



# Overcoming Limited Access Issues with L<sup>A</sup>T<sub>E</sub>X: Online Reprints of Old Books

Yoshihisa Nagata

Faculty of Humanities, Fukuoka University  
Nanakuma 8-19-1, Jonan-ku, Fukuoka 814-0180, JAPAN  
ynagata@fukuoka-u.ac.jp

**KEYWORDS** Old German Scripts, PDF, Webapp

**ABSTRACT** The online publishing potential of L<sup>A</sup>T<sub>E</sub>X offers a possible solution to the problem of access to old and rare books. This paper demonstrates how L<sup>A</sup>T<sub>E</sub>X could be applied to rare editions of the nineteenth century “Grimms Fairy Tales”. Attention is drawn to the ability of L<sup>A</sup>T<sub>E</sub>X to accommodate Old German scripts, and by extension, other archaic typefaces in its font selection scheme. A khm package that I developed myself by integrating developments of Daniel Taupin, Walter Schmidt and Torsten Bronger is introduced, outlining its ease of use and range of option selections.

## 1 „Kinder- und Hausmärchen Gesammelt durch die Brüder Grimm“, zweite vermehrte und verbesserte Auflage, Bd. 1 u. 2, Berlin 1819

The famous „Kinder- und Hausmärchen“ (“Children’s and Household Tales”) of the Brothers Grimm—better known as “Grimms Fairy Tales”—, to be precise, the second edition of 1819, is one old book that could definitely be reprinted. Seven editions were issued during the lifetimes of the Grimms, in which stories were added or subtracted, texts were carefully rewritten and interpolated on all revisions. From these volumes, the final seventh edition of 1857 is mostly referred to as the source book when it comes to quoting Grimms fairy tales. As a consequence, the majority of “Grimms Fairy Tales” literature currently available—including adaptations, translations, and so on—is based on this final edition.

Despite the popular emphasis on this 1857 edition, the discipline of literary criticism attributes an importance to the second edition of 1819. Heinz Rölleke [3] emphasizes that the „Gattung Grimm“ (“Grimm Genre”)—the unique style and form of what is often regarded as the essence of the Grimms fairy tales—has been definitely established from this very second edition. Heinrich Heine borrows several folkloristic phrases from the “Grimms Fairy Tales”, uses them in his „Die Harzreise (1824)“ (“The Harz Journey”), and this Heine citation was based merely on the second edition.<sup>1</sup>

1. cf. Lothar Bluhm; Heinz Rölleke: Sprichwort und Märchen. In: „Redensarten des Volks, auf die ich im-

## 2 Old German Scripts

In fact the second edition of the “Grimms Fairy Tales” was reprinted in 1982,<sup>2</sup> so the argument that the book is difficult to obtain is not really very true. The reprint was done rather literally, apart from the normalization of marking concerned with direct speech passages, etc. It was however typeset in roman, instead of the original „Fraktur“ (a kind of Old German script), which might dissatisfy those pros and dilettanti who want to taste and appreciate a literary work as a whole, including its original typefaces. Well, do not worry! L<sup>A</sup>T<sub>E</sub>X can do it!!

Thanks to the splendid reproduction of Old German scripts—Gotisch, Schwabacher, Fraktur, and Baroque Initials—by Yannis Haralambous [2], you can typeset a document in such typefaces with T<sub>E</sub>X. Walter Schmidt [4] has further made a convenient L<sup>A</sup>T<sub>E</sub>X package yfonts to give easy access to these fonts. And blackletter1 by Torsten Bronger [1] provides virtual fonts for T1 encoding variants of the Haralambous’ Old German scripts that coordinate well with L<sup>A</sup>T<sub>E</sub>X2<sub>ε</sub>’s font selection scheme.

