellung von Drucksachen sehr wünschenswert wäre.

**Ligaturen  $\text{Æ}$ ,  $\text{æ}$ ,  $\text{Œ}$ ,  $\text{œ}$  statt  $\text{Ae}$ ,  $\text{ae}$ ,  $\text{Oe}$ ,  $\text{oe}$ .** In lateinischen Wörtern sind die Ligaturen nicht anzuwenden, z. B. Caelius mons, Asa foetida. In französischen Wörtern, die im deutschen Satz verstreut vorkommen, muß, wie im französischen Satz überhaupt, stets  $\text{Œ}$  und  $\text{œ}$  gesetzt werden, z. B. Œuvres, sœur. Selbst bei Fraktursatz darf auf das kleine  $\text{æ}$  nicht verzichtet werden, z. B. Hörst’æuvre.

**Sonstige Ligaturen.** In Wortverschmelzungen wie Schiffahrt, Schnelläufer, alliebend, d. h. also in Wörtern, die von drei gleichen Mitlauten einen ausgestoßen haben, ist die Ligatur anzuwenden, wenn sie in der betreffenden Schriftgattung vorhanden ist.

Die Ligatur ist ferner überall da anzuwenden, wo sie die sprachliche Richtigkeit nicht stört, z. B. *benutzen*, *abflauen*, *Billard*, nicht aber in einfachen Zusammensetzungen wie *entzwei*, *Kaufleute*, vielleicht.

#### Der Buchstabe *ß* in fremdsprachlichem Satz.

Wenn aus einem Deutschen Namen, in dem *ß* vorkommt, durch Anfügung einer lateinischen Endung ein lateinisches Wort gebildet wird, so bleibt das *ß* erhalten, es erscheint also als *B* (in Antiqua). So wird z. B. aus *Weißenburg*: *Weißenburgensis* (der *Codex Weißenburgensis*). Ebenso wird *B* gesetzt, wenn deutsche Eigennamen mit *ß* in fremdsprachlichem Satz erscheinen, z. B.: *Monsieur Abmann a été à Paris. Ho trovato il Signor Große a Venezia.*

*usw.* — *I* — *etc.* Im deutschen Satz ist „und so weiter“ der amtlichen Vorschrift gemäß durch *usw.* abzukürzen, und zwar sowohl in Fraktur wie in Antiqua. Die Form *I*, die sich innerhalb der Lautschrift wie eine Hieroglyphe, wie ein Vertreter der Zeichenschrift, aufnimmt, ist veraltet und nicht mehr anzuwenden.

Die Form *etc* darf nur im Antiquasatz angewandt werden, wird aber besser durch *usw.* ersetzt. Für lateinischen Satz, also innerhalb lateinischen Textes, ist *etc.* selbstverständlich. Ferner sei erwähnt, daß die Franzosen und Engländer *&c.*, die Italiener *ecc.* und die Spanier *etc.* verwenden, und zwar setzen alle stets einen Bindestrich vor diese Abkürzungen, was im Deutschen nicht üblich ist.

#### Anwendung der Antiqua im Fraktursatz.

Um dem bisherigen Schwanken in der Wahl zwischen Antiqua und Fraktur ein Ende zu machen, empfiehlt es sich folgende Grundsätze zu beobachten:

1. Alle Fremdwörter romanischen Ursprungs, die nicht durch Annahme deutscher Biegung oder deutscher Lautbezeichnung als eingedeutscht erscheinen, setze man aus Antiqua, z. B. *en avant*, *en arrière*, *en vogue*, *in praxi*, *in petto*; *a conto*, *dolce far niente*; ferner Verbindungen wie *Agent provocateur*, *Tempi passati*, *Lapsus linguae*, *Agnus Dei*. Auch alle italienischen technischen Ausdrücke aus der Tonkunst, wie *andante*, *adagio*, *moderato*, *vivace*, setze man aus Antiqua. Die der lateinischen Sprache entflammenden Bezeichnungen *Dur* und *Moll* sind als eingedeutschte Hauptwörter aufzufallen und daher groß zu setzen, z.

B. *C*-*Dur*.

2. Wenn ein Fremdwort deutsche Lautbezeichnung oder deutsche Biegung annimmt oder mit einem deutschen Worte zusammengesetzt wird, so setze man es als Fraktur, z. B. *adagio*, aber: das *Adagio*, die *Adagios*; *a conto*, aber: die *Kontozahlung*; *dolce far niente*, aber: das *Dolcefarniente*.

#### Anwendung des Bindestrichs in Fraktursatz, der mit Antiqua vermischt ist.

Wenn in Fraktursatz bei Wortsammlungen der eine Teil der Zusammensetzung aus Antiqua gesetzt werden muß, so sind etwa vorkommende Bindestriche aus der Textschrift, also aus Fraktur, zu setzen, z. B. CGS-Maßsystem. Eine Ausnahme wird nur dann gemacht, wenn der mit dem Bindestrich schließende erste (Antiqua-) Bestandteil an das Ende einer Zeile oder in Klammern zu stehen kommt; in diesem Falle ist der Bindestrich aus Antiqua zu setzen. In besonderen Fällen kann auch eine Vermischung von Fraktur- und Antiquabindestrichen stattfinden, z. B. *Hoftheater-Corps-de-ballet*; denn innerhalb des aus Antiqua gesetzten Wortes müssen auch die Bindestriche aus Antiqua gesetzt werden.

