

# 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 choosen 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 φήις; Ἰδὼν ἐνθὲδε παῖδ' ἐλευθέραν τὰς πλησίον Νύμφας στεφανοῦ-  
σαν, Σώστρατε, ἐρῶν ἀπῆλθες εὐθύς;

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 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.<sup>2</sup>

## 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. μαῖστρος  $\mapsto$  ΜΑΪΣΤΡΟΣ.

Tonos and dasia mark a *hiatus* (break-up of a diphthong) if placed on the first vowel of a diphtong ((*ái*, *áv*, *éi*, *ǎi*, *ǎv*, *ěi*). A dialytika must be placed on the second vowel if they are dropped. This does not work (yet?) with Unicode literals (AI, AY, EI, AI, AY, EI). (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.

<sup>2</sup>Compare the printout to the similar example in `test-greek.pdf`.

### 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·Θ·Ι·Κ·Λ·Μ·Ν·Ξ·Ο·Π·Ρ·Σ·Τ·Υ·Φ·Χ·Ψ·Ω·Ï·Q·S·F·η  
ά·έ·ή·ι·ύ·α·β·γ·δ·ε·ζ·η·θ·ικ·λ·μ·ν·ξ·ο·π·ρ·σ·τ·υ·φ·χ·ψ·ω·ÿ·ó·ú·ώ·ρ·ς·ζ·η

MakeUppercase:

Α·ΕΗΙΟΥΩΙΑΒΓΔΕΖΗΘΙΚΑΜΝΞΟΠΡΣΤΥΦΧΨΩΪϚϙςFK  
ΑΕΗΙϚΑΒΓΔΕΖΗΘΙΚΑΜΝΞΟΠΡΣΣΤΥΦΧΨΩΪϚΟΥΩςϙςΡ

Letters upcased, diacritics except dialytika dropped. OK.

$\Upsilon$  (Sampi)  $\mapsto$  K (Kappa) and  $\rho$  (sampi)  $\mapsto$  P (Rho) is a bug in xgreek-fixes.def from the polyglossia package.

MakeLowercase:

‘,;’ ἄ·ἐ·ἀ·ιού·ώ·ἰ·α·β·γ·δ·ε·ζ·η·θ·ικ·λ·μ·ν·ξ·ο·π·ρ·σ·τ·υ·φ·χ·ψ·ω·ῖ·ὀ·ρ·ς·ʹ  
 ἄ·ἐ·ἰ·ῖ·α·β·γ·δ·ε·ζ·η·θ·ικ·λ·μ·ν·ξ·ο·π·ρ·ς·τ·σ·τ·υ·φ·χ·ψ·ω·ῖ·ὀ·ύ·ό·ύ·ρ·ς·ʹʹʹ

The lowercase of  $\Sigma$  is  $\sigma$  (GREEK SMALL LETTER SIGMA).<sup>3</sup> The lowercase of  $\zeta$  (GREEK LETTER STIGMA) is  $\varsigma$ .

### 3.2 Greek extended

Characters of the Greek extended Unicode block:

[illegible]

MakeUppercase:

[illegible]

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<sup>3</sup>With LGR, it is `\textautosigma`.



## 4.2 Captions

Πρόλογος, Αναφορές, Περίληψη, Βιβλιογραφία, Κεφάλαιο, Παράρτημα, Περιεχόμενα, Κατάλογος Σχημάτων, Κατάλογος Πινάκων, Εύρετήριο, Σχήμα, Πίνακας, Μέρος, Συνημμένα, Κοινοποίηση, Πρὸς, Σελίδα, βλέπε, βλέπε επίσης, Απόδειξη, Γλωσσάρι,

## 4.3 Months

10 Ἰανουαρίου 2013  
10 Φεβρουαρίου 2013  
10 Μαρτίου 2013  
10 Ἀπριλίου 2013  
10 Μαΐου 2013  
10 Ἰουνίου 2013  
10 Ἰουλίου 2013  
10 Αὐγούστου 2013  
10 Σεπτεμβρίου 2013  
10 Ὀκτωβρίου 2013  
10 Νοεμβρίου 2013  
10 Δεκεμβρίου 2013

## 5 Greek Numerals

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

α', β', γ', δ', ε', ζ', ζ', η', θ', ι', ια', ιβ', κ', τμε', φ', ,αϑζ', ,βιγ',

A', B', Γ', Δ', E', ζ', Z', H', Θ', I', IA', IB', K', TME', Φ', ,AϑQZ', ,BII',

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