I developed a khm package myself. My intention was to typeset the second edition of „Kinder- und Hausmärchen“ as faithfully as possible, reflecting all typeface matters contained in the original. Since the khm has not been posted at CTAN yet, it would be enough just to comment here that the package has abstracted and compiled certain desired features from Daniel Taupin’s cmfrak [5], Walter Schmidt’s yfonts, and Torsten Bronger’s blackletter1 respectively in order to deal with “(old) German documents” particularly.<sup>3</sup>

## 3 Namazu & L<sup>A</sup>T<sub>E</sub>X: Search and Typesetting services on the Web

There is another advantage in digitally reprinting old books with L<sup>A</sup>T<sub>E</sub>X. You prepare a source file for L<sup>A</sup>T<sub>E</sub>X from the book you want to reprint, embedding minimum L<sup>A</sup>T<sub>E</sub>X commands and comments into it. Such a rendered source file is a simple text file, so it easily deals with any full text retrieval search program that runs on the web. Figure 1 and 2 show you how a search program Namazu [6] (means “cat fish” in Japanese) as a Perl-CGI works on the web [7].

Yes, it should be a basic and definite policy to be able to digitally reprint old books on the web, allowing readers access via a web browser over the Internet. It is not necessary to demand a working knowledge of L<sup>A</sup>T<sub>E</sub>X from every user. It is desirable that L<sup>A</sup>T<sub>E</sub>X stays in the background. The reprinting system contains the application tier in which Perl or PHP scripts are processed to generate dynamic web contents to

---

*mer horche*“. *Märchen – Sprichwort – Redensart. Zur volkspoetischen Ausgestaltung der Kinder- und Hausmärchen durch die Brüder Grimm*, S. Hirzel Verlag, Stuttgart/Leipzig 1997. In June 2005 the Grimms’ annotated reference copies of the „Kinder- und Hausmärchen“, including the second edition, were officially inscribed in UNESCO’s “Memory of the World” registry, which is dedicated to preserving the world’s documentary heritage.

2. *Kinder- und Hausmärchen. Gesammelt durch die Brüder Grimm*, Heinz Rölleke (Hrsg.), Bd. 1 u. 2, Nach der 2. verm. und verb. Aufl. von 1819, textkritisch rev. und mit einer Biographie der Grimmschen Märchen vers., Eugen Diederichs Verlag, München 1982.

3. khm contains two types of umlaut’s notation, follows the control sequences defined in [n]german, and [n]german options of babel. Old German ligatures have been accurately adjusted after *DUDEN Bd. 1* (German language Orthography and spelling Dictionary), too.

be served on the web, and the storage tier which stores full texts of the “Grimms Fairy Tales” as a database. L<sup>A</sup>T<sub>E</sub>X system offers search and typesetting services as well on the web [11].

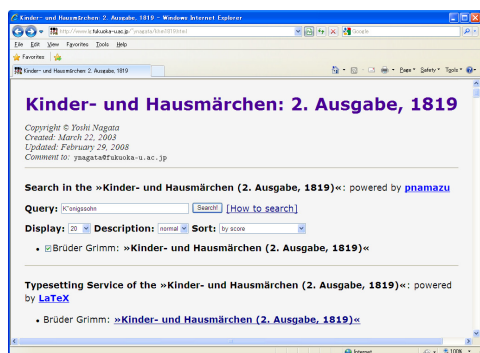


FIGURE 1. Full text search.

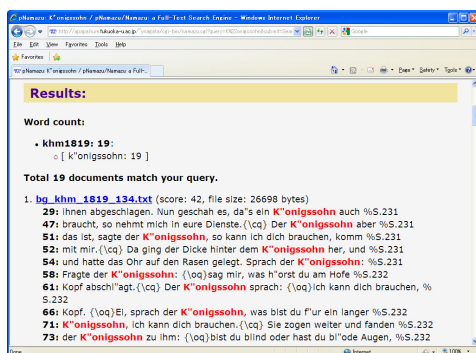


FIGURE 2. Search result.

The user interface of the search in the database of “Grimms’ Fairy Tales, second edition” is quite simple. All you have to do is put the word you are looking for in the text field “Query” and click the button “Search!”. A query form is not limited to a single term. Consult the linked page “How to search” for more information.

In the typesetting service page you find two slightly different user interfaces: one is for typesetting a document similar to the original, and the other lets you have a document formatted in various layouts. In either case you are guided in three steps toward getting a well typeset PDF file in Old German scripts. In the former, for example, your L<sup>A</sup>T<sub>E</sub>X source file is automatically numbered and prepared, so

1. set typeset options by checking radio buttons, namely select one of the paper sizes from a set of alternatives, choose the umlaut’s notation between normal type and old type of using superscript “e”, and select one or more than one of the “Grimms Fairy Tales” as the content to be typeset—you can even select a whole volume I or II respectively—,
2. select a program to run between “Create a PDF file from the source” and, in case you want to delete your files, “Remove related files from the server”,
3. and finally press the button “Create PDF / Remove related files”.

The result page will soon appear in another window and you will find your PDF there. See Figure 3 for what this user interface looks like as it is coded in PHP that executes the typesetting program pdf<sub>T</sub>E<sub>X</sub> in the background. Figure 4 shows the first page of a example PDF formatted in this manner as a result of a user sending their requests through a web browser.

You can choose another user interface as well. Perhaps one would like to have a particular tale or tales in various layouts instead of original. For example, you can specify: paper size, font size, umlaut types, and typeface for tale titles—either in letterspaced Fraktur, Schwabacher or Gotisch. Selection between one- or two-column output is an option, too. You can also issue a table of contents, display line numbers in every fifth line, set page headers, and embed hypertext links in the document.

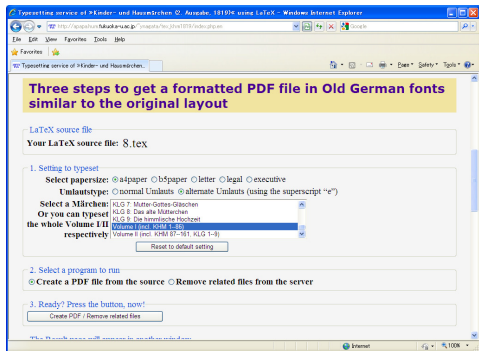


FIGURE 3. User interface 1.

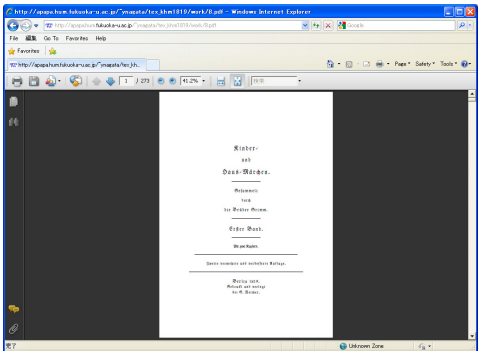


FIGURE 4. Title page of Vol. 1.

All these typesetting options are provided and realized by L<sup>A</sup>T<sub>E</sub>X's standard packages like komascript, german, multicols, lineno, hyperref, and—although not standard—khm. They are also controlled by PHP scripts to be automatically written in the source file which will then be compiled and formatted by pdfT<sub>E</sub>X to a PDF. Figure 5 and 6 let you have a look at two sights of this process.

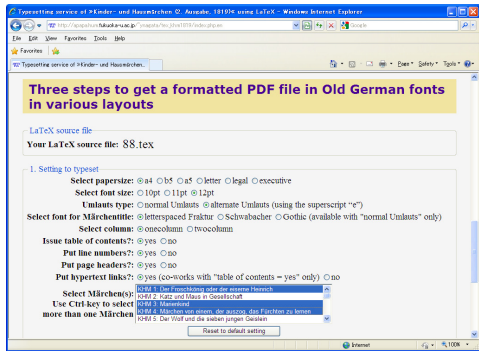


FIGURE 5. User interface 2.

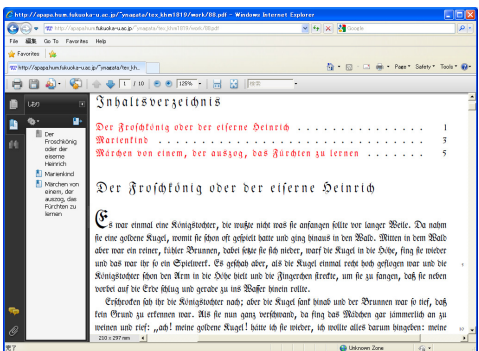


FIGURE 6. Generated PDF.

You need source as well as log file? If you wish, you can have both of them. They are also downloadable beside the produced PDF on the result page. You see a sample of a source file at Figure 7.

