ΠΟΛΥΓΛωΣΣΙΑ

Polyglossia: Modern multilingual typesetting with XAMTEX and LuaLTEX

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 $^{{}^*}Please\ report\ bugs\ to\ \verb|http://github.com/reutenauer/polyglossia/issues|\\$

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1 Introduction

Polyglossia is a package for facilitating multilingual typesetting with X-TEX and LuaLETEX. Basically, it can be used as an alternative to babel for performing the following tasks automatically:

- 1. Loading the appropriate hyphenation patterns.
- 2. Setting the script and language tags of the current font (if possible and available), via the package fontspec.
- 3. Switching to a font assigned by the user to a particular script or language.
- 4. Adjusting some typographical conventions according to the current language (such as afterindent, frenchindent, spaces before or after punctuation marks, etc.).
- 5. Redefining all document strings (like "chapter", "figure", "bibliography").
- 6. Adapting the formatting of dates (for non-Gregorian calendars via external packages bundled with polyglossia: currently the Hebrew, Islamic and Farsi calendars are supported).
- 7. For languages that have their own numbering system, modifying the formatting of numbers appropriately (this also includes redefining the alphabetic sequence for non-Latin alphabets).¹
- 8. Ensuring proper directionality if the document contains languages that are written from right to left (via the package bidi, available separately).

Several features of babel that do not make sense in the X₂T_EX world (like font encodings, shorthands, etc.) are not supported. Generally speaking, polyglossia aims to remain as compatible as possible with the fundamental features of babel while being cleaner, light-weight, and modern. The package antomega has been very beneficial in our attempt to reach this objective.

Requirements The current version of polyglossia makes use of some convenient macros defined in the etoolbox package by Philipp Lehmann and Joseph Wright. Being designed for XATEX and LualTEX, it obviously also relies on fontspec by Will Robertson. For languages written from right to left, it needs the package bidi (for XATEX) or luabidi (for LuaTEX) by VAFA KHALIGHI (وفا خليقي) and the bidi-tex GitHub Organisation. Polyglossia also bundles three packages for calendaric computations (hebrewcal, hijrical, and farsical).

2 Setting up multilingual documents

2.1 Activating languages

The default language of a document is specified by means of the command \setdefaultlanguage[\options\]{\langle}

\setdefaultlanguage

¹This is done by bundled sub-packages such as arabicnumbers.

\setotherlanguage

\setotherlanguages

\setmainlanguage (or, equivalently, \setmainlanguage). Secondary languages are specified with \setotherlanguage[(options)]{(lang)}.

> All these commands allow you to set language-specific options.² It is also possible to load a series of secondary languages at once (but without options) using \setotherlanguages{\lang1}, \lang2}, \lang3}, \lang3}.

> All language-specific options can be modified locally by means of the languageswitching commands described in section 3.

> **Note** In general, it is advisable to activate the languages *after* all packages have been loaded. This is particularly important if you use right-to-left scripts or languages with babel shorthands.

Supported languages

Table 1 lists all languages currently supported. Those in red have specific options and/or commands that are explained in section 6 below.

Table 1. Languages currently supported in polyglossia

afrikaans	danish	icelandic	nko	sorbian
albanian	divehi	interlingua	norwegian	spanish
amharic	dutch	italian	occitan	swedish
arabic	english	japanese	odia	syriac
armenian	esperanto	kannada	persian	tamil
asturian	estonian	khmer	piedmontese	telugu
basque	finnish	korean	polish	thai
belarusian	french	kurdish	portuguese	tibetan
bengali	friulian	lao	punjabi	turkish
bosnian	gaelic	latin	romanian	turkmen
breton	galician	latvian	romansh	ukrainian
bulgarian	georgian	lithuanian	russian	urdu
catalan	german	macedonian	sami	uyghur
chinese	greek	malay	sanskrit	vietnamese
coptic	hebrew	malayalam	serbian	welsh
croatian	hindi	marathi	slovak	
czech	hungarian	mongolian	slovenian	

Nota bene Support for Chinese and Japanese is experimental. This particularly concerns the line breaking mechanism which is a proof of concept. Please use with care and report any issues and unexpected output you encounter.

²Section 6 documents these options for the respective languages.

V1.0.1 V1.1.1 V1.2.0 V1.43 V1.45

V1.52

V1.59

v1.66

V1.46

V1.47

Version Notes The support for Amharic \leftarrow should be considered an experimental attempt to port the package ethiop; feedback is welcome. Version 1.1.1 \leftarrow added support for Asturian, Lithuanian, and Urdu. Version 1.2 ← introduced Armenian, Occitan, Bengali, Lao, Malayalam, Marathi, Tamil, Telugu, and Turkmen.³ Version 1.43 ← brought basic support for Japanese (this is considered experimental, feedback is appreciated). In version 1.45 ←, support for Kurdish and Mongolian as well as some new variants (Canadian French and English) have been added. Furthermore, for consistency reasons, some language have been renamed ($farsi \rightarrow persian$, $friulan \rightarrow friulian$, $mag yar \rightarrow hungarian$, por $tuges \rightarrow portuguese, samin \rightarrow sami)$ or merged (bahasai/bahasam $\rightarrow malay, brazil/$ $portuges \rightarrow portuguese$, $lsorbian/usorbian \rightarrow sorbian$, $irish/scottish \rightarrow gaelic$, $norsk/scottish \rightarrow gaelic$, norsk/scottishnynorsk→norwegian). The old names are still supported for backwards compatibility reasons. Version 1.46 \(\) introduces support for Afrikaans, Belarusian, Bosnian and Georgian. Version 1.52 ← introduces support for Uyghur. Version 1.59 ← adds support for (simplified and traditional) Chinese and for Punjabi. Version 1.66 ← introduces support for Odia.

2.3 Relation to and use of Babel language names

If you are familiar with the babel package, you will note that polyglossia's language naming slightly differs. Whereas babel has a unique name for each language variety (*e.g.*, *american* and *british*), polyglossia differentiates language varieties via language options (*e.g.*, *english*, variant=american).

Furthermore, babel sometimes uses abbreviated language names (*e.g.*, *bahasam* for Bahasa Malayu) as well as endonyms, *i.e.*, language names coming from the designated languages (such as *bahasa*, *canadien* or *magyar*). As opposed to this, polyglossia always uses spelled-out (lower-cased) English language names. Please refer to table 2 for the differing language names in both packages.

For convenience reasons, polyglossia also supports the use of babel names — (for the few justified exceptions, please refer to the notes in table 2). The babel names listed in table 2 can be used instead of the corresponding polyglossia name/options in \setdefaultlanguage and \setotherlanguage as well as in the polyglossia and babel language switching commands/environments documented in section 3.1 and 3.2 (e.g., \textaustrian is synonymous to \textgerman[variant=austrian, spelling=old]). However, unless you have special reasons, we strongly encourage you to use the polyglossia names.

2.4 Using IETF language tags

Polyglossia \leftarrow also supports the use of language tags that conform to the

³See acknowledgements at the end for due credit to the various contributors.

 Table 2. Babel-polyglossia language name matching

Babel name	Polyglossia name	Polyglossia options
acadian	french	variant=acadian
american	english	variant=american [default]
australian	english	variant=australian
austrian	german	variant=austrian, spelling=old
bahasa	malay	variant=indonesian [default]
bahasam	malay	variant=malaysian
brazil	portuguese	variant=malaysian variant=brazilian
british	english	variant=british
canadian	english	variant=canadian
canadien	french	variant=canadian
classicallatin	latin	variant=classic
farsi		variant-classic
ecclesiasticallatin	persian latin	variant=ecclesiastic
friulan	friulian	variant=ecclesiastic
11101011	111011111	
german ^a	german	spelling=old
irish	gaelic	variant=irish [default]
kurmanji	kurdish	variant=kurmanji
lowersorbian	sorbian	variant=lower
magyar	hungarian	
medievallatin	latin	variant=medieval
naustrian	german	variant=austrian
newzealand	english	variant=newzealand
ngerman	german	variant=german [default]
norsk	norwegian	variant=bokmal
nswissgerman	german	variant=swiss
nynorsk	norwegian	variant=nynorsk [<i>default</i>]
polutonikogreek	greek	variant=polytonic
portuges	portuguese	variant=portuguese [default]
samin	sami	
scottish	gaelic	variant=scottish
serbianc	serbian	script=Cyrillic
slovene	slovenian	
spanishmx	spanish	variant=mexican
swissgerman	german	variant=swiss, spelling=old
uppersorbian	sorbian	variant=upper [default]

^aDue to the name conflict only available in polyglossia as *germanb* (which is a babel synonym).

IETF BCP-47 Best Current Practice.⁴ Thus, you can use tags such as en-GB (for British English) or de-AT-1901 (for Austrian German, old spelling) in \setdefaultlanguage and \setotherlanguage as well as in the language switching command \textlang{\(\tag\)}, the environment \begin{\lang}{\tag}(\tag)} ... \end{\lang} and the babel language switching commands/environments documented in section 3.2. Table 3 lists the currently supported tags.

Table 3. BCP47-polyglossia language name matching

BCP-47 tag	Polyglossia name	Polyglossia options
aeb	arabic	locale=tunisia
af	afrikaans	
afb	arabic	locale=default
am	amharic	
apd	arabic	locale=default
ar	arabic	
ar-IQ	arabic	locale=mashriq
ar-JO	arabic	locale=mashriq
ar-LB	arabic	locale=mashriq
ar-MR	arabic	locale=mauritania
ar-PS	arabic	locale=mashriq
ar-SY	arabic	locale=mashriq
ar-YE	arabic	locale=default
arq	arabic	locale=algeria
ary	arabic	locale=morocco
arz	arabic	locale=default
ast	asturian	
ayl	arabic	locale=libya
be	belarusian	
be-tarask	belarusian	spelling=classic
bg	bulgarian	
bn	bengali	
bo	tibetan	
br	breton	
bs	bosnian	
ca	catalan	
ckb	kurdish	variant=sorani [default]
ckb-Arab	kurdish	variant=sorani, script=Arabic [default]
ckb-Latn	kurdish	variant=sorani, script=Latin
сор	coptic	-
cy	welsh	
cz	czech	
da	danish	

 $^{^4}Please\ refer\ to\ https://tools.ietf.org/html/bcp47\ and\ https://en.wikipedia.org/wiki/IETF_language_tag\ for\ details.$

 Table 3. BCP47-polyglossia language name matching (continued)

DCD 45 1 -	Dalanda . '	Delevel and a settle of
BCP-47 tag	Polyglossia name	Polyglossia options
de	german	
de-AT	german	variant=austrian, spelling=new
de-AT-1901	german	variant=austrian, spelling=old
de-AT-1996	german	variant=austrian, spelling=new
de-CH	german	variant=swiss, spelling=new
de-CH-1901	german	variant=swiss, spelling=old
de-CH-1996	german	variant=swiss, spelling=new
de-DE	german	variant=german, spelling=new
de-DE-1901	german	variant=german, spelling=old
de-DE-1996	german	variant=german, spelling=new [default]
de-Latf	german	script=blackletter
de-Latf-AT	german	variant=austrian, spelling=new,
		script=blackletter
de-Latf-AT-1901	german	variant=austrian, spelling=old,
		script=blackletter
de-Latf-AT-1996	german	variant=austrian, spelling=new,
		script=blackletter
de-Latf-CH	german	variant=swiss, spelling=new,
	C	script=blackletter
de-Latf-CH-1901	german	variant=swiss, spelling=old,
	C	script=blackletter
de-Latf-CH-1996	german	variant=swiss, spelling=new,
	O	script=blackletter
de-Latf-DE	german	variant=german, spelling=new,
	O	script=blackletter
de-Latf-DE-1901	german	variant=german, spelling=old,
	O	script=blackletter
de-Latf-DE-1996	german	variant=german, spelling=new,
	8	script=blackletter
dsb	sorbian	variant=lower
dv	divehi	
el	greek	
el-monoton	greek	variant=monotonic [default]
el-polyton	greek	variant=polytonic
en polytoli en	english	variant polytome
en-AU	english	variant=australian
en-CA	english	variant=canadian
en-GB	english	variant=british
en-NZ	english	variant=newzealand
en-US	english	variant=ne w zealand variant=us [default]
eo	esperanto	· arrante ao [aojaan]
es	spanish	
es-ES	spanish	variant=spanish [default]
es-MX	spanish	variant=mexican
E9-1/1V	эрашы	variaiit-iiiexicaii