#### *I* (Selbstlaut) und *J* (Mittlaut) in der lateinischen Druckschrift.

In der lateinischen Druckschrift wird zwischen dem Selbstlaut und dem Mittlaut *I* genau unterschieden, und zwar steht *I* ausschließlich für den Selbstlaut, *J* ausschließlich für den Mittlaut. Diese Unterscheidung machen alle neueren Sprachen. Daß die deutsche Druckschrift einen Unterschied zwischen *I* (Selbstlaut) und *J* (Mittlaut) nicht kennt, ist ein großer Mangel. Diesen Mangel zu beseitigen versuchte schon 1879 Daniel Sanders, indem er für den Mittlaut das Zeichen empfahl. Dieses Zeichen ist heute nur vereinzelt in Drucken zu finden, hat sich also nicht allgemein eingebürgert und ist auch nicht amtlich anerkannt worden. Es wäre sehr zu wünschen, daß auch in deutscher Schrift ein Unterschied zwischen *I* (Selbstlaut) und *J* (Mittlaut) geschaffen und von der zuständigen Behörde anerkannt würde, und zwar um so mehr, als er bei den kleinen Buchstaben sowohl in deutscher (*i*, *j*) wie in lateinischer (*i*, *j*) Schrift bereits seit langem besteht.

## 2.7 Availability

Following a tradition of my friend Klaus Thull, these fonts are in the public domain. They should be available at the Aston and Heidelberg archives. Also you can obtain them at my address. The status of this software is postcard-ware: each satisfied user could send me a nice local postcard for my collection.

## 2.8 References

Bach, Carl Philipp Emanuel. *Versuch über die wahre Art das Clavier zu spielen. Zweyter Theil, in welchem die Lehre von dem Accompagnement und der freyen Fantasie abgehandelt wird.* Berlin: G. L. Winter, 1762.

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## 3 The DOCSTRIP modules

The following modules are used in the implementation to direct DOCSTRIP in generating the external files:

driver	produce a documentation driver file
package	produce a package file
fd	produce a font definition file
Uyfrak	produce Yannis Fraktur
Uyswab	produce Yannis Schwabacher
Uygoth	produce Yannis Gothic
Uyinit	produce Yannis Initials

## 4 The implementation

### 4.1 The package

```
1 <*package>
\gothfamily We switch to the fonts using the \usefont macro since all such fonts are only
\swabfamily available in one series and one shape.
\frakfamily 2 \newcommand\gothfamily{\usefont{U}{ygoth}{m}{n}}
\textgoth 3 \DeclareTextFontCommand{\textgoth}{\gothfamily}
\textswab 4 \newcommand\swabfamily{\usefont{U}{yswab}{m}{n}}
\textfrak 5 \DeclareTextFontCommand{\textswab}{\swabfamily}
6 \newcommand\frakfamily{\usefont{U}{yfrak}{m}{n}}
7 \DeclareTextFontCommand{\textfrak}{\frakfamily}
8 </package>
```

### 4.2 The font definition files

#### 4.2.1 Yannis Schwabacher

```
9 <*Uyswab>
10 \DeclareFontFamily{U}{yswab}{}
11 \DeclareFontShape{U}{yswab}{m}{n}{
12 <10> <10.95> <12> <14.4> <17.28> <20.74> <24.88> yswab }{}
13 </Uyswab>
```

#### 4.2.2 Yannis Gothic

```
14 <*Uygoth>
15 \DeclareFontFamily{U}{ygoth}{}
16 \DeclareFontShape{U}{ygoth}{m}{n}{
17 <10> <10.95> <12> <14.4> <17.28> <20.74> <24.88> ygoth }{}
18 </Uygoth>
```

#### 4.2.3 Yannis Fraktur

```
19 <*Uyfrak>
20 \DeclareFontFamily{U}{yfrak}{}
21 \DeclareFontShape{U}{yfrak}{m}{n}{
22 <10> <10.95> <12> <14.4> <17.28> <20.74> <24.88> yfrak }{}
23 </Uyfrak>
```

#### 4.2.4 Yannis Initials

Since the `yinit` font does have a very special design size and one might have to scale it up or down to get characters in a size needed for some particular combination of body font size and leading we pretend that the font is available in any size (which in fact it is on most modern  $\text{\TeX}$  installations).

```
24 <*Uyinit>
25 \DeclareFontFamily{U}{yinit}{}
26 \DeclareFontShape{U}{yinit}{m}{n}{
27 <-> yinit }{}
28 </Uyinit>
```

The next line goes into all files and in addition prevents DOCSTRIP from adding any further code from the main source file (such as a character table).

29 **\endinput**