## 4 Acknowledgements

Finally I would like to briefly express my gratitude here to all those who always help me at T<sub>E</sub>X Forum [8], T<sub>E</sub>X Q & A [9], and T<sub>E</sub>X Wiki [10] which are industriously maintained by Haruhiko Okumura in Japan. And if I were allowed to cite only just a few names from them explicitly, I would especially thank the people named below, as I am so indebted to them for their having given me help, solutions, valuable hints, stimulating suggestions, and encouragement: Akira Kakuto, Toshio Oshima, Tomoaki Honda, Tetsumi Yoshinaga, Masatoshi Kuriyama, Toru Inagaki, Isao Yasuda, and not

```

c:/asterix-rumpelkammer/2009/texconf09/ajt/88.tex (emacs#MULTITEX -- Meadow-3.00-dev (KIKU))
File Edit Options Buffers EIScreen Tools Preview LaTeX Command Outline Ref Help

<->[X] 0+ 88.tex
\documentclass[paper=a4,fontsize=12pt,DIV=calc,twocolumn=false,tocleft,pagesize=pdfTeX]{scrartcl}
\usepackage{autotoc,nouppercase,headsepline}{scrpage2}
\usepackage[T1]{fontenc}
\usepackage{german,lettrine,multicol,calc,graphicx}
\usepackage[varumlaut]{khm}
\usepackage[right,module,pagewise]{lineno}
\usepackage[pdftex,bookmarks=true,bookmarksopen=true,bookmarksnumbered=true,bookmarkstype=toc,colorlinks=true]{hyperref}
\setheadwidth{textwidthmarginpar}
\pagestyle{scrheadings}
\ihead{}
\chead{}
\ohead{\headmark}
\ifoot{}
\cfoot{\pagemark}
\ofoot{}
\renewcommand{\thefootnote}{*}
\renewcommand{\contentsname}{Inhalts"verzeichnis}
\renewcommand{\sfdefault}{ntfrakvis}
\setkomafont{pagehead}{\sffamily}
\renewcommand{\maerchentitel}[1]{\section*{#1}\addcontentsline{toc}{subsection}{\sffamily#1}\markright{#1}}
\renewcommand{\untertitel}{\subsubsection}
\begin{document}
\thispagestyle{plain}
\tableofcontents
\begin{linenumbers}
\input bg_khm_1819_001_frakr.txt
\input bg_khm_1819_002_frakr.txt
\input bg_khm_1819_004_frak2.txt
\end{linenumbers}
\end{document}
--(Unix)-- 88.tex Bot (30,0) [0] (PDFLaTeX Ref Out1 Fill)----2009/9/21 Mon 14:16

```

FIGURE 7. Automatically generated L<sup>A</sup>T<sub>E</sub>X source file.

least Haruhiko Okumura for his long-term leadership in the Japanese T<sub>E</sub>X scene. I would also like to give my special thanks to my colleague Tim Corss for his careful reading of my paper and offering suggestions for improvement.

## References

1. Torsten Bronger, blackletter1. CTAN:fonts/gothic/blackletter1
2. Yannis Haralambous, *Typesetting Old German: Fraktur, Schwabacher, Gotisch and Initials*, TUGboat 12 (1991), no. 1, 129–138. <http://www.tug.org/TUGboat/Articles/tb12-1/tb31hara.pdf>
3. Heinz Rölleke, *Die Märchen der Brüder Grimm*, Artemis Verlag, München 1986.
4. Walter Schmidt, yfonts. CTAN:macros/latex/contrib/yfonts/
5. Daniel Taupin, cmfrak. CTAN:fonts/gothic/cmfrak/
6. Namazu. <http://www.namazu.org/index.html.en>
7. Search service. <http://www.lg.fukuoka-u.ac.jp/~ynagata/khm1819.html>
8. T<sub>E</sub>X Forum. <http://oku.edu.mie-u.ac.jp/tex/>
9. T<sub>E</sub>X Q & A. <http://oku.edu.mie-u.ac.jp/~okumura/texfaq/qa/>
10. T<sub>E</sub>X Wiki. <http://oku.edu.mie-u.ac.jp/~okumura/texwiki/>.
11. Typesetting service. [http://apapa.hum.fukuoka-u.ac.jp/~ynagata/tex\\_khm1819/](http://apapa.hum.fukuoka-u.ac.jp/~ynagata/tex_khm1819/)