 Table 3. BCP47-polyglossia language name matching (continued)

BCP-47 tag	Polyglossia name	Polyglossia options
et	estonian	
eu	basque	
fa	persian	
fi	finnish	
fr	french	
fr-CA	french	variant=canadian
fr-CA-u-sd-canb	french	variant=acadian
fr-CH	french	variant=swiss
fr-FR	french	variant=french [default]
fur	friulian	
ga	gaelic	variant=irish [default]
gd	gaelic	variant=scottish
gl	galician	
grc	greek	variant=ancient
he	hebrew	
hi	hindi	
hr	croatian	
hsb	sorbian	variant=upper [default]
hu	hungarian	
hy	armenian	
ia	interlingua	
id	malay	variant=indonesian
is	icelandic	
it	italian	
ja	japanese	
ka	georgian	
km	khmer	
kmr	kurdish	variant=kurmanji
kmr-Arab	kurdish	variant=kurmanji, script=Arabic
kmr-Latn	kurdish	variant=kurmanji, script=Latin
kn	kannada	
ko	korean	
ku	kurdish	
ku-Arab	kurdish	script=Arabic
ku-Latn	kurdish	script=Latin
la	latin	
la-x-classic	latin	variant=classic
la-x-ecclesia	latin	variant=ecclesiastic
la-x-medieval	latin	variant=medieval
lo	lao	
lt	lithuanian	
lv	latvian	
mk	macedonian	
ml	malayalam	

 Table 3. BCP47-polyglossia language name matching (continued)

BCP-47 tag	Polyglossia name	Polyglossia options
mn	mongolian	
mr	marathi	
nb	norwegian	variant=bokmal
nko	nko	
nl	dutch	
nn	norwegian	variant=nynorsk [default]
oc	occitan	
or	odia	changecounternumbering=false,
		numerals=Devanagari [default]
pa	punjabi	numerals=gurmukhi
pl	polish	
pms	piedmontese	
pt	portuguese	
pt-BR	portuguese	variant=brazilian
pt-PT	portuguese	variant=portuguese [default]
rm	romansh	
ro	romanian	
ru	russian	
ru-luna1918	russian	spelling=modern [default]
ru-petr1708	russian	spelling=old
sa	sanskrit	
sa-Beng	sanskrit	script=Bengali
sa-Deva	sanskrit	script=Devanagari [default]
sa-Gujr	sanskrit	script=Gujarati
sa-Knda	sanskrit	script=Kannada
sa-Mlym	sanskrit	script=Malayalam
sa-Telu	sanskrit	script=Telugu
se	sami	
sk	slovak	
sl	slovenian	
sq	albanian	
sr	serbian	
sr-Cyrl	serbian	script=Cyrillic
sr-Latn	serbian	script=Latin [default]
sv	swedish	
syr	syriac	
ta	tamil	
te	telugu	
th	thai	
tk	turkmen	
tr	turkish	
ug	uyghur	
uk	ukrainian	
ur	urdu	

Table 3. BCP47-polyglossia language name matching (continued)

BCP-47 tag	Polyglossia name	Polyglossia options
vi	vietnamese	
zh	chinese	
zh-CN	chinese	variant=simplified [default]
zh-TW	chinese	variant=traditional
zsm	malay	variant=malaysian [default]

2.5 Global options

Polyglossia can be loaded with the following global package options:

- ▶ babelshorthands ← = *true or false Globally activates babel shorthands whenever available. Please refer to sec. 2.6 for details.
- redefines the internal LATEX macros \markboth and \markright to the effect
 that the header text is explicitly set in the currently active language (i.e.,
 wrapped into \foreignlanguage{(lang)}{(...)}).

In earlier versions of polyglossia, — this option was enabled by default, but we now realize that it causes more problems than it helps (since it breaks if a package or class redefines \markboth or \markright), so it is now disabled by default. For backwards compatibility, the option nolocalmarks which used to switch off the previous default, and now equals the default, is still available.

► luatexrenderer ← = (renderer) (default value: Harfbuzz) determines which font renderer is used with LuaTeX output. The correct font renderer is essential particularly for non-Latin scripts. By default, polyglossia uses the Harfbuzz renderer that has been introduced to LuaTeX in 2019 (TeXLive 2020), as this gives the best results generally. If you want to use a different renderer, you can specify this here (or individually for specific fonts via the optional argument of the font selection commands). Please refer to the fontspec manual for supported values and for details on how to change the renderer for individual fonts.

luatexrenderer=none disables polyglossia's automatic renderer setting.

verbose = *true or false determines whether info messages and (some of the) warnings issued by LTEX, fontspec and polyglossia are output.

V1.1.1

V1.2.0

2.6 **Shorthands**

Babel has introduced the nifty feature of "shorthands" for some of the languages it supports. Shorthands make use of active characters to provide quick access to glyphs and formatting peculiarities that are common in a respective language (e.g., "a for German umlaut (\(\frac{a}{a}\)\) in case this is not available on your keyboard). Polyglossia has adopted this feature, we call it babelshorthands.

Shorthands need to be activated for the respective language, or can be activated globally, via the boolean option babelshorthands (either passed globally when loading polyglossia or to a specific language when loading it).

Shorthands are implemented currently for Afrikaans, Belarusian, Catalan, Croatian, Czech, Dutch, Finnish, Georgian, German, Italian, Latin, Mongolian, Occitan, Piedmontese, Polish, Portuguese, Russian, Slovak, and Ukrainian, and their number and function differs between these languages. Please refer to the respective language descriptions (sec. 6) for detailed elaborations.

If you want to re-use the shorthands defined for a specific language in a different language, you can do so by using in preamble: ←

\inheritbabelshorthands{(source language)}{(target language)} in order to input and activate the shorthands defined for the (source language) in the (target language). Both languages will be loaded as "other" languages if they have not been loaded yet. If one of the languages does not exist, or if the (source language) does not provide any shorthands, you will get an error

Note, also, that you can only use \inheritbabelshorthands once per language. Subsequent calls will overwrite previous ones (and also the shorthand that might be defined for a (target language) in the first place).

If you want to enable the shorthands of a specific language inline, also when the language itself is not active (but loaded in the preamble), you can do so by means of \leftarrow

V2.0 \usebabelshorthands

\usebabelshorthands{\language\}

The effect of this is local to groups. If you want to disable any active shorthands, you can use \usebabelshorthands{none}.

Language-switching commands

Recommended commands

V1.46

\text(lang) For each activated language the command \text(lang)[(options)]{(...)} (as available for short insertions of text in that language.

> For example \textrussian{\today} and \textlang{russian}{\today} yield 11 сентября 2025 г. The commands switch to the correct hyphenation patterns,

V2 0 \inheritbabelshorthands they activate some extra features for the selected language (such as extra spacing before punctuation in French), and they translate the date when using \today. They do not, however, translate so-called *caption strings*, *i.e.*, "chapter", "figure" etc., to the local language (these remain in the currently active 'outer' language).

(lang) (env.)
lang
V1.47

The environment (lang), which is also available for any activated language (as well as the equivalent \begin{lang}[(options)]{(lang)}... \end{lang} (-), is meant for longer passages of text. It behaves slightly different than the \text(lang) and \textlang commands: It does everything the latter do, but additionally, the caption strings are translated as well, and the language is also passed to auxiliary files, the table of contents and the lists of figures/tables. Like the commands, the environment provides the possibility of setting language options locally. For instance the following allows us to quote the beginning of Homer's Iliad:

```
\begin{quote}
\begin{greek}[variant=ancient]

μῆνιν ἄειδε θεὰ Πηληϊάδεω Ἀχιλῆος οὐλομένην, ἣ μυρί' Ἀχαιοῖς

ἄλγε' ἔθηκε, πολλὰς δ' ἰφθίμους ψυχὰς Ἀϊδι προίἄψεν ἡρώων,

αὐτοὺς δὲ ἐλώρια τεῦχε κύνεσσιν οἰωνοῖσί τε πᾶσι, Διὸς δ'

ἐτελείετο βουλή, ἐξ οὖ δὴ τὰ πρῶτα διαστήτην ἐρίσαντε Ἀτρείδης

τε ἄναξ ἀνδρῶν καὶ δῖος Ἀχιλλεύς.

\end{greek}
\end{quote}
```

μῆνιν ἄειδε θεὰ Πηληϊάδεω ἀχιλῆος οὐλομένην, ἣ μυρί' ἀχαιοῖς ἄλγε' ἔθηκε, πολλὰς δ' ἰφθίμους ψυχὰς αιδι προϊαψεν ἡρώων, αὐτοὺς δὲ ἑλώρια τεῦχε κύνεσσιν οἰωνοῖσί τε πᾶσι, Διὸς δ' ἐτελείετο βουλή, ἐξ οὖ δὴ τὰ πρῶτα διαστήτην ἐρίσαντε ἀτρεΐδης τε ἄναξ ἀνδρῶν καὶ δῖος ἀχιλλεύς.

Arabic (env.) Note that for Arabic one cannot use the environment arabic, as \arabic is defined internally by LTEX. In this case we need to use the environment Arabic instead.

3.2 Babel commands

Some macros defined in babel's hyphen.cfg (and thus usually compiled into the XTEX and LuaETEX format) are redefined, but keep a similar behaviour.

\selectlanguage \foreignlanguage otherlanguage(env)

otherlanguage* (env.)

- ▶ \selectlanguage[⟨options⟩]{⟨lang⟩}
- ▶ \foreignlanguage[⟨options⟩]{⟨lang⟩}{⟨...⟩}
- ▶ \begin{otherlanguage}[(options)]{(lang)} ... \end{otherlanguage}
- ▶ \begin{otherlanguage*}[(options)]{(lang)} ... \end{otherlanguage*}

hyphenrules (*env.*) V1.50

The (hyphenrules) environment only switches the hyphenation patterns to the one associated with the language (lang) (or the language variety as specified via (options)). It does no further language-specific change.

Since the XHETEX and LualETEX format incorporate babel's hyphen.cfg, the low-level commands for hyphenation and language switching defined there are in principal also accessible. Note, however, that the availability of such low-level commands is not guaranteed, as hyphen.cfg, which is out of polyglossia's control, is (or at least has been) subject to regular change.

3.3 Other commands

The following commands are probably of lesser interest to the end user, but ought to be mentioned here.

\selectbackgroundlanguage

\resetdefaultlanguage

\normalfontlatin

\rmfamilylatin
\sffamilylatin
\ttfamilylatin
\latinalph
\latinAlph

► \selectbackgroundlanguage{(lang)}: this selects the global font setup and the numbering definitions for the default language.

► \resetdefaultlanguage[⟨options⟩]{⟨lang⟩} (experimental): Switches the default language to another one in the middle of a document: *this may have adverse effects*!

- ► \normalfontlatin: in an environment where \normalfont has been redefined to a non-latin script, this will reset to the font defined with \setmainfont etc. In a similar vein, it is possible to use \rmfamilylatin, \sffamilylatin, and \ttfamilylatin.
- ▶ \latinalph{(counter)}: Representation of counter as a lower-case letter: 1 = a, 2 = b, etc.
- \latinAlph{(counter)}: Representation of counter as a upper-case letter: 1 = A, 2 = B, etc.

3.4 Setting up alias commands

By means of the macro ←

v1.46 \setlanguagealias

 $\setlanguagealias[(options)]{(language)}{(alias)}$ you can define alias commands for specific language (variants). *E.g.*,

```
\setlanguagealias[variant=austrian]{german}{AT}
```

will define a command \textAT as well as an environment {AT} which will link towards the command \textgerman[variant=austrian] and the environment

{german}[variant=austrian], respectively. The aliases can also be used in the language switching commands described in section 3.1 and 3.2. Note, though, that the usual restrictions for command names apply, so something such as de-AT or de_AT will not work since - and _ are not allowed in command names (the same holds true for any non-ASCII character and for digits).

For the latter case, and for the case where an alias would clash with an existing command (e.g., \fi) or a \text{...} command (e.g., \textit), a starred version \setlanguagealias* \setlanguagealias* is provided which does neither define a \text(alias) command nor an (alias) environment, but which will set up the alias for everything else, including \textlang{(alias)} and \begin{lang}{(alias)}.

> Polyglossia comes with some aliases predefined, namely aliases for babel language names (see sec. 2.3) and for IETF BCP-47 language tags (the latter via \setlanguagealias*; see sec. 2.4).

Font setup

With polyglossia it is possible to associate a specific font with any script or language that occurs in the document. That font should always be defined as \(script)font or \(language)font. Note that (language) points to the polyglossia language name, (script) might point either to an OpenType script name as defined by fontspec (e.g., Latin) \leftarrow or a BCP-47 script tag (e.g., Latn), though the script is fully lower-cased in the \(script)\) font command.

For instance, if the default font defined by \setmainfont does not support Greek, then one can define the font used to display Greek with:

\newfontfamily\greekfont[Script=Greek, \langle ...\rangle] { \langle font \rangle }

If you want to setup a blackletter font specifically for the German blackletter script variant, you might do so by:

\newfontfamily\latffont[\(\...\)] {\(font\) }

Setting up a font specifically for traditional Chinese is possible via:

\newfontfamily\hantfont[Script=CJK, \(...\)]{\(font\)}

Note that polyglossia will use the font defined as is, so assure to do all necessary settings (please refer to the fontspec documentation for details). For instance, if \arabicfont is explicitly defined, then the option Script=Arabic should be included in that definition.

If a specific sans serif or monospace ('teletype') font is needed for a particular script or language, it can be defined by means of $\leftarrow \$ \(script\)fontsf or \(language)fontsf and \(script)fonttt or \(language)fonttt, respectively.

Whenever a new language is activated, polyglossia will first check whether a font has been defined for that language. If this is not the case, it will check whether a font associated with the BCP-47 script tag of the current language is defined. If this also isn't the case, polyglossia will finally check (but this only

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for languages in non-Latin scripts) whether there is a font associated with the OpenType script tag. If none of these fonts is defined, polyglossia will use the currently active font as defined by \setmainfont, \setsansfont or \setmonofont and – in the case of OpenType fonts – will attempt to turn on the appropriate OpenType tags for the script and language used, in case these are available in the font, by means of fontspec's \addfontfeature. If the current font does not appear to support the script of that language, an error message is displayed.

5 Adapting hyphenation

5.1 Hyphenation exceptions

TeX provides the command \hyphenation{(exceptions)} to globally define hyphenation exceptions which override the hyphenation patterns for specified words. The command takes as argument a space-separated list of words where hyphenation points are marked by a dash (if no dash is used, the respective word is not hyphenated at all):

```
\hyphenation{%
  po-ly-glos-sia
  LaTeX
}
```

These exceptions, however, apply only to the currently active language.

In addition to this, polyglossia provides the command ←

\pghyphenation[(options)]{(lang)}{(exceptions)}

which can be used to define exceptions that only apply to a specific language or language variant, respectively.⁵

5.2 Hyphenation thresholds

Polyglossia sets reasonable defaults for the hyphenation thresholds of each language, *i.e.*, the number of characters that must at least be there at the beginning or end of a word before it is hyphenated (\lefthyphenmin and \righthyphenmin in TeX). For instance, with English, this threshold is 2 at the beginning ('left') and 3 at the end ('right'), so a word will not be hyphenated within the first two characters at the beginning and the last three characters at the end.

To change this value, polyglossia provides the command \leftarrow

\setlanghyphenmins[(options)]{(lang)}{(l)}{(r)}

where (lang) is to be replaced with the respective language name or alias, (options) can be used to delimit the modification to a particular variety (e.g.,

V1.45 \pghyphenation

V1.50 \setlanghyphenmins

⁵More precisely, it applies to all languages or varieties that share the same hyphenation patterns. Hence, for instance, all variants of **german** with **spelling=new** will share the same exceptions, as opposed to **spelling=old** which uses different patterns.

via variant or spelling), (1) with the left threshold value (e.g., 3), and $\langle r \rangle$ with the right one (e.g., $setlanghyphenmins[spelling=old]{german}{4}{4}$). This setting can be changed repeatedly in the preamble and the document body. It applies to all subsequent text in the respective language (variety), but only after the next language switch.

Hyphenation disabling 5.3

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In some very specific contexts (such as music score creation), TEX hyphenation is something to avoid completely as it may cause troubles. Polyglossia provides \disablehyphenation two functions: \disablehyphenation and \enablehyphenation. Note that if you \enablehyphenation select a new language while hyphenation is disabled, it will remain disabled. If you re-enable it, the hyphenation patterns of the currently selected language will be activated.

Language-specific options and commands 6

This section gives a list of all languages for which options and end-user commands are defined. Note the following conventions:

- ▶ The preset value of each option (i.e., the setting that applies by default, if the option is not explicitly set) is given in *italics*.
- If an option key may be used without a value, the value that applies for value-less keys is marked by a preceding *asterisk.

For instance, babelshorthands = *true or false means that babelshorthands is false by default in the respective language, and that passing babelshorthands (without value) is equivalent to passing babelshorthands=true.

6.1 afrikaans

Options:

If this is turned on, the following shorthands defined for fine-tuning hyphenation and micro-typography of Afrikaans words are activated:

- adds a hyphenation point that does still allow for hyphenation at the points preset in the hyphenation patterns (as opposed to \ - in default T_FX).
- for a hyphen sign without a breakpoint. Useful for cases where the hyphen should stick at the following syllable.
- "| disables a ligature at this position.

▶ babelshorthands ← = *true or false

allows for a line break at this position (without hyphenation sign).

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"/ a slash that allows for a subsequent line break. As opposed to \slash, hyphenation at the breakpoints preset in the hyphenation patterns is still allowed.

6.2 arabic

Options:

- calendar = gregorian or islamic (= hijri)
- ▶ hijricorrection = (integer) (default value: 0)

If calendar=hijri or calendar=islamic is selected, \today will output the date according to the lunar Islamic (Hijra) calendar. This option allows to shift the day of the output with respect to the current date. Both positive and negative integer values are allowed (negative decrease the day value). This corresponds to the optional argument of the \Hijritoday command which can be used to output Hijri dates irrespective of the calendar option (see sec. 10.2).

- ► locale = default, mashriq, libya, algeria, tunisia, morocco, mauritania This setting influences the spelling of the month names for the Gregorian calendar, as well as the form of the numerals (unless overridden by the following option). Recommended settings are default for Egypt, Sudan, Yemen and the Gulf states, and mashriq for Iraq, Syria, Jordan, Lebanon and Palestine.
- ► numerals = mashriq (= eastern ←) or maghrib (= western ←)
 Use Eastern Arabic (a.k.a. Indic-Arabic) numerals (mashriq or eastern) or
 Western numerals (maghrib or western). The latter is the default when locale=algeria, tunisia, or morocco, the former is the default with all other Arabic locales.
- ► sectionsep ← = (code) (default value: .)
 This option allows to customize the separator between chapters, sections, and subsections (a dot by default), e.g., sectionsep=-. This might be useful particularly with numerals=mashriq or eastern, as the dot looks too similar to the zero in many fonts.
- ▶ abjadalph ← = *true or false Set this to true if you want the alphabetic counters to be output using \abjadalph rather than \abjad. Note that this limits the counter scope to 28 (see \abjadalph below).
- abjadjimnotail ← = *true or false
 Set this to true if you want the abjad form of the number three to be as in the manuscript tradition instead of the modern usage -.

Commands:

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Example: \abjad{1863} yields غضسج.

\abjadmaghribi

• \abjadmaghribi outputs Arabic *abjad* numbers according to the Maghrib varieties. Example: \abjadmaghribi{1863} yields شظصب.

\abjadalph V1.50 \abjadalph ← steps through the Arabic alphabet, thus it can only be used up to 28. Example: \textarabic{\abjadalph{18}} yields ω.

\aemph

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\aemph to emphasize text with \overline. ← \textarabic{\aemph{\left}}
 yields _____. This command is also available for Farsi, Urdu, etc.

6.3 armenian

Options:

- variant ← = eastern or western
 - ▶ numerals ← = armenian or arabic
 - ► capitalyiwn ← = *true or false

If this is set to true. \MakeUpperca

If this is set to true, \MakeUppercase will upcase the ligature of letters ech and yiwn to capital ech and yiwn. This conforms to the output outside Armenian language selection. By default (and with this option set to false), \MakeUppercase upcases the ech and yiwn ligature to capital ech and vew, adhering to Armenian reformed spelling regulations. Note that this feature requires LTEX kernel 2023/06 at least.

6.4 belarusian ←

Options:

▶ babelshorthands = *true or false

If this is turned on, the following shorthands are activated:

- '- adds a hyphenation point that does still allow for hyphenation at the points preset in the hyphenation patterns (as opposed to \-).
- "= adds an explicit hyphen with a breakpoint, allowing for hyphenation at the other points preset in the hyphenation patterns (as opposed to plain -).
- "~ for a hyphen sign without a breakpoint. Useful for cases where the hyphen should stick at the following syllable.
- "| disables a ligature at this position.
- "" allows for a line break at this position (without hyphenation sign).
- ", thinspace for initials with a breakpoint in following surname.
- "' for German left double quotes (looks like ").
- "' for German right double quotes (looks like ").
- "< for French left double quotes (looks like «).
- "> for French right double quotes (looks like »).

There are also three shorthands for the Cyrillic dash (тире), which is shorter than the emdash but longer than the endash (namely 0.8 em). Note that, since it is not covered by unicode, this character is faked by telescoping two endashes:

- "--- Cyrillic dash for the use in normal text. This requires preceding space in input (trailing space is optional) and prints with a non-breakable thin space before and after the dash.
- "--~ Cyrillic dash for the use in compound names (surnames). As opposed to "--- this removes any space before and after the dash.
- "--* Cyrillic dash for denoting direct speech. This adds a larger space after the dash. Space before the dash is output as is.
- numerals = arabic, cyrillic-alph or cyrillic-trad
 Uses either Arabic numerals or Cyrillic alphanumerical numbering. The two Cyrillic variants differ as follows:
 - cyrillic-alph steps through the Cyrillic alphabet. Thus it can only be used up to 30.
 - ► cyrillic-trad (= cyrillic) uses a traditional Cyrillic alphanumeric system. 6 It supports numbers up to 999 999.
- spelling = modern or classic (= tarask)
 With spelling=classic, captions and dates adhere to the Taraškievica (or Belarusian classical) orthography rather than the standard orthography.

Commands:

\Asbuk

► \Asbuk: produces uppercased Cyrillic alphanumerals, for environments such as enumerate. It steps through the Cyrillic alphabet and thus it can only be used up to 30. The command takes a counter as argument, e.g., \textbelarusian{\Asbuk{page}} produces C.

\asbuk

▶ \asbuk: same as \Asbuk but in lowercase.

\AsbukTrad

► \AsbukTrad: same as \Asbuk but using the traditional Cyrillic alphanumeric numbering which supports numbers up to 999 999.

E.g., \textbelarusian{\AsbukTrad{page}} produces KA.

\asbukTrad

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► \asbukTrad: same as \AsbukTrad but in lowercase.

6.5 bengali ←

Options:

- ▶ numerals = western, bengali, or devanagari
- changecounternumbering = *true or false
 Use specified numerals for headings and page numbers.

⁶See https://en.wikipedia.org/wiki/Cyrillic numerals.

6.6 catalan

Options:

▶ babelshorthands ← = *true or false Activates the shorthands "I and "L to type geminated I or L.

Commands:

▶ \l.l and \L.L \leftarrow can be used to type a geminated l, as in *collaborar*, similar to babel (the glyph U+00B7 MIDDLE DOT is used as a geminating sign).

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V1.1.1

 $chinese \leftarrow$ 6.7

Options:

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- variant = simplified (= cn), or traditional (= tw)
- ▶ numerals = arabic or chinese Uses either Arabic numerals or Chinese ideographic numbering.

\chinesenumeral

▶ \chinesenumeral (see section 8.3).

6.8 croatian

Options:

▶ babelshorthands ← = *true or false

If this is turned on, the following shorthands for fine-tuning hyphenation and micro-typography of Croatian words are activated.

- " [disables a ligature at this position.
- for an explicit hyphen with a breakpoint, allowing for hyphenation at the other points preset in the hyphenation patterns (as opposed to plain -).
- for a hyphen sign without a breakpoint. Useful for cases where the hyphen should stick at the following syllable.
- adds a hyphenation point that does still allow for hyphenation at the points preset in the hyphenation patterns (as opposed to \-).
- allows for a line break at this position (without hyphenation sign).
- a slash that allows for a subsequent line break. As opposed to \slash, hyphenation at the breakpoints preset in the hyphenation patterns is still allowed.

Furthermore, the following shorthands generate easy access to Croatian digraphs:

Commands:

- "dz Generates the digraph dž if the font provides it. If not, the two consecutive glyphs are output mimicking the digraph. Also available for "Dz (Dž) and "DZ (DŽ).
- "lj Generates the digraph lj if the font provides it. If not, the two consecutive glyphs are output mimicking the digraph. Also available for "Lj (Lj) and "LJ (LJ).
- "nj Generates the digraph nj if the font provides it. If not, the two consecutive glyphs are output mimicking the digraph. Also available for "Nj (Nj) and "NJ (NJ).

Finally, there are also four shorthands for quotation marks:

- "` for Croatian left double quotes (").
- "' for Croatian right double quotes (").
- "> for Croatian left guillemets (»).
- "< for Croatian right guillemets («).
- ▶ disabledigraphs $^7 \leftarrow$ = *true or false

If this is true, all Croatian digraphs (such as dž) will be replaced by the two consecutive letters, which is the most common way of typesetting them in Croatian. This can be useful if the Unicode digraphs in your font are broken (if the font does not have them, they are automatically mimicked by the two consecutive glyphs).

▶ localalph \leftarrow = *true or false

If true, alphanumeric counters will use a locally established version which excludes the characters (q), (w), (x) and (y) from alphabetic counting. Obviously this limits the counting range to 22.

▶ splithyphens ← = *true or false

According to Croatian typesetting conventions, if a word with a hard hyphen (such as *hrvatsko-engleski*) is hyphenated at this hyphen, a second hyphenation character is to be inserted at the beginning of the line that follows the hyphenation (*hrvatsko-/-engleski*). By default, this is done automatically (if you are using LuaTeX, the luavlna package is loaded to achieve this). Set this option to false to disable the feature.

6.9 czech

Options:

▶ babelshorthands ← = *true or false
If this is turned on, the following shorthands for Czech are activated:

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⁷Up to version 1.53, the option was called disableligatures. The old option is kept for backwards compatibility, but the use is discouraged.

- "= for an explicit hyphen sign which is repeated at the beginning of the next line when hyphenated, as common in Czech typesetting (only needed with splithyphens=false).
- "' for Czech left double quotes (").
- "' for Czech right double quotes (").
- "> for Czech left double guillemets (»).
- "< for Czech right double guillemets («).
- ▶ splithyphens ← = *true or false

According to Czech typesetting conventions, if a word with a hard hyphen (such as je-li) is hyphenated at this hyphen, a second hyphenation character is to be inserted at the beginning of the line that follows the hyphenation (je-/-li). By default, this is done automatically \leftarrow (if you are using LuaTeX, the luavlna package is loaded to achieve this). Set this option to false to disable the feature.

▶ vlna ← = *true or false

According to Czech typesetting conventions, single-letter words (non-syllable prepositions) must not occur at line ends. Polyglossia takes care of this automatically by default \leftarrow (if you are using LuaTeX, the luavlna package is loaded to achieve this). Set this option to false to disable the feature.

6.10 dutch

Options:

▶ tremahyphenation ← = *true or false

Following Dutch orthography, words with tremata (such as *geëxecuteerd*) lose the trema on hyphenation before the trematized letter (*ge-executeerd*). This is achieved by polyglossia by making those letters active. If you set this option to false, this mechanism is deactivated (and the hyphenation wrong, but you can still use the babelshorthands mentioned below).

▶ babelshorthands ← = *true or false
If this is turned on the following shorthands defined for fi

If this is turned on, the following shorthands defined for fine-tuning hyphenation and micro-typography of Dutch words are activated:

- "a ← an ⟨ä⟩ (a with trema) which is hyphenated as ⟨-a⟩ as required by the Dutch standards. Also implemented for the other vowels (e, i, o, u), both lower and uppercase.
- "y \leftarrow the ij ligature.
- "Y \leftarrow the IJ ligature.

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- V1.46

v1.63

V1.1.1

v1.63

v1.63

- "- adds a hyphenation point that does still allow for hyphenation at the points preset in the hyphenation patterns (as opposed to \- in default TpX).
- "~ for a hyphen sign without a breakpoint. Useful for cases where the hyphen should stick at the following syllable.
- "| disables a ligature at this position.
- "" allows for a line break at this position (without hyphenation sign).
- "/ a slash that allows for a subsequent line break. As opposed to \slash, hyphenation at the breakpoints preset in the hyphenation patterns is still allowed.
- In addition, the macro \- is redefined to allow hyphens in the rest of the word (equivalent to "-).

6.11 english

Options:

- variant = american (= us), usmax (same as american but with additional hyphenation patterns), british (= uk), australian, canadian ←, or newzealand
- ordinalmonthday = *true or falseThe default value is true for variant=british.

6.12 esperanto

Commands:

\hodiau \hodiaun ▶ \hodiau and \hodiaun are special forms of \today. The former produces the date in Esperanto preceded by the article (*la*), which is the most common date format. The latter produces the same date format in accusative case.

6.13 finnish

Options:

▶ babelshorthands ← = *true or false

If this is turned on, the following shorthands for fine-tuning hyphenation and micro-typography of Finnish words are activated:

"- adds an explicit hyphen without a breakpoint, allowing for hyphenation at the other points preset in the hyphenation patterns. Useful for cases where the hyphen should stick at the following syllable (e.g., pakastekaapit ja "-arkut).

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- "= for a hyphen sign without a breakpoint that does also remove all other breakpoints in the word (as opposed to "-).
- "~ functionally equivalent to "- (provided for backwards compatibility reasons).
- "| disables a ligature at this position.
- "" allows for a line break at this position (without hyphenation sign).
- "/ a slash that allows for a subsequent line break. As opposed to \slash, hyphenation at the breakpoints preset in the hyphenation patterns is still allowed.
- hyphens ← = default, babel, school
 Hyphenation in Finnish is peculiar since there are many rather long words.
 In order to select a suitable hyphenation pattern, three different options are provided:
 - ► The default patterns as used by 上上X are rather strict and try to prevent hyphenation at points which are valid but considered suboptimal from an ortho-typographic point of view (e.g., hyphenation between two vowels), with the drawback that simple words are sometimes not being hyphenated at points where this would be valid, and lines might become unevenly spaced.
 - ► The babel support for Finnish by default tweaks some hyphenationrelated values (such as \hyphenpenalty) for Finnish. If you want to replicate this with polyglossia, select babel (this still uses the default patterns).
 - ► The school setting, finally, employs alternative (experimental) hyphenation patterns rather than the default Finnish patterns. These (so-called 'School') patterns allow hyphenation at all valid points, including hyphenation points that are considered sub-optimal from an ortho-typographic point of view. See https://github.com/hyphenation/basic-finnish for details.

6.14 french

Options:

- variant = french, canadian, acadian ← or swiss ← Currently, the only difference between the four variants is that swiss uses thincolonspace=true by default since this conforms to the Swiss conventions.
- ▶ autospacing = *true or false

⁸This equals the previous boolean option **schoolhyphens**, which is still supported for backwards compatibility.

One of the most distinct features of French typography is the addition of extra spacing around punctuation and quotation marks (guillemets). By default, polyglossia adds these spaces automatically, so you don't need to enter them. This options allows you to switch this feature off globally.

▶ thincolonspace ← = *true or false

With variant=swiss, the default value is true. If false, a full (non-breaking) interword space is inserted before a colon. If true, a thinner space – as before; ,!, and? – is used. Note that this option must be set after the variant option.

▶ autospaceguillemets⁹ = *true or false

If you only want to disable the automatic addition of spacing after opening and before closing guillemets (and not at punctuation), set this to *false*. Note that the more general option *autospacing* overrides this.

▶ autospacetypewriter¹⁰ ← = *true or false
By default, automatic spacing is disabled in typewriter font. If this is enabled, spacing in typewriter context is the same as with roman and sans serif font, depending on the autospacing and autospaceguillemets set-

frenchfootnote = *true or false

tings (note that this was the default up to v. 1.44).

If true, footnotes start with a non-superscripted number followed by a dot, as common in French typography. Note that this might interfere with the specific footnote handling of classes or packages. Also note that this option is only functional (by design) if French is the main language.

▶ frenchitemlabels ← = *true or false

If *true*, itemize item labels use em-dashes throughout, as common in French typography. Note that this option is only functional (by design) if French is the main language. Also, it might interfere with list packages such as enumitem.

▶ frenchpart ← = *true or false

By default, polyglossia modifies part headings to match French conventions (*Première partie* rather than *Partie I*). Next to the standard classes, specifics of KOMA-script, memoir and the titlesec package are taken into account. With other classes or packages, redefinition might fail if these have particular part settings. In such case, or if you don't want the redefinition, you can switch off the feature by passing *false* to this option.

- ▶ itemlabels ← = (code) (default value: \textemdash)
 If frenchitemlabels is true, you can customize here the used item label of all levels.
- ▶ itemlabeli ← = (code) (default value: \textemdash)
 If frenchitemlabels is true, you can customize here the used item label of

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v1.46

 $^{^9\}mathrm{Up}$ to version 1.44, the option was called automaticspaces around guillemets. For backwards

the first level.

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▶ itemlabelii ← = (code) (default value: \textemdash)
If frenchitemlabels is true, you can customize here the used item label of
the second level.

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▶ itemlabeliii ← = (code) (default value: \textemdash)
If frenchitemlabels is true, you can customize here the used item label of the third level.

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▶ itemlabeliv ← = ⟨code⟩ (default value: \textemdash)
If frenchitemlabels is true, you can customize here the used item label of the fourth level.

Commands:

\NoAutoSpacing V1.45 ► \NoAutoSpacing ← disables automatic spacing around punctuation and quotation marks in all following text. The command can also be used locally if braces are used for grouping: {\NoAutoSpacing foo:bar}

\AutoSpacing

► \AutoSpacing ← enables automatic spacing around punctuation and quotation marks in all following text. The command can also be used locally if braces are used for grouping: {\AutoSpacing regarde!}

$v_{1.45}$ 6.15 gaelic \leftarrow

Options:

variant = irish or scottish

6.16 georgian ←

Options:

► babelshorthands = *true or false

If this is turned on, the following shorthands are activated:

- '- adds a hyphenation point that does still allow for hyphenation at the points preset in the hyphenation patterns (as opposed to \-).
- "= adds an explicit hyphen with a breakpoint, allowing for hyphenation at the other points preset in the hyphenation patterns (as opposed to plain -).
- "~ for a hyphen sign without a breakpoint. Useful for cases where the hyphen should stick at the following syllable.
- "| disables a ligature at this position.
- "" allows for a line break at this position (without hyphenation sign).

compatibility reasons, the more verbose old option is still supported.

¹⁰Babel's syntax OriginalTypewriter is also supported.

- ", thinspace for initials with a breakpoint in following surname.
- "' for German-style left double quotes (looks like ").
- "' for German-style right double quotes (looks like ").
- "< for French-style left double quotes (looks like «).
- "> for French-style right double quotes (looks like »).

There are also three shorthands for the Cyrillic dash (тире), which is shorter than the emdash but longer than the endash (namely 0.8 em). Note that, since it is not covered by unicode, this character is faked by telescoping two endashes:

- "--- Cyrillic dash for the use in normal text. This requires preceding space in input (trailing space is optional) and prints with a non-breakable thin space before and after the dash.
- "--~ Cyrillic dash for the use in compound names (surnames). As opposed to "--- this removes any space before and after the dash.
- "--* Cyrillic dash for denoting direct speech. This adds a larger space after the dash. Space before the dash is output as is.
- numerals = arabic or georgian
 Uses either Arabic numerals or Georgian alphanumerical numbering.
- oldmonthnames = *true or falseUses traditional Georgian month names.

6.17 german

Options:

▶ variant = german, austrian, or swiss ←

▶ capitaleszett ← = *true or false

tains the respective glyph.

Setting variant=austrian or variant=swiss uses some lexical variants. With spelling=old, variant=swiss furthermore loads specific hyphenation patterns.

- spelling = new (= 1996) or old (= 1901)
 Indicates whether hyphenation patterns for traditional (1901) or reformed (1996) orthography should be used. The latter is the default.
- If this is set to true, \MakeUppercase will upcase the eszett character \langle \beta \rangle to the capital counterpart \langle \beta \rangle that has been introduced to Unicode in 2008 and standardized in German regulations in 2017, rather than \langle S \rangle. Note that this feature requires \text{ETFX} kernel 2023/06 at least and a font that con-
- script ← = latin or blackletter ← (= fraktur)
 Setting script=blackletter adapts the captions for typesetting German in blackletter type, using the 'long s' ⟨f⟩ where appropriate.

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▶ babelshorthands ← = *true or false

If this is turned on, all shorthands defined in babel for fine-tuning hyphenation and micro-typography of German words are activated.

- "ck for ck to be hyphenated as k-k (1901 spelling).
- "ff for ff to be hyphenated as ff-f (1901 spelling); this is also available for the letters l, m, n, p, r and t.
- "| disables a ligature at this position (e.g., Auf" | lage).
- "= for an explicit hyphen with a breakpoint, allowing for hyphenation at the other points preset in the hyphenation patterns (as opposed to plain -).
- "~ for a hyphen sign without a breakpoint. Useful for cases where the hyphen should stick at the following syllable, *e.g.*, bergauf und "~ab.
- "- adds a hyphenation point that does still allow for hyphenation at the points preset in the hyphenation patterns (as opposed to \-).
- "" allows for a line break at this position (without hyphenation sign); e.g., (pseudo"~)""wissenschaftlich.
- "/ a slash that allows for a subsequent line break. As opposed to \slash, hyphenation at the breakpoints preset in the hyphenation patterns is still allowed.
- "* — An asterisk which assures the word can still be hyphenated at its defined breakpoints. Useful if you want to employ gender-sensitive writing (,gender star'). Similar shorthands are available for the alternative gender-sensitive spellings, ": and "_.
- "x — Inserts a gender mark which assures the word can still be hyphenated at its defined breakpoints. This is predefined to * but can be globally redefined by redefining the macro \mkgender (see below).

There are also four shorthands for quotation signs:

- "` for German-style left double quotes (")
- "' for German-style right double quotes (")
- "< for French-style left double quotes («)
- "> for French-style right double quotes (»).

Commands:

\mkgender

► \mkgender \leftarrow Defines which gender mark is output by the babelshorthand "x. Predefined to \def\mkgender{*}.

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6.18 greek

Options:

- variant = monotonic (= mono), polytonic (= poly), or ancient
- ▶ numerals = greek or arabic
- ▶ capitaliota ← = *true or false

If this is set to true, \MakeUppercase will upcase the ypogegrammeni (subscript muted iota) to capital iota. By default (and with this option set to false), \MakeUppercase retains the subscript versions. Note that this feature requires LaTeX kernel 2023/06 at least.

▶ koppa ← = modern or archaic While modern Greek uses the letter koppa in its modern form (4) to represent the number 90, classicists often prefer the archaic koppa variant (o). Polyglossia uses by default the modern form in all variants (with numerals=greek). If you need the archaic form, use koppa=archaic.

Commands:

► \Greeknumeral (= \Greeknumber) and \greeknumeral (= \greeknumber) (see section 8.3). ► The command \atticnumeral (= \atticnum) displays numbers using the

acrophonic numbering system (defined in the Unicode range U+10140-U+10174). Please refer to the documentation of the xgreek package for more details on Attic numbering.

► ← The macros \greeknumeralsix, \greeknumeralSix, \greeknumeralninety and \greeknumeralNinety determine how the numbers 6 and 90 are represented in lower and uppercase output. By default, this is ς (lowercase 6), ζ (uppercase 6), ζ (lowercase ninety), and ζ (uppercase ninety) – or, with **koppa=arachaic**, o (lowercase ninety), and O (uppercase ninety). You can redefine the macros if you need other representations.

6.19 hebrew

Options:

- ► numerals = hebrew or arabic
- ► calendar = hebrew or gregorian
- ► marcheshvan = *true or false

If true, the second month of the civil year will be output as מרחשון (Marcheshvan) rather than חשון (Heshvan), which is the default.

▶ fullyear ← = *true or false causes years from the current millennium to be printed with the thousands digit (he-tav-shin-samekh-gimel). Without this option, thousands are not printed for the current millennium.

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\greeknumeralninety \greeknumeralNinety

\Greeknumeral

\Greeknumber

\greeknumeral

\areeknumber

\atticnumeral \atticnum

\greeknumeralsix

\greeknumeralSix

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▶ **transliteration** \leftarrow = academy or *alt*

With value academy, transliteration follows the recommendations of the Hebrew Language Academy. The default (alt) uses the received settings of babel (hebcal) and polyglossia (hebrewcal).

Commands:

\hebrewnumeral

- ► \hebrewnumeral (= \hebrewalph) (see section 8.3).
- \hebrewalph ▶ \aemph (see section 6.2).

\aemph

6.20 hindi ←

V1.2.0

Options:

▶ numerals = western or devanagari

6.21 hungarian

Options:

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- ► swapstrings ← = *all, captions, headings, headers, hheaders, or none In Hungarian, some caption strings need to be in a different order than in other languages (e.g., 1. fejezet instead of Chapter 1). By default, polyglossia tries hard to provide the correct order for different classes and packages (standard classes, KOMA-script, memoir, and titlesec package should work, as well as fancyhdr and caption). However, since the definition of these strings is not standardized, the redefinitions might not work and even interfere badly if you use specific classes or packages that redefine the respective strings themselves. In this case, you can disable some or all changes. The possibilities are:
 - ▶ all: Redefine figure and table captions, part and chapter headings, and running headers (= default setting)
 - captions: Redefine figure and table captions only
 - ▶ headings: Redefine part and chapter headings only
 - ▶ headers: Redefine running headers only
 - hheaders: Redefine part and chapter headings as well as running headers
 - ▶ none: Do not redefine anything
- ▶ forceheadingpunctuation ← = *true or false

Section numbers always have a trailing punctuation in Hungarian (as in 1.1. as opposed to 1.1). For compatibility reasons, the default option is false, thus polyglossia does not touch heading punctuation, so this will be whatever the class or a package determines. Set this option to true, and polyglossia appends a period after the section counters, and adjusts the header punctuation (as in 1. fejezet. as opposed to 1. fejezet).

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Commands:

\ontoday \ondatehungarian • \ontoday (= \ondatehungarian): special form of \today which produces a slightly different date format as used in prepositional phrases (such as 'on February 10th') in Hungarian.

6.22 italian

Options:

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▶ babelshorthands ← = *true or false

Activates the " character as a switch to perform etymological hyphenation when followed by a letter. Furthermore, the following shorthands are activated:

- "" double raised open quotes (the Italian keyboard misses the backtick).
- "< open guillemet (looks like «).
- "> closing guillemet (looks like »).
- "/ a slash that allows for a subsequent line break. As opposed to \slash, hyphenation at the breakpoints preset in the hyphenation patterns is still allowed.
- "- adds a hyphenation point that does still allow for hyphenation at the points preset in the hyphenation patterns (as opposed to \-).

$_{\text{V1.40.0}}$ 6.23 korean \leftarrow

Options:

▶ variant = plain, classic, or modern

These variants control spacing before/after CJK punctuations.

- ► plain: Do nothing
- classic: Suitable for text with no interword spaces. This option forces CJK punctuations to half-width, and inserts half-width glue around them.
- modern: Suitable for text with interword spaces. This option forces
 CJK punctuations to half-width, and inserts small (half of interword space) glue around them.
- ► captions = hangul or hanja

► swapstrings ← = *all, headers, headings, or none

With this option, Korean-style part and chapter headings, and running headers are available. It is similar to Hungarian (see 6.21) except that figure and table captions are not touched.

- all: Redefine part and chapter headings, and running headers (= default setting)
- headings: Redefine part and chapter headings only

- ▶ headers: Redefine running headers only
- ▶ none: Do not redefine anything

$v_{1.45}$ 6.24 kurdish \leftarrow

Options:

- variant = kurmanji or sorani
- ► **script** = arabic or latin

Defaults are arabic for Sorani and latin for Kurmanji.

▶ numerals = western or eastern

Defaults are western for Latin and eastern for Arabic script, depending on the selection above.

▶ sectionsep ← = (code) (default value: .)

This option allows to customize the separator between chapters, sections, and subsections (a dot by default), *e.g.*, **sectionsep=-**. This might be useful particularly with **numerals=eastern**, as the dot looks too similar to the zero in many fonts.

Set this to true if you want the *abjad* form of the number three to be ≠ − as in the manuscript tradition – instead of the modern usage ₹.

Commands:

\ontoday

• \ontoday: special form of \today which produces a slightly different date format as used in prepositional phrases (as in 'on February 10th'). Only available for Latin script.

\abjad

- ▶ \abjad (see section 8.3)

6.25 lao ←

Options:

► numerals = lao or arabic

6.26 latin

Options:

▶ variant = classic, medieval, modern, or ecclesiastic ←

These variants refer to different spelling conventions. The classic and the medieval variant do not use the letters U and v, but only V and u. This concerns predefined terms like month names as well as the behaviour of the \MakeUppercase and the \MakeLowercase command. The medieval and the ecclesiastic variant use the ligatures α and α . See table 4 for examples.

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Table 4. Spelling differences between the Latin language variants. The capitalization of month names and the use of i/j may be affected by the capitalizementh and the usej option.

classic	medieval	modern	ecclesiastic
Ianuarii	Ianuarii	Ianuarii	ianuarii
Nouembris	Nouembris	Novembris	novembris
Praefatio	Præfatio	Praefatio	Præfatio
\MakeUppercase{Iulius} yields:			
IVLIVS	IVLIVS	IULIUS	IULIUS

Table 5. Latin default hyphenation styles

Language variant	Default hyphenation style
classic	classic
medieval	modern
modern	modern
ecclesiastic	modern

Furthermore, the ecclesiastic variant takes care for a punctuation spacing similar to French, but with smaller spaces, as provided for PDFTEX by the ecclesiastic package.

▶ **hyphenation** \leftarrow = classic, modern, or liturgical

There are three different sets of hyphenation patterns for Latin. Separate documentation for them is available on the Internet.¹¹ Each of the four variants mentioned above has its default set of hyphenation patterns as indicated by table 5. Use the hyphenation option if the default style does not fit your needs. Note that the liturgical hyphenation patterns are the default of none of the language variants. To use them, you have to say hyphenation=liturgical in any case.

▶ ecclesiasticfootnotes ← = *true or false

Use footnotes as provided by the ecclesiastic package, which typesets footnotes with ordinary instead of superior numbers and without indentation. As many ecclesiastic documents and liturgical books use footnotes that are very similar to the ordinary Lagrange ones, we do not use this footnote style as default even for the ecclesiastic variant.

Note that this option is only possible if Latin is the main language of your document.

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 $^{^{^{11}}}Refer\ to\ https://github.com/gregorio-project/hyphen-la/blob/master/doc/README.md\#\ hyphenation-styles$

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▶ usej ← = *true or false

Use \mathcal{J}/j in predefined terms. The letter j is not of ancient origin. In early modern times, it was used to distinguish the consonantic i from the vocalic i. Nowadays, the use of j has disappeared from most Latin publications. So false is the default value for all four language variants. Use this option if you prefer \mathcal{J} anuarii and \mathcal{J} and \mathcal{J} and \mathcal{J} aniarii and \mathcal{J} aniarii.

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▶ capitalizemonth ← = *true or false

Capitalize the month name when printing dates (using the \today command). Traditionally, month names are capitalized. However, in recent liturgical books they are lowercase. So true is the default value for the variants classic, medieval, and modern, whereas false is the default value for the ecclesiastic variant.

▶ babelshorthands = *true or false

Enable the following shorthands inherited from babel-latin and the ecclesiastic package.

- "< for « (left guillemet)
- "> for » (right guillemet)
- " If no other shorthand applies, " before any letter character defines an optional break point allowing further break points within the same word (as opposed to the \- command).
- " | the same as ", but also possible before non-letter characters
- 'a for á (a with acute), also available for é, í, ó, ú, ý, æ, and œ
- 'A for Á (A with acute), also available for É, Í, Ó, Ú, Ý, Ý, Æ, and Œ

The following shorthands are only available for the medieval and the ecclesiastic variant.

- "ae for æ (ae ligature), also available for œ
- "Ae for Æ (AE ligature), also available for Œ
- "AE for Æ (AE ligature), also available for Œ
- 'ae for lpha (ae ligature with acute), also available for lpha
- 'Ae for Æ (AE ligature with acute), also available for Œ
- 'AE for Æ (AE ligature with acute), also available for Œ

▶ prosodicshorthands \leftarrow = *true or false

Enable shorthands for prosodic marks (macrons and breves) very similar to those provided by babel-latin using the withprosodicmarks modifier. Note that the active = character used for macrons will cause problems with commands using key=value interfaces, such as the command \includegraphics[scale=2]{...}. Use \shorthandoff{=} before such

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commands (and \shorthandon{=} thereafter) within every environment with prosodic shorthands enabled.

The following shorthands are available.

- =a for ā (a with macron), also available for ē, ī, ō, ū, and ÿ
- =A for \bar{A} (A with macron), also available for \bar{E} , \bar{I} , \bar{O} , \bar{U} , \bar{V} , and \bar{Y} . Note that a macron above the letter V is only displayed if your font supports the Unicode character 0304 (*combining macron*).
- =ae for ae (ae diphthong with macron, for the classic and the modern variant) or æ (ae ligature with macron, for the medieval and the ecclesiastic variant), respectively; also available for au, eu, and oe/oe. Note that macrons above diphthongs are only displayed if your font supports the Unicode character 035E (combining double macron).
- =Ae for $A\overline{e}$ (Ae diphthong with macron, for the classic and the modern variant) or $\overline{\mathcal{A}}$ (AE ligature with macron, for the medieval and the ecclesiastic variant), respectively; also available for $A\overline{u}$, \overline{Eu} , and $O\overline{e}/E$.
- =AE for AE (AE diphthong with macron, for the classic and the modern variant) or $\bar{\mathcal{A}}$ (AE ligature with macron, for the medieval and the ecclesiastic variant), respectively; also available for AU, EU, and OE/CE.
- ^a for ă (a with breve), also available for ĕ, ĭ, ŏ, ŭ, and ў. Note that a breve above the letter y is only displayed if your font supports the Unicode character 0306 (combining breve).
- ^A Ă (A with breve), also available for Ě, Ĭ, Ŏ, Ŭ, Ŭ, Ň, and Š. Note that breves above the letters V and Y are only displayed if your font supports the Unicode character 0306 (*combining breve*).

6.27 malay

Options:

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▶ variant ← = indonesian or malaysian

6.28 marathi

Options:

▶ numerals = devanagari or western

6.29 mongolian ←

Currently, only the Khalkha variety in Cyrillic script is supported.

Options:

▶ babelshorthands = *true or false

If this is turned on, the following shorthands are activated:

- "- adds a hyphenation point that does still allow for hyphenation at the points preset in the hyphenation patterns (as opposed to \-).
- "= adds an explicit hyphen with a breakpoint, allowing for hyphenation at the other points preset in the hyphenation patterns (as opposed to plain -).
- "~ for a hyphen sign without a breakpoint. Useful for cases where the hyphen should stick at the following syllable.
- "| disables a ligature at this position.
- "" allows for a line break at this position (without hyphenation sign).
- ", thinspace for initials with a breakpoint in following surname.
- "' for German-style left double quotes (looks like ").
- "' for German-style right double quotes (looks like ").
- "< for French-style left double quotes (looks like «).
- "> for French-style right double quotes (looks like »).

There are also three shorthands for the Cyrillic dash (тире), which is shorter than the emdash but longer than the endash (namely 0.8 em). Note that, since it is not covered by unicode, this character is faked by telescoping two endashes:

- "--- Cyrillic dash for the use in normal text. This requires preceding space in input (trailing space is optional) and prints with a non-breakable thin space before and after the dash.
- "--~ Cyrillic dash for the use in compound names (surnames). As opposed to "--- this removes any space before and after the dash.
- "--* Cyrillic dash for denoting direct speech. This adds a larger space after the dash. Space before the dash is output as is.
- numerals = arabic, cyrillic-alph or cyrillic-trad
 Uses either Arabic numerals or Cyrillic alphanumerical numbering. The two Cyrillic variants differ as follows:
 - cyrillic-alph steps through the Cyrillic alphabet. Thus it can only be used up to 30.
 - ► cyrillic-trad (= cyrillic) uses a traditional Cyrillic alphanumeric system. 12 It supports numbers up to 999 999.

Commands:

\Asbuk \ \Asbuk: produces uppercased Cyrillic alphanumerals, for environments

¹²See https://en.wikipedia.org/wiki/Cyrillic numerals.

such as enumerate. It steps through the Cyrillic alphabet and thus it can only be used up to 30. The command takes a counter as argument, *e.g.*, \textmongolian{\Asbuk{section}} produces Th.

\asbuk

▶ \asbuk: same as \Asbuk but in lowercase.

\AsbukTrad

\AsbukTrad: same as \Asbuk but using the traditional Cyrillic alphanumeric numbering which supports numbers up to 999 999.
 E.g., \textmongolian{\AsbukTrad{section}} produces S.

\asbukTrad

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► \asbukTrad: same as \AsbukTrad but in lowercase.

6.30 norwegian

Options:

▶ variant ← = bokmal or nynorsk

6.31 odia ←

Options:

- ▶ numerals = western, devanagari, or odia
- changecounternumbering = *true or false
 Use specified numerals for headings and page numbers.

6.32 persian

Options:

- ► numerals = western or eastern
- ▶ sectionsep ← = ⟨code⟩ (default value: .)

This option allows to customize the separator between chapters, sections, and subsections (a dot by default), *e.g.*, **sectionsep=-**. This might be useful particularly with **numerals=eastern**, as the dot looks too similar to the zero in many fonts.

Set this to true if you want the *abjad* form of the number three to be ≠ − as in the manuscript tradition – instead of the modern usage ₹.

Commands:

6.33 polish

Options:

▶ babelshorthands ← = *true or false
If this is turned on, the following shorthands for Polish are activated:

- "= for an explicit hyphen sign which is repeated at the beginning of the next line when hyphenated, as common in Polish typesetting (also if splithyphens=false). Unlike plain -, this also allows for hyphenation at the other points preset in the hyphenation patterns.
- "| disables a ligature at this position.
- "~ for a hyphen sign without a breakpoint. Useful for cases where the hyphen should stick at the following syllable.
- "- adds a hyphenation point that does still allow for hyphenation at the points preset in the hyphenation patterns (as opposed to \-).
- "" allows for a line break at this position (without hyphenation sign).
- "/ a slash that allows for a subsequent line break. As opposed to \slash, hyphenation at the breakpoints preset in the hyphenation patterns is still allowed.
- "` for Polish left double quotes (looks like ").
- "' for Polish right double quotes (looks like ").
- "< for French left double guillemets (looks like « used in Polish as second level quotes).
- "> for French right double guillemets (looks like »).
- ▶ splithyphens ← = *true or false

According to Polish typesetting conventions, if a word with a hard hyphen (such as *czerwono-złote*) is hyphenated at this hyphen, a second hyphenation character is to be inserted at the beginning of the line that follows the hyphenation (*czerwono-/-złote*). By default, this is done automatically (if you are using LuaTEX, the luavlna package is loaded to achieve this). Set this option to false to disable the feature.

▶ vlna \leftarrow = *true or false

According to Polish typesetting conventions, single-letter words (non-syllable prepositions) must not occur at line ends. Polyglossia takes care of this automatically by default (if you are using LuaTeX, the luavlna package is loaded to achieve this). Set this option to false to disable the feature.

6.34 portuguese

Options:

- ▶ variant ← = brazilian or portuguese
- ▶ babelshorthands \leftarrow = *true or false

If this is turned on, the following shorthands for fine-tuning hyphenation and micro-typography of Portuguese words are activated.

"| disables a ligature at this position.

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- "= for an explicit hyphen sign which is repeated at the beginning of the next line when hyphenated, as common in Portuguese typesetting (also if splithyphens=false). Unlike plain -, this also allows for hyphenation at the other points preset in the hyphenation patterns.
- "~ for a hyphen sign without a breakpoint. Useful for cases where the hyphen should stick at the following syllable.
- "- adds a hyphenation point that does still allow for hyphenation at the points preset in the hyphenation patterns (as opposed to \-).
- "" allows for a line break at this position (without hyphenation sign).
- "/ a slash that allows for a subsequent line break. As opposed to \slash, hyphenation at the breakpoints preset in the hyphenation patterns is still allowed.
- "< for French left guillemets («).
- "> for French right guillemets (»).
- ▶ splithyphens ← = *true or false

According to Portuguese typesetting conventions, if a word with a hard hyphen (such as *para-brisas*) is hyphenated at this hyphen, a second hyphenation character is to be inserted at the beginning of the line that follows the hyphenation (*para-/-brisas*). By default, this is done automatically (if you are using LuaTeX, the luavlna package is loaded to achieve this). Set this option to false to disable the feature.

6.35 punjabi ←

Options:

▶ numerals = western or gurmukhi

6.36 russian

Options:

▶ babelshorthands = *true or false

If this is turned on, the following shorthands are activated:

- "- adds a hyphenation point that does still allow for hyphenation at the points preset in the hyphenation patterns (as opposed to \-).
- "= adds an explicit hyphen with a breakpoint, allowing for hyphenation at the other points preset in the hyphenation patterns (as opposed to plain -).
- "~ adds an explicit hyphen without a breakpoint. Useful for cases where the hyphen should stick at the following syllable.
- "| disables a ligature at this position.

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"" allows for a line break at this position (without hyphenation sign).

There are also three shorthands for the Cyrillic dash (тире), which is shorter than the emdash but longer than the endash (namely 0.8 em). Note that, since it is not covered by unicode, this character is faked by telescoping two endashes:

- "--- Cyrillic dash for the use in normal text. This requires preceding space in input (trailing space is optional) and prints with a non-breakable thin space before and after the dash.
- "--~ Cyrillic dash for the use in compound names (surnames). As opposed to "--- this removes any space before and after the dash.
- "--* Cyrillic dash for denoting direct speech. This adds a larger space after the dash. Space before the dash is output as is.
- forceheadingpunctuation \leftarrow = *true or false

By default, chapter and section numbers always have a trailing punctuation in Russian (as in 1.1. as opposed to 1.1). If this option is set to false, polyglossia will not touch heading punctuation, so this will be whatever the class or a package determines.

▶ indentfirst \leftarrow = *true or false

By default, all paragraphs are indented in Russian, also those after a chapter or section heading. If this option is false, the latter paragraphs are not indented, as normal in LageX.

- ▶ mathfunctions ← = *true or false
 By default, some specific math macros are defined for Russian (see below).
 In order to prevent command clashes (e.g., with the chemformula package),
 you can switch these definitions off by passing false to this option.
- ► **spelling** = *modern* or old

 This option is for captions and date only, not for hyphenation.
- numerals = arabic, cyrillic-alph or cyrillic-trad
 Uses either Arabic numerals or Cyrillic alphanumerical numbering. The two Cyrillic variants differ as follows:
 - cyrillic-alph steps through the Cyrillic alphabet. Thus it can only be used up to 30.
 - cyrillic-trad (= cyrillic) uses a traditional Cyrillic alphanumeric system.¹³ It supports numbers up to 999 999.

Commands:

► \Asbuk: produces uppercased Cyrillic alphanumerals, for environments such as enumerate. It steps through the Cyrillic alphabet and thus it can

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\Asbuk

¹³See https://en.wikipedia.org/wiki/Cyrillic_numerals.

only be used up to 30. The command takes a counter as argument, *e.g.*, \textrussian{\Asbuk{section}} produces T_j.

\asbuk

▶ \asbuk: same as \Asbuk but in lowercase.

\AsbukTrad

\AsbukTrad: same as \Asbuk but using the traditional Cyrillic alphanumeric numbering which supports numbers up to 999 999.
 E.g., \textrussian{\AsbukTrad{page}} produces MΓ.

\asbukTrad

V1.45

V1.0.2

V1.45

V1.63

V1.63

V1.54

▶ \asbukTrad: same as \AsbukTrad but in lowercase.

If the mathfunctions option is true, loading Russian defines a few macros than can be used independently of the current language. These are nine macros to be used in math mode to type the names of trigonometric functions common for Russian documents: \sh, \ch, \tg, \ctg, \arctg, \arctg, \th, \cth, and \cosec. Cyrillic letters in math mode can be typed with the aid of text commands such as \textbf, \textsf, \textit, \texttt, etc. The macros \Prob, \Variance, \NOD, \nod, \NOK, \nok, \Proj print some rare Russian mathematical symbols.

6.37 sami ←

Currently support for Sami is limited to Northern Sami.

6.38 sanskrit

Options:

▶ script ← = devanagari, gujarati, malayalam, bengali, kannada, telugu, latin

The value is passed to fontspec should the respective \(script\)font not be defined. This can be useful if you typeset Sanskrit texts in scripts other than Devanagari.

• numerals ← = devanagari or western

6.39 serbian

Options:

▶ $variant \leftarrow = ekavian \text{ or ijekavian}$

With ijekavian, the different spelling is reflected in some caption strings.

- script = cyrillic or latin
- ▶ datei ← = *true or false

If this is true, the sixth and seventh month of the year are written in the date with the trailing (i) or (n) (i.e., juni, juli or jyhu, jynu rather than jun, jul or jyh, jyn).

▶ splithyphens ← = *true or false According to Serbian typesetting conventions, if a word with a hard hy-

According to Serbian typesetting conventions, if a word with a hard hyphen (such as *калцијум-карбонат*) is hyphenated at this hyphen, a second hyphenation character is to be inserted at the beginning of the line that

follows the hyphenation (калцијум-/-карбонат). By default, this is done automatically (if you are using LuaT_EX, the luavlna package is loaded to achieve this). Set this option to false to disable the feature.

- numerals = arabic, cyrillic-alph or cyrillic-trad
 Uses either Arabic numerals or Cyrillic alphanumerical numbering. The two Cyrillic variants differ as follows:
 - cyrillic-alph steps through the Cyrillic alphabet. Thus it can only be used up to 30.
 - cyrillic-trad (= cyrillic) uses a traditional Cyrillic alphanumeric system.¹⁴ It supports numbers up to 999 999.

Commands:

\Asbuk

► \Asbuk: produces uppercased Cyrillic alphanumerals, for environments such as enumerate. It steps through the Cyrillic alphabet and thus it can only be used up to 30. The command takes a counter as argument, *e.g.*, \textserbian{\Asbuk{section}} produces Tb.

\asbuk

▶ \asbuk: same as \Asbuk but in lowercase.

\AsbukTrad

► \AsbukTrad: same as \Asbuk but using the traditional Cyrillic alphanumeric numbering which supports numbers up to 999 999.
E.g., \textserbian{\AsbukTrad{page}} produces MД.

\asbukTrad \today*

- ► \asbukTrad: same as \AsbukTrad but in lowercase.
- ${\color{blue} \blacktriangleright}$ \today*: as opposed to the unstarred counterpart, this does not end the

\todayGen

date with a punctuation.

• \todayGen: outputs the date with months in genitive inflection. This form

\todayGen*

is suggested when the date is integrated into a sentence (as opposed to a standalone date statement). The starred form \todayGen* omits the trailing punctuation.

\todayArabic
\todayArabic*
 \todayRoman
 \todayRoman*

- ► \todayArabic: outputs the date with months in Arabic number. The starred form \todayArabic* omits the trailing punctuation.
- ► \todayRoman: outputs the date with months in Roman number. The starred form \todayRoman* omits the trailing punctuation.

6.40 slovak

Options:

V1.46

- ▶ babelshorthands ← = *true or false
 If this is turned on, the following shorthands for Slovak are activated:
 - "= for an explicit hyphen sign which is repeated at the beginning of the next line when hyphenated, as common in Slovak typesetting (also

¹⁴See https://en.wikipedia.org/wiki/Cyrillic numerals.

if splithyphens=false). Unlike plain -, this also allows for hyphenation at the other points preset in the hyphenation patterns.

- "| disables a ligature at this position.
- "~ for a hyphen sign without a breakpoint. Useful for cases where the hyphen should stick at the following syllable.
- "- adds a hyphenation point that does still allow for hyphenation at the points preset in the hyphenation patterns (as opposed to \-).
- "" allows for a line break at this position (without hyphenation sign).
- "/ a slash that allows for a subsequent line break. As opposed to \slash, hyphenation at the breakpoints preset in the hyphenation patterns is still allowed.
- "' for Slovak left double quotes (looks like ").
- "' for Slovak right double quotes (looks like ").
- "> for Slovak left double guillemets (looks like »).
- "< for Slovak right double guillemets (looks like «).
- ▶ splithyphens ← = *true or false

According to Slovak typesetting conventions, if a word with a hard hyphen (such as *je-li*) is hyphenated at this hyphen, a second hyphenation character is to be inserted at the beginning of the line that follows the hyphenation (*je-/-li*). By default, this is done automatically (if you are using LuaTEX, the luavlna package is loaded to achieve this). Set this option to false to disable the feature.

▶ vlna \leftarrow = *true or false

According to Slovak typesetting conventions, single-letter words (non-syllable prepositions) must not occur at line ends. Polyglossia takes care of this automatically by default (if you are using LuaTeX, the luavlna package is loaded to achieve this). Set this option to false to disable the feature.

6.41 slovenian

Options:

▶ localalph = *true or false

If true, alphanumeric counters will use a localized version including characters with caron $(a, b, c, \check{c}, d, ...)$ and excluding the characters $\langle q \rangle$, $\langle w \rangle$, $\langle x \rangle$ and $\langle y \rangle$ from alphabetic counting.

v1.46

v1.46

6.42 sorbian

Options:

- V1.45 V1.45
- ▶ variant \leftarrow = lower or upper
- ▶ olddate ← = *true or false

If true, \today will use traditional Sorbian month names (*i.e.*, it will be synonymous to \oldtoday below).

Commands:

\oldtoday

► \oldtoday: outputs the current date using traditional Sorbian month names, even if olddate is false.

6.43 spanish

Options:

- - spanishoperators ← = *all, accented, spaced, none, or false
 Determines of and how math operators are localized to Spanish.
 - ► accented causes some math operators to use accents where usual in Spanish (lím, lím sup, lím inf, máx, mín, ínf, mód).
 - ► spaced causes some math operators to use spaces where usual in Spanish (arc cos, arc sen, arc tg).
 - ► all activates accented and spaced and furthermore provides Spanish localizations of \sin (sen), \tan (tg), \sinh (senh), and \tanh (tgh).
 - none does no localization at all (default setting).

v1.46

V1.46

V1.46

\arcsen

\arctg

\senh \tg \tah

\spanishoperator

Commands: \leftarrow

- ► \arcsen: alias to \arcsin (babel compatibility)
- ► \arctg: alias to \arctan (babel compatibility)
- \sen: alias to \sin (babel compatibility)
- \senh: alias to \sinh (babel compatibility)
- ► \tg: alias to \tan (babel compatibility)
- ▶ \tgh: alias to \tanh (babel compatibility)
- \spanishoperator: allows you to define further localized operators. For
- instance, \spanishoperator: allows you to define further localized operators. For instance, \spanishoperator{cotg} defines a command \cotg that outputs cotg in math. The optional argument of the command lets you specify the spelling, if needed, e.g., \spanishoperator[arc\,ctg]{arcctg}.

6.44 syriac

Options:

V1.0.1

► numerals ← = western (i.e., 1234567890), eastern (for which the Oriental Arabic numerals are used: ハヤザミのマンハタ・), or abjad

V1.63

► sectionsep ← = (code) (default value: .)
This option allows to customize the separator between chapters, sections, and subsections (a dot by default), e.g., sectionsep=-. This might be useful particularly with numerals=eastern, as the dot looks too similar to the zero in many fonts.

Commands:

\abjadsyriac \aemph

- ▶ \abjadsyriac (see section 8.3)
- ▶ \aemph (see section 6.2).

6.45 thai

Options:

► numerals = thai or arabic

To insert word breaks, you need to use an external processor. See the documentation to thai-latex and the file testthai.tex that comes with this package.

6.46 tibetan

Options:

▶ numerals = tibetan or arabic

6.47 ukrainian

Options:

babelshorthands = *true or false
If this is turned on, the following shorthands are activated:

- "- adds a hyphenation point that does still allow for hyphenation at the points preset in the hyphenation patterns (as opposed to \-).
- "= adds an explicit hyphen with a breakpoint, allowing for hyphenation at the other points preset in the hyphenation patterns (as opposed to plain -).
- "~ for a hyphen sign without a breakpoint. Useful for cases where the hyphen should stick at the following syllable.
- "| disables a ligature at this position.
- "" allows for a line break at this position (without hyphenation sign).

There are also three shorthands for the Cyrillic dash (тире), which is shorter than the emdash but longer than the endash (namely 0.8 em). Note that, since it is not covered by unicode, this character is faked by telescoping two endashes:

- "--- Cyrillic dash for the use in normal text. This requires preceding space in input (trailing space is optional) and prints with a non-breakable thin space before and after the dash.
- "--~ Cyrillic dash for the use in compound names (surnames). As opposed to "--- this removes any space before and after the dash.
- "--* Cyrillic dash for denoting direct speech. This adds a larger space after the dash. Space before the dash is output as is.
- ▶ mathfunctions ← = *true or false

By default, some specific math macros are defined for Ukrainian (see below). In order to prevent command clashes (e.g., with the chemformula package), you can switch these definitions off by passing false to this option

- numerals = arabic, cyrillic-alph or cyrillic-trad
 Uses either Arabic numerals or Cyrillic alphanumerical numbering. The two Cyrillic variants differ as follows:
 - cyrillic-alph steps through the Cyrillic alphabet. Thus it can only be used up to 30.
 - cyrillic-trad (= cyrillic) uses a traditional Cyrillic alphanumeric system.¹⁵ It supports numbers up to 999 999.

Commands:

\Asbuk

V1.52

► \Asbuk: produces uppercased Cyrillic alphanumerals, for environments such as enumerate. It steps through the Cyrillic alphabet and thus it can only be used up to 30. The command takes a counter as argument, *e.g.*, \textukrainian{\Asbuk{section}} produces T₀.

\asbuk

▶ \asbuk: same as \Asbuk but in lowercase.

\AsbukTrad

► \AsbukTrad: same as \Asbuk but using the traditional Cyrillic alphanumeric numbering which supports numbers up to 999 999.

E.g., \textukrainian{\AsbukTrad{page}} produces MVI.

\asbukTrad

▶ \asbukTrad: same as \AsbukTrad but in lowercase.

If the mathfunctions option is true, loading Ukrainian defines a few macros than can be used independently of the current language. These are nine macros to be used in math mode to type the names of trigonometric functions common for Ukrainian documents: \sh, \ch, \tg, \ctg, \arctg, \arctg, \th, \cth, and \cosec. Cyrillic letters in math mode can be typed with the aid of text commands such as \textbf, \textsf, \textit, \texttt, etc. The macros \Prob, \Variance, \NOD, \nod, \NOK, \nok, \NSD, \nsd, \NSK, \nsk, \Proj print some rare Ukrainian mathematical symbols.

¹⁵See https://en.wikipedia.org/wiki/Cyrillic_numerals.

6.48 urdu

Options:

- ► calendar = gregorian or hijri
- ► hijricorrection = (integer) (default value: 0)

If calendar=hijri is selected, \today will output the date according to the lunar Islamic (Hijra) calendar. This option allows to shift the day of the output with respect to the current date. Both positive and negative integer values are allowed (negative decrease the day value). This corresponds to the optional argument of the \Hijritoday command which can be used to output Hijri dates irrespective of the calendar option (see sec. 10.2).

- ▶ numerals = western or eastern
- ▶ sectionsep ← = ⟨code⟩ (default value: .)

This option allows to customize the separator between chapters, sections, and subsections (a dot by default), *e.g.*, **sectionsep=-**. This might be useful particularly with **numerals=eastern**, as the dot looks too similar to the zero in many fonts.

Set this to true if you want the *abjad* form of the number three to be ≠ − as in the manuscript tradition − instead of the modern usage ₹.

6.49 uyghur

Options:

► chapterformat ← = *ordinal, roman, arabic

In Uyghur, chapter and part headings usually use ordinals rather than numbers. Alternatively Roman numbers are common as well. By default, polyglossia uses ordinals. This option allows to change this. Choices are:

- ordinal: Use ordinals for chapter and part headings (= default setting)
- roman: Use Roman numbering for chapter and part heading.
- arabic: Use Arabic numbering for chapter and part heading (= LaTeX default).

Note that this option only works if **swapstrings** is set to all, headings or hheaders. The caveats for that options (see below) apply.

► swapstrings ← = *all, captions, headings, headers, hheaders, or none In Uyghur, table and figure caption strings need to be in a different order and format than in other languages. By default, polyglossia provides the correct for different classes and packages (standard classes, KOMA-script, memoir, and titlesec package should work, as well as fancyhdr and caption). However, since the definition of these strings is not standardized, the redefinitions might not work and even interfere badly if you use spe-

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V1.53

cific classes or packages that redefine the respective strings themselves. In this case, you can disable some or all changes. The possibilities are:

- all: Redefine figure and table captions, part and chapter headings, and running headers (= default setting)
- captions: Redefine figure and table captions only
- ▶ headings: Redefine part and chapter headings only
- ▶ headers: Redefine running headers only
- hheaders: Redefine part and chapter headings as well as running headers
- none: Do not redefine anything

Commands:

\uyghurordinal

► \uyghurordinal: outputs Uyghur ordinals. Supported input: integer numbers in the range of 1–100.

\uyghurord

► \uyghurord: same as \uyghurordinal but with counter as input (e.g., \textuyghur\uyghurord{page}}).

6.50 welsh

Options:

▶ date = long or short

7 Modifying or extending captions, date formats and language settings

Polyglossia uses the following macros to define language-specific captions (*i.e.*, strings such as "chapter"), date formats and additional language settings ((lang) is to be replaces with the respective language name):

\captions(lang)

\captions(lang) stores definitions of caption strings (such as, in the case
 of English, \def\chaptername{Chapter})

\date(lang)

 \date(lang) stores definitions of date formats (usually redefinitions of \today, in some cases also definitions of additional date commands)

\blockextras@(lang)

► \blockextras@(lang) stores macros that are to be executed when the language (lang) is activated via \selectlanguage command or the (lang) environment

\inlineextras@(lang)

 \inlineextras@(lang) stores macros that are to be executed when the language (lang) is activated locally via \text(lang) command

\noextras@(lang)

► \noextras@(lang) stores macros that are to be executed when the language (lang) is closed

ullet \nestedextras@(lang) \leftarrow stores macros that are to be executed when a

nested language is closed and (lang) is the active language again. This is useful for settings that are only possible on global scale.

In order to redefine internal macros, we recommend to use the command \addto. For instance, to change the \chaptername for language lingua, you can do this:

\addto\captionslingua{\def\chaptername{Caput}}

Note that this needs to be done after the respective language has been loaded with \setmainlanguage or \setotherlanguage.

Specifically for package authors, analogous commands are provided which are only executed if a specific language *variety* is used. As opposed to the macros above, these refer to babel names. Other than that, the function is identical:

\captions@bbl@(babelname)
\date@bbl@(babelname)

(44 25622 26 (2425 21141115)

\blockextras@bbl@(babelname)

\inlineextras@bbl@(babelname)
\noextras@bbl@(babelname)

- \captions@bbl@(babelname)
- \date@bbl@(babelname)
- \blockextras@bbl@(babelname)
- ▶ \inlineextras@bbl@(babelname)
- \noextras@bbl@(babelname)

By default, these macros are undefined. If they are defined (e.g., by an external package), they will be executed after their respective (lang) counterpart and thus can be used to overwrite definitions of the former. Again, use \gappto to define/modify these macros. For instance, to add a new caption \footnotename to the Swiss variety of German (babel name nswissgerman), you can do this:

\gappto\captions@bbl@nswissgerman{\def\footnotename{Fussnote}}

If you do this in a document preamble rather than in a package, you need to embrace the redefinition by \makeatletter and \makeatother due to the @ in the macro names.

Finally, as soon as the language has been switched (either inline or as a block), polyglossia executes the (by default empty) hook

\polyglossia@language@switched

▶ \polyglossia@language@switched

to which you can append arbitrary code (via \gappto) that should be executed if (a particular) language is being activated. This is done before any of the above macros are issued (so you can still alter them), but at a point where \languagename, \babelname and \languageid are already set, so you can condition on specific languages in your code. This hook is particularly provided for package authors.

8 Script-specific numbering

Languages and scripts have specific numbering conventions. Some use decimal digits (*e.g.*, Arabic numerals), some use alphabetic or alphanumerical notation (*e.g.*, Roman numbering). In some cases, different conventions are available (*e.g.*,

Mashriq or Maghrib numbering in Arabic script, Arabic or Hebrew [= alphanumeric] numbering in Hebrew).

If the latter is the case, polyglossia provides language options which allow you to select or switch to the suitable convention. With the appropriate language option set, polyglossia will automatically convert the output of internal ETeX counters to their localized forms, for instance to display page, chapter and section numbers.

For manual input of numbers, macros are provided. These convert Arabic numeric input to the respective local decimal digit (see sec. 8.2), alphanumeric representation (see sec. 8.3) or whatever is appropriate (see sec. 8.1). The possibilities are described in turn.

General localization of numbering

V1.45 \localnumeral

As of 1.45,

polyglossia provides a generic macro \localnumeral which converts numbers to the current local form (which might be script-specific decimal digit, an alphabetic numbering or something else). For instance in an Arabic environment \localnumeral {42} yields { Y, whereas in an Hebrew environment, it results in מב with numerals=hebrew, and 42 with numerals=arabic. Note that, as opposed to the various digits macros (described in sec. 8.2), the argument of \localnumeral must consist of numbers only.

V1.45

For \leftarrow the conversion of counters, the starred version \localnumeral* is \localnumeral* provided. This takes a counter as argument. For instance in an Arabic environment \localnumeral*{page} yields or.

\Localnumeral

For scripts with alphanumeric numbering, the variants \Localnumeral and \Localnumeral* \Localnumeral* provide the uppercased versions.

All these macros provide the following options:

[lang=]

▶ lang = local, main, or (language) Output number in the local form of the currently active language for local, the main language of the document for main, and any (loaded) language for (language) $(e.g., \localnumeral[lang=arabic]{42}).$

Non-Western decimal digits 8.2

V1.1.1

In addition ← to the generic macros described above, polyglossia provides language-specific conversion macros which can be used if the generic ones do not suit the need. 16 The macros have the form \(script)digits. They convert

 $^{^{16}\}mathrm{A}$ third method are so-called TECKit font mappings. Those can be activated with the font spec Mapping option, using arabicdigits, farsidigits or thaidigits. For instance if \arabicfont is defined with the option Mapping=arabicdigits, typing \textarabic{2010} results in Y • N • Note that this method has some drawbacks, though, for instance when the value of a counter has to be written and read from auxiliary files. So please use this with care.

Currently, the following macros are provided:

▶ \arabicdigits \arabicdigits ▶ \bengalidigits \bengalidigits \devanagaridigits ▶ \devanagaridigits ▶ \farsidigits \farsidigits ▶ \gurmukhidigits \gurmukhidigits ▶ \kannadadigits \kannadadigits ▶ \khmerdigits \khmerdigits \laodigits ▶ \laodigits ▶ \nkodigits \nkodigits \odiadigits ▶ \odiadigits \thaidigits ▶ \thaidigits \tibetandigits ▶ \tibetandigits

8.3 Non-Latin alphabetic numbering

For languages which use special (non-Latin) alphanumerical notation¹⁷, dedicated macros are provided.

They work in a similar way than the \(script)digits macros described above: They take Arabic numerical input and output the respective value in the local alphabetic numbering scheme (most of these macros are equivalent to \localnumeral and \Localnumeral in the respective context).

The following macros are provided:

\abjad

\abjad outputs Arabic abjad numbers according to the Mashriq varieties.
 Example: \abjad{1863} yields

\abjadmaghribi

\abjadmaghribi outputs Arabic abjad numbers according to the Maghrib varieties. Example: \abjadmaghribi{1863} yields

\abjadsyriac

\armeniannumeral

▶ \armeniannumeral produces Armenian alphabetic numbering. Example: \armeniannumeral{1863} yields ∩ প্ৰথ

\belarusiannumeral \Belarusiannumeral

belarusiannumeral produces Belarusian numbering, with uppercased variant (for alphanumerical variant) via \Belarusiannumeral. Depending on the numerals option in the Belarusian language selection, this is either Arabic digit or Cyrillic alphanumercial output.

 $^{^{17}}$ For instance, see http://en.wikipedia.org/wiki/Greek_numerals, http://en.wikipedia.org/wiki/Abjad_numerals, http://en.wikipedia.org/wiki/Hebrew_numerals, and http://en.wikipedia.org/wiki/Syriac_alphabet.

¹⁸Å fine guide to numerals in Syriac can be found at http://www.garzo.co.uk/documents/syriac-numerals.pdf.

Example: With numerals=latin \belarusiannumeral{19} yields 19, with numerals=cyrillic-trad \belarusiannumeral{19} results in io, with numerals=cyrillic-alph \belarusiannumeral{19} results in y.

\chinesenumeral

- ► \chinesenumeral produces Chinese numbering which, depending on the numerals option in the Chinese language selection, produces is either Arabic digit or Chinese ideographic output.

 Example: With numeral s=arabic \chinesenumeral {753} yields 753, with
 - Example: With numerals=arabic \chinesenumeral $\{753\}$ yields 753, with numerals=chinese \chinesenumeral $\{753\}$ results in 七百五十三.

\georgiannumeral

\georgiannumeral produces Georgian alphabetic numbering.
 Example: \georgiannumeral{1863} yields ճցոց.

\greeknumeral

• \greeknumeral produces Greek alphabetic numbering, \Greeknumeral outputs uppercased variants. Example: \greeknumeral {1863} yields $\alpha\omega\xi\gamma'$, \Greeknumeral {1863} results in $\Delta\Omega\Xi\Gamma'$.

\hebrewnumeral
\Hebrewnumeralfinal

► \hebrewnumeral, \Hebrewnumeral and \Hebrewnumeralfinal produce variants of Hebrew alphanumeric numerals. The commands behave identical as in babel: \hebrewnumeral outputs the numbers without any decoration at all, \Hebrewnumeral adds gereshayim before the last letter, and \Hebrewnumeralfinal uses in addition the final forms of Hebrew letters. Examples: \hebrewnumeral{1750} yields א'תש"ג, \Hebrewnumeral{1750} yields א'תש"ג, and \Hebrewnumeralfinal{1750} yields א'תש"ג.

\mongoliannumeral

- ► \mongoliannumeral produces Mongolian numbering, with uppercased variant (for alphanumerical variant) via \Mongoliannumeral. Depending on the numerals option in the Mongolian language selection, this is either Arabic digit or Cyrillic alphanumercial output.
 - Example: With numerals=latin \mongoliannumeral{19} yields 19, with numerals=cyrillic-trad \mongoliannumeral{19} results in ie, with numerals=cyrillic-alph \mongoliannumeral{19} results in y.

\punjabinumeral

► \punjabinumeral produces Punjabi numbering, depending on the setting of the numerals option in the Punjabi language selection, this is either Gurmukhi or Arabic (Western).

\russiannumeral

- russiannumeral produces Russian numbering, with uppercased variant (for alphanumerical variant) via \Russiannumeral. Depending on the numerals option in the Russian language selection, this is either Arabic digit or Cyrillic alphanumercial output.
 - Example: With numerals=latin \russiannumeral{19} yields 19, with numerals=cyrillic-trad \russiannumeral{19} results in ie, with numerals=cyrillic-alph \russiannumeral{19} results in y.

\serbiannumeral

► \serbiannumeral produces Serbian numbering, with uppercased variant (for alphanumerical variant) via \Serbiannumeral. Depending on the numerals option in the Serbian language selection, this is either Arabic digit or Cyrillic alphanumercial output.

\ukrainiannumeral \Ukrainiannumeral Example: With numerals=latin \serbiannumeral{19} yields 19, with numerals=cyrillic-trad \serbiannumeral{19} results in io, with numerals=cyrillic-alph \serbiannumeral{19} results in π .

► \ukrainiannumeral produces Ukrainian numbering, with uppercased variant (for alphanumerical variant) via \Ukrainiannumeral. Depending on the numerals option in the Ukrainian language selection, this is either Arabic digit or Cyrillic alphanumercial output.

Example: With numerals=latin \ukrainiannumeral{19} yields 19, with numerals=cyrillic-trad \ukrainiannumeral{19} results in io, with numerals=cyrillic-alph \ukrainiannumeral{19} results in y.

Footnotes in right-to-left context 9

With languages that use right-to-left scripts, footnote apparatuses are usually placed at the right side of the page bottom. Consequently, the footnote rule also is to be placed right. Things get more tricky, though, if right-to-left and left-toright scripts are mixed. Then you might want to put the footnotes on some pages left, on some right, or even mix positions on a page. Thus, footnote handling in right-to-left context sometimes needs manual intervention. This is described in what follows.

Horizontal footnote position

When right-to-left languages are used, the \footnote command becomes sensitive to the text directionality. The footnote is always placed on the side that is currently the origin of direction: on the left side of the page in LTR paragraphs and on the right in RTL paragraphs.

For cases where this is not desired, two additional footnote commands are \RTLfootnote provