

## Greek support for Babel with XeTeX/LuaTeX

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 should ensure that the chosen font contains the required glyphs (the default Latin Modern fonts miss them). Examples for suitable fonts are the “Deja Vu” or the “Linux Libertine” OpenType fonts.

### 1 Language Switch

The declaration `\selectlanguage` switches between languages.

Ο Σύλλογος Έλλήνων Φίλων τοῦ TeX, γνωστὸς καὶ ως «Έλληνες Φίλοι τοῦ ΤΕΧ» (ΕΦΤ γιὰ συντομίᾳ) ἀποτελεῖ τὴν ἐπίσημη Τοπικὴ Όμάδα τοῦ ΤΕΧ ἢ τὸ ἑλληνικὸ ΤΕΧ LUG (Local Users Group).

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

### 2 Font Encoding

In Greek text parts, the font encoding is automatically set to LGR if an 8-bit TeX engine is used. With XeTeX or LuaTeX, the macros `\greektext` and `\textgreek` don’t change the font encoding. Latin characters can be used also in Greek text parts. Input via the Latin transcription defined in LGR is not possible.<sup>1</sup>

Φίλων τοῦ TeX (ΕΦΤ) – Friends (Filwn) of TeX.

### 3 MakeUppercase, MakeLowercase

Capital Greek letters have diacritics (except the dialytika and sub-iota) to the left (instead of above) and drop them in uppercase, e.g. μαΐστρος  $\mapsto$  ΜΑΪΣΤΡΟΣ.

Tonos and dasia mark a *hiatus* (break-up of a diphthong) if placed on the first vowel of a diphthong ((άι, ῥν, ἔι, ᾄι, ῥν, ἔι). A dialytika must be placed on the second vowel if they are dropped: (AI, AY, EI, AI, AY, EI). This does not work (yet?) with Unicode literals. (See section «hiatus» below for a test with LICR macros.)

The following subsections test MakeUppercase and MakeLowercase with all characters defined in lgrenc.dfu:

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<sup>1</sup>The *xunicode* package provides with the *tipa* emulation an example how this could be achieved if really required.

### 3.1 Greek and Coptic

## Characters of the Greek and Coptic Unicode Block:

΄ „Α·Ε·Η·Ι·Ο·Υ·Ω·Α·Β·Γ·Δ·Ε·Ζ·Η·Ω·Ι·Κ·Λ·Μ·Ν·Ξ·Ο·Π·Ρ·Σ·Τ·Υ·Φ·Χ·Ψ·Ω·Ϊ·Γ·Ω·Σ·Γ·Η·  
ά·έ·ή·ι·ύ·α·β·γ·δ·ε·ζ·η·θ·ι·κ·λ·μ·ν·ξ·ο·π·ρ·ς·σ·τ·υ·φ·χ·ψ·ω·Ϊ·ύ·ό·ώ·ρ·ς·ή·

MakeUppercase:

Α·ΕΗΙΟΥΩΪΑΒΓΔΕΖΗΘΙΚΛΜΝΞΟΠΡΣΤΥΦΧΨΩΪΪΟΣFK  
ΑΕΗΙΫΑΒΓΔΕΖΗΘΙΚΛΜΝΞΟΠΡΣΤΥΦΧΨΩΪΪΟΥΩΟΣCF>P

Letters upcased, diacritics except dialytika dropped. OK.

$\mathcal{D}$  (Sampi)  $\mapsto$  K (Kappa) and  $\mathcal{R}$  (smpi)  $\mapsto$  P (Rho) seems a bug (in Xe/LuaTeX or xgreek?).

MakeLowercase:

΄,;΄ “ά·έάίόύώΐαβγδεζηθικλμνξοπρστυφχψωϊϋօցֆ”  
ά·έήιնաβγδεζηθικλμνξοπրσտυφχψωϊϋօցէ”

The lowercase of  $\Sigma$  is  $\sigma$  (GREEK SMALL LETTER SIGMA).<sup>2</sup> The lowercase of  $\zeta$  (GREEK LETTER STIGMA) is  $\varsigma$ .

### 3.2 Greek extended

## Characters of the Greek extended Unicode block:

MakeUppercase:

A A A A A A A A A A A A A A  
E E E E E E E E E E  
H H H H H H H H H H H H H H  
I I I I I I I I I I I I  
O O O O O O O O O O O O

<sup>2</sup>With LGR, it is \textautosigma.

Y Y Y Y Y Y Y Y Y Y Y Y  
 Ω Ω Ω Ω Ω Ω Ω Ω Ω Ω Ω Ω Ω Ω  
 A A E E H H I I O O Y Y Ω Ω  
 Aι  
 Hι  
 Ωι  
 Ă Ā Aι Aι Aι Aι Ă Ā A A Aι 'I'  
 ~ " Hι Hι Hι Hι E E H H Hι " ~  
 I I I I I I I I I I " " ~  
 Ŷ Ÿ Ŷ Ÿ P P Y Ÿ Ÿ Ÿ Ÿ P ~ ~  
 Ωι Ωι Ωι Ωι Ωι O O Ω Ω Ωι '

MakeLowercase:

4 LICR Macros

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

If the (experimental) file `greek-euenc.def` from the package `greek-fontenc` exists, it is used to define L<sup>I</sup>C<sub>R</sub> macros for Greek symbols ( $\alpha \dots \Omega$ ) and diacritics (ü, ï, 'H, ...).

## 4.1 Hiatus

The «hiatus» feature works with macro input:

άνωλος ↔ ΑΪΛΟΣ, ἄνωλος ↔ ΑΪΛΟΣ, μάινα ↔ ΜΑΪΝΑ, κέικ ↔ ΚΕΪΚ, ἀνπνία ↔ ΑΪ-ΠΝΙΑ.

## 4.2 Captions

Πρόλογος, Άναφορές, Περίληψη, Βιβλιογραφία, Κεφάλαιο, Παράρτημα, Περιεχόμενα, Κατάλογος Σχημάτων, Κατάλογος Πινάκων, Εύρετήριο, Σχῆμα, Πίνακας, Μέρος, Συνημένα, Κοινοποίηση, Πρὸς, Σελίδα, βλέπε, βλέπε ἐπίσης, Ἀπόδειξη, Γλωσσάρι,

## 4.3 Months

19 Ιανουαρίου 2013  
19 Φεβρουαρίου 2013  
19 Μαρτίου 2013  
19 Απριλίου 2013  
19 Μαΐου 2013  
19 Ιουνίου 2013  
19 Ιουλίου 2013  
19 Αύγουστου 2013  
19 Σεπτεμβρίου 2013  
19 Οκτωβρίου 2013  
19 Νοεμβρίου 2013  
19 Δεκεμβρίου 2013

## 5 Greek Numerals

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

$\alpha'$ ,  $\beta'$ ,  $\gamma'$ ,  $\delta'$ ,  $\epsilon'$ ,  $\zeta'$ ,  $\eta'$ ,  $\theta'$ ,  $\iota'$ ,  $\iota\alpha'$ ,  $\iota\beta'$ ,  $\kappa'$ ,  $\tau\mu\epsilon'$ ,  $\varphi'$ ,  $\alpha\lambda\eta\zeta'$ ,  $\beta\iota\gamma'$ ,  
 $A'$ ,  $B'$ ,  $\Gamma'$ ,  $\Delta'$ ,  $E'$ ,  $\zeta'$ ,  $Z'$ ,  $H'$ ,  $\Theta'$ ,  $I'$ ,  $IA'$ ,  $IB'$ ,  $K'$ ,  $TME'$ ,  $\Phi'$ ,  $A\lambda\eta QZ'$ ,  $B\Pi\Gamma'$ ,

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

1.  $\leftarrow 1$
- ( $\alpha'$ )  $\leftarrow 1.1$ 
  - i.  $\leftarrow 1.1.1$
  - $A'$ .  $\leftarrow 1.1.1.1$
  - $B'$ .  $\leftarrow 1.1.1.2$
- ii.  $\leftarrow 1.1.2$