

Support for typesetting greek in ConT_EXt

(cb-greek fonts)

Keywords

Maps, ConT_EXt, module, greek, cb-greek, font

Abstract

There are situations where one needs to typeset pieces of text in greek. Until recently there was no direct support to do this in ConT_EXt. With the integration of the module greek this has changed. The basics were built by Giuseppe Bilotta (Italy). The module uses a subset of the cb-greek fonts. The article describes the module and the way greek text is coded. A couple of short examples as well as a longer example of greek text are given.

Introduction

Some time ago there were questions concerning the support of the greek language in ConT_EXt. It appeared that Giuseppe Bilotta from Italy had already done some work on this. He prepared typescripts and a sample file which shows the use of the cb-greek fonts. After some cleanup, these typescripts were added to the alpha distribution of ConT_EXt and tested by users.

Description of the subset of the cb-greek font package

The cb-greek font package is a very large collection of font files available as Meta-Font – and also as type1 versions. In the archive of the type1 files (some 70 MB) there is a huge number of typefaces and font sizes included that one may never need. In cooperation with the T_EXlive team a medium subset hereof (some 14MB) was prepared. This version is also included on the T_EXlive media 2004 including the corresponding map file cbgreek.map.

The chosen subset of the cb-greek fonts comprises a rather complete series of fonts including serif, sans serif, roman, bold, italic, slanted, small capitals and monospaced variants. The included design-sizes are 8pt, 10pt and 12pt (see the annex for a sample text of each font).

Installation

ConT_EXt comes with the module greek included in the distribution. In order to make the cb-greek fonts available one has to install the cb-greek fonts from the T_EXlive media. The font-subset can be found on the DVD under /texlive2004/texmf-dist/fonts/tfm,pfb/public/cb. The necessary map file resides under /texlive2004/texmf-dist/fonts/map/dvips/cbgreek.map. Place the tmf- and pfb-files into your TDS at the appropriate place. Copy the map file to a place where T_EX can find it.

After running mktexlsr one should be ready for the first tests.

Use of the greek module

Invoking the greek module is done at the beginning of the document by saying:
`\usemodule[greek]`

After this two commands are available by which the greek texts are to be surrounded:

```
\startgreek ... \stopgreek
```

Alternatively you can also typeset greek inline with `\greek{...}`

The module does two things:

- It does a fontswitch with `\switchtobodyfont[cbgreek]`
- Switches to the local language `\language{greek}`

When starting a piece of greek text the typeface that will be used is according to the bodyfont in the main text e.g. it will be `rm` at 10pt or `ss` at 12pt or whatever has been set for the maintext's bodyfont.

Possibly one would like to have the greek fragment typeset in sans serif or monospaced and with another size. This can easily be achieved with

```
\startgreek
\tt\tfd
p'anta <re~i.
\stopgreek
```

πάντα ῥεῖ .

Besides this, one can add commands like `\bf`, `\it`, `\em` and `\sc`.

The greek alphabet

For illustration we type first the latin alphabet and show then how the different positions come out in the greek alphabet:

```
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
α β ς δ ε φ γ η ι θ κ λ μ ν ο π ρ ς τ υ ω ξ ψ ζ
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
Α Β Γ Δ Ε Φ Γ Η Ι Θ Κ Λ Μ Ν Ο Π Χ Ρ Σ Τ Υ ς Ω Ξ Ψ Ζ
```

There are some peculiar outcomes specially in the uppercase characters. Furthermore you see that `j` gives `θ` and `c` gives the end-of-the-word sigma `ς`. It is noteworthy that `s` gives either the normal or the end-of-the-word sigma, depending on the position of occurrence:

```
\greek{basile'ios} βασιλείος
```

All diacritical signs are available to typeset polytonic/classical greek. Accents, breathings and subscribed iotas can be created as displayed in the following table:

Greek	Coding	Name
acute	<code>\greek{'a}</code>	acute
grave	<code>\greek{`a}</code>	grave
circumflex	<code>\greek{~a}</code>	circumflex
rough breathing	<code>\greek{<r}</code>	rough breathing
smooth breathing	<code>\greek{>w}</code>	smooth breathing
apostrophe	<code>\greek{a"}</code>	apostrophe
subscript iota	<code>\greek{a }</code>	subscript iota
eta	<code>\greek{h }</code>	
omega	<code>\greek{w }</code>	

Note that you will have to type a double-quote after the last character to obtain an apostrophe:

```
\greek{pant"} παντ'
```

When using uppercase characters, diacritical signs get the correct position automatically:

```
\greek{'A, 'A, ~A, <A, >A, A|} 'A, 'A, ~A, 'A, 'A, A_
```

When using small capitals no accents or breathings at all are typeset.

```
\greek{\sc <oi >Ajhna'ioi} ΟΙ ΑΘΗΝΑΙΟΙ
```

Examples

Now let us see what we can achieve with this module!

We start with presenting the input coding of the first 10 verses of the first book of the *Odyssee* by Homeros. Following that, the text is typeset in greek. – Because I believe that there are not too many among us who can read greek, different translations of the same verses are shown next . . .

As a second example, the text is shown which was presented in the article on the book revival of Johan Polak's "Bloei der decadence" (Maps#31).

Greek text *Odyssee*, 1, 1–10

From: <http://www.vox-graeca-gottingensis.de/Texte/Homer/Odyssee/od1.1-10.htm>

```
\startgreek
\startitemize[n,packed]
\bf
\item >'Andra moi >'ennepe, Mo~usa, pol'utropon, <'os m'ala p'olla
\item pl'agqjh, >epe'i Tro'ihs <ier'on ptol'iejron >'eperse;
\item poll~wn d" >anjr'wpwn >'iden >'astea ka'i n'oon >'egnw,
\item poll'a d" <'o g" >en p'ontw| p'ajen >'algea <'on kat'a jum'on,
\item >arn'umenos <'hn te yuq'hn ka'i n'oston <eta'irwn.
\item >all" o>ud" <'ws <et'arous >err'usato <i'emen'os per
\item aut~wn g'ar sfet'erh|sin >atasjal'ih|sin >'olonto,
\item n'hpioi, <o'i kat'a bo~us <Uper'ionos >Hel'ioio
\item >'hsjion a>ut'ar <o to~isin >afe'ileto n'ostimon <~hmar.
\item t~wn >am'ojen ge, je'a, j'ugater Di'os, e>ip'e ka'i <hm~in.
\stopitemize
\stopgreek
```

1. Ἄνδρα μοι ἔννεπε, Μοῦσα, πολύτροπον, ὃς μάλα πόλλα
2. πλάγχθη, ἐπεὶ Τροίης ἱερὸν πτολίεθρον ἔπερσε·
3. πολλῶν δ' ἀνθρώπων ἴδεν ἄστεα καὶ νόον ἔγνω,
4. πολλὰ δ' ὃ γ' ἐν πόντῳ πάθεν ἄλγεα ὃν κατὰ θυμόν,
5. ἀρνύμενος ἣν τε ψυχὴν καὶ νόστον ἐταίρων.
6. ἀλλ' οὐδ' ὦς ἐτάρους ἐρρύσατο ἰέμενός περ
7. αὐτῶν γὰρ σφετέρησιν ἀτασθαλίησιν ὄλοντο,
8. νήπιοι, οἱ κατὰ βοῦς Ἕπερίονος Ἥελίοιο
9. ἧσθιον αὐτὰρ ὁ τοῖσιν ἀφείλετο νόστιμον ἦμαρ.
10. τῶν ἀμόθεν γε, θεά, θύγατερ Διός, εἰπέ καὶ ἡμῖν.

English translation by Samuel Butler

From: <http://www.perseus.tufts.edu/cgi-bin/ptext?doc=Perseus:text:1999.01.0218:book=1:line=1>

1. Tell me, O Muse, of that many-sided hero who traveled far and wide
2. after he had sacked the famous town of Troy.
3. Many cities did he visit, and many were the people
4. with whose customs and thinking he was acquainted;
5. many things he suffered at sea while seeking to save his own life and to achieve the safe homecoming of his companions;
6. but do what he might he could not save his men, for they perished through their own
7. sheer recklessness in eating the cattle of the Sun-god Helios;
8. so the god prevented them from ever reaching home.
9. Tell me, as you have told those who came before me,
10. about all these things, O daughter of Zeus, starting from whatsoever point you choose.

Dutch translation by Van 's Gravenweert

From: Jan van 's Gravenweert. De Odysséa van Homerus, naar het Grieksch, in Nederduitsche verzen gevolgd. Johannes van der Hey en Zoon, Amsterdam. 1823.
<http://www.koxkollum.nl/Homerus/odyssee01sGravenweert.htm>

1. Spreek, Zangster! van den held, in krijg en list volleerd,
2. Die, toen hij Trojes wal tot puin had omgekeerd,
3. Moest zwerven; die op zee rampzalig heeft geleden,
4. Een aantal volkren zag en onbekende zeden,
5. Wanneer hij voor zich zelv' en 't leger redding zocht;
6. Maar, hoe trouwhartig ook, geen benden helpen mogt,
7. Die woest en onbedacht zich zelve in 't onheil bragten,
8. En 't rundervee der Zon ten gruwbren maaltijd slagkten, -
9. Der Zon, wier gramschap haar geen' dag van keeren gaf.
10. Spreek, Zangster! van hunn' togt, hun lijden en hun straf.

German translation by Johann Voß, 1781

From: Project Gutenberg Germany: <http://gutenberg.spiegel.de/homer/odyssee/odys011.htm>

1. Sage mir, Muse, die Taten des vielgewanderten Mannes,
2. Welcher so weit geirrt nach der heiligen Troja Zerstörung,
3. Vieler Menschen Städte gesehn und Sitte gelernt hat
4. Und auf dem Meere so viel unnennbare Leiden erduldet,
5. Seine Seele zu retten und seiner Freunde Zukunft.
6. Aber die Freunde rettet' er nicht, wie eifrig er strebte;
7. Denn sie bereiteten selbst durch Missetat ihr Verderben:
8. Tore! Welche die Rinder des hohen Sonnenbeherrschers
9. Schlachteten; siehe, der Gott nahm ihnen den Tag der Zukunft,
10. Sage hievon auch uns ein wenig, Tochter des Kronions.

Swiss german translation

Here follows for curiosity a special translation in swiss dialect. It is written in the spoken language of the county of Bern.

From: A. Meyer. Homer Bärndütsch, Odyssee. Edition Francke im Cosmos Verlag, Bern. 4. Auflage 1988. ISBN 3305000694. (With permission from the publishing house.)

1. Göttelechi Tochter, o sing mer das Lied doch vom gwaglete Ma itz!
2. Isch es gwüss ihn ja, wo Troja, di herrliche Veschi het proche.
3. Het drufaba dert mängerlei Lüten Örter glehrt bchenne.
4. Allerlei Bittersch u Leids ufem Meer uss erläbt u erlitte.
5. Toll um sys Läben ou grunge, für d'Heifahrt vo all syne Gspane.
6. Aber doch alles für nüt und ekeine het er errettet.
7. Zgrund si si ggange dür egeti Schuld u verwägene Frävel.
8. Töde di Tröpf nid am Sunnegott syner heilige Stiere!
9. Gwaltig ertöibt wäge däm laht dä Gott sälb Fahrt la vergrate.
10. Öppis vo däm doch sing is u pricht is, du herrliche Göttin!

The next example shows the footnote in Johan Polak's "Bloei der decadence" (Maps#31), now produced with the greek module:

```
\unknown\greek{peri g'ar qaq'a p'antojen >'esth.}
```

```
...περι γάρ χαχά πάντοθεν ἔσθη.
```

This is the second part of the verse 270 in the 14th book of the Odyssee. It can be translated as:

English : ... for evil surrounded us on every side
 German : ... denn ringsum drohte Verderben
 Dutch : ... want het gevaar kwam van alle kanten

Conclusion

ConT_EXt provides a module which can be used to typeset pieces of greek text in documents based on other languages than greek. The module is based on a subset of the cb-greek fonts, allowing to typeset greek fragments in serif, sans serif, roman, bold italic and slanted, typewriter in roman, italic and slanted including small capitals for serif, sans and typewriter. The cb-greek fonts are already available from the CTAN archives. A medium subset is included in T_EXlive media 2004 together with the suitable map-file. Due to the fact that a broad range of typefaces is available in the subset, there should always be a way to make such a choice that the combination of the maintext's bodyfont with the cb-greek font gives an appealing result.

Post script

When the writer was at school he learned the following saying:

Τῶν πονῶν πολούσιν πάντα θ' ἀγαθὰ οἱ Θεοί

We will be glad to hear your personal translation. The best and most hilarious solutions will be presented in the next edition of the Maps! You are invited to send your solution to: ntg-secretaris@ntg.nl.

Willi Egger
 Hans Hagen
w.egger@boede.nl, h.hagen@pragma.com

Annex: cb-greek fonts subset in T_EXlive 2004**Serif, roman, bold-roman**

Τῶν πονῶν πολούσιν πάντα θ' ἀγαθὰ οἱ Θεοί
Τῶν πονῶν πολούσιν πάντα θ' ἀγαθὰ οἱ Θεοί

Serif, italic, slanted

Τῶν πονῶν πολούσιν πάντα θ' ἀγαθὰ οἱ Θεοί
Τῶν πονῶν πολούσιν πάντα θ' ἀγαθὰ οἱ Θεοί

Sans, roman

Τῶν πονῶν πολούσιν πάντα θ' ἀγαθὰ οἱ Θεοί

Sans, italic, slanted

Τῶν πονῶν πολούσιν πάντα θ' ἀγαθὰ οἱ Θεοί
Τῶν πονῶν πολούσιν πάντα θ' ἀγαθὰ οἱ Θεοί

Small Caps, serif, sans, mono

ΤΩΝ ΠΟΝΩΝ ΠΟΛΟΥΣΙΝ ΠΑΝΤΑ Θ' ΑΓΑΘΑ ΟΙ ΘΕΟΙ
 ΤΩΝ ΠΟΝΩΝ ΠΟΛΟΥΣΙΝ ΠΑΝΤΑ Θ' ΑΓΑΘΑ ΟΙ ΘΕΟΙ
 ΤΩΝ ΠΟΝΩΝ ΠΟΛΟΥΣΙΝ ΠΑΝΤΑ Θ' ΑΓΑΘΑ ΟΙ ΘΕΟΙ

Typewriter, roman, italic, slanted

Τῶν πονῶν πολούσιν πάντα θ' ἀγαθὰ οἱ Θεοί
Τῶν πονῶν πολούσιν πάντα θ' ἀγαθὰ οἱ Θεοί
Τῶν πονῶν πολούσιν πάντα θ' ἀγαθὰ οἱ Θεοί