

Greek support for Babel with XeTeX/LuaTeX

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The babel option «greek» activates the support for the Greek language defined in the file «greek.ldf» (source «greek.dtx»).

Typesetting Greek texts requires a font containing Greek letters. With the XeTeX or LuaTeX engines, the user must ensure that the selected font contains the required glyphs (the default Latin Modern fonts miss them). Examples for suitable fonts are the «Deja Vu», «Linux Libertine», or «Free Serif» OpenType fonts.

1 Language Switch

The declaration `\selectlanguage` switches between languages.

Τί φήεις; Ἴδὼν ἐνθὲδε παῖδ' ἐλευθέραν τὰς πλησίον Νύμφας στεφανοῦσαν, Σώστρατε, ἔρων ἀπῆλθες εὐθύς;

The command `\foreignlanguage` sets its second argument in the language specified as first argument. This is intended for short text parts like Βιβλιοθήκη.

2 Font Encoding

Every language switch to `greek` calls the `\extrasgreek` command which in turn calls `\greekscript` to ensure a Greek-supporting font encoding (LGR, TU, EU1, or EU2). Under XeTeX/LuaTeX the font encoding normally just remains Unicode (TU, EU1, or EU2). For customization, you can add to or redefine the `\extrasgreek` command.

The LGR font encoding does not support Latin characters. Therefore, the Babel core defines the declaration `\latintext` and the command `\textlatin` to switch to the TU, EU1, EU2, T1 or OT1 font encoding or typeset the argument using this encoding. At this point, the «latinencoding» is TU.

Every language switch from `greek` calls the `\noextrasgreek` command which in turn calls `\latintext`.

For customization, you can add to or redefine the `\noextrasgreek` command.

With the Unicode font encodings TU, EU1 (XeTeX), or EU2 (LuaTeX), Latin characters can be used in Greek text parts and input via the «LGR Latin transcription» is not

possible.¹

Φίλων τοῦ TeX (ΕΦΤ) – Friends (Fίlwn) of TeX.²

3 LICR Macros

Babel defines macros for several autogenerated strings so that they may appear in the choosen language. *babel-greek* uses LICR macros in order to let the string macros work independent of the font encoding.

If *fontspec* is loaded, *babel-greek* loads Greek LICR definitions for the Unicode font encoding (TU, EU1 or EU2) from the file `greek-euenc.def` provided with **greek-fontenc** since version 0.10.

With this setup, it is also possible to use accent macros instead of pre-composed Unicode characters for letters with diacritics: «Τί φήις;», «ὄρα = ὀρα».

3.1 Captions

Προοίμιον, Ἀναφοραί, Περίληψις, Βιβλιογραφία, Κεφάλαιον, Παράρτημα, Περιεχόμενα, Κατάλογος σχημάτων, Κατάλογος πινάκων, Εύρετήριο, Σχήμα, Πίναξ, Μέρος, Συνημμένως, Κοινοποιήσις, Πρὸς, Σελίς, ὄρα, ὀρα ὡσαύτως, Ἀπόδειξις, Γλωσσάριον

Test correct upcasing (dropping of accents):

ΠΡΟΟΙΜΙΟΝ, ΑΝΑΦΟΡΑΙ, ΠΕΡΙΛΗΨΙΣ, ΒΙΒΛΙΟΓΡΑΦΙΑ, ΚΕΦΑΛΑΙΟΝ, ΠΑΡΑΡΤΗΜΑ, ΠΕΡΙΕΧΟΜΕΝΑ, ΚΑΤΑΛΟΓΟΣ ΣΧΗΜΑΤΩΝ, ΚΑΤΑΛΟΓΟΣ ΠΙΝΑΚΩΝ, ΕΥΡΕΤΗΡΙΟΝ, ΣΧΗΜΑ, ΠΙΝΑΞ, ΜΕΡΟΣ, ΣΥΝΗΜΜΕΝΩΣ, ΚΟΙΝΟΠΟΙΗΣΙΣ, ΠΡΟΣ, ΣΕΛΙΣ, ΟΡΑ, ΟΡΑ ΩΣΑΥΤΩΣ, ΑΠΟΔΕΙΞΙΣ, ΓΛΩΣΣΑΡΙΟΝ

3.2 Months

7 Ἰανουαρίου 2016
7 Φεβρουαρίου 2016
7 Μαρτίου 2016
7 Ἀπριλίου 2016
7 Μαΐου 2016
7 Ἰουνίου 2016
7 Ἰουλίου 2016
7 Αὐγούστου 2016
7 Σεπτεμβρίου 2016
7 Ὀκτωβρίου 2016
7 Νοεμβρίου 2016
7 Δεκεμβρίου 2016

¹The *xunicode* package provides with the `tipa` emulation an example how this could be achieved also for Unicode fonts. Alternatively, LGR encoded fonts can be used (see `test-unicode-lgr.tex`).

²Compare the printout to the similar example in `test-greek.pdf`.

4 Greek Numerals

See greek.pdf for the formation rules of Greek numerals. Some examples:

α' , β' , γ' , δ' , ϵ' , ζ' , η' , θ' , ι' , κ' , λ' , μ' , ν' , ξ' , \omicron' , π' , ρ' , σ' , τ' , υ' , ϕ' , χ' , ψ' , ω'

A' , B' , $\text{Γ}'$, $\text{Δ}'$, E' , $\text{Ζ}'$, $\text{Ζ}'$, H' , $\text{Θ}'$, I' , IA' , IB' , K' , TME' , $\text{Φ}'$, $\text{A}^{\eta}\text{QZ}'$, BIF' ,

Enumerated lists use Greek characters/numerals in the second and fourth level:

1. item 1
 - (α') item 1.1
 - i. item 1.1.1
 - A' . item 1.1.1.1
 - B' . item 1.1.1.2
 - ii. item 1.1.2

This may be problematic with fonts that only partially support Greek and miss the numeral signs (dexiakeraia and aristerikeraia).

You may redefine the commands `\textdexiakeraia` and `\textaristerikeraia` to some substitute characters. Or, if you prefer the “normal” enumeration, write in the preamble after loading babel:

```
\makeatletter
\addto\extrasgreek{\let\@alph\latin@alph
\let\@Alph\latin@Alph}
\makeatother
```