

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.¹

Φίλων τοῦ TeX (ΕΦΤ) -- Friends (Filwn) of TeX.²

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`:

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

²Compare 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·Œ·Ɔ·Ƨ·
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·ó·Ɔ·Ƨ·

MakeUppercase:

Α·ΕΗΙΟΥΩΙΑΒΓΔΕΖΗΘΙΚΑΜΝΞΟΠΡΣΤΥΦΧΨΩΪϚϙςFK
ΑΕΗΙϚΑΒΓΔΕΖΗΘΙΚΑΜΝΞΟΠΡΣΣΤΥΦΧΨΩΪϚΟΥΩςϙςΡ

Letters upcased, diacritics except dialytika dropped. OK.

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

MakeLowercase:

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

The lowercase of Σ is σ (GREEK SMALL LETTER SIGMA).³ The lowercase of ζ (GREEK LETTER STIGMA) is ς .

3.2 Greek extended

Characters of the Greek extended Unicode block:

[illegible]

MakeUppercase:

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

³With LICRs, it is `\textautosigma`.

4.2 Captions

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

Test correct upcasing (dropping of accents):

ΠΡΟΛΟΓΟΣ, ΑΝΑΦΟΡΕΣ, ΠΕΡΙΛΗΨΗ, ΒΙΒΛΙΟΓΡΑΦΙΑ, ΚΕΦΑΛΑΙΟ, ΠΑΡΑΡΤΗΜΑ, ΠΕΡΙΕΧΟΜΕΝΑ, ΚΑΤΑΛΟΓΟΣ ΣΧΗΜΑΤΩΝ, ΚΑΤΑΛΟΓΟΣ ΠΙΝΑΚΩΝ, ΕΥΡΕΤΗΡΙΟ, ΣΧΗΜΑ, ΠΙΝΑΚΑΣ, ΜΕΡΟΣ, ΣΥΝΗΜΜΕΝΑ, ΚΟΙΝΟΠΟΙΗΣΗ, ΠΡΟΣ, ΣΕΛΙΔΑ, ΒΛΕΠΕ, ΒΛΕΠΕ ΕΠΙΣΗΣ, ΑΠΟΔΕΙΞΗ, ΓΛΩΣΣΑΡΙ

4.3 Months

1 Ιανουαρίου 2013
1 Φεβρουαρίου 2013
1 Μαρτίου 2013
1 Απριλίου 2013
1 Μαΐου 2013
1 Ιουνίου 2013
1 Ιουλίου 2013
1 Αυγούστου 2013
1 Σεπτεμβρίου 2013
1 Οκτωβρίου 2013
1 Νοεμβρίου 2013
1 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', τμ', φ', ,α'αζ', ,βιγ',
Α', Β', Γ', Δ', Ε', Ζ', Ζ', Η', Θ', Ι', ΙΑ', ΙΒ', Κ', ΤΜΕ', Φ', ,Α'ηQZ', ,ΒΙΓ',

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

1. item 1
 - (α') item 1.1
 - i. item 1.1.1
 - Α'. item 1.1.1.1
 - Β'. 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). 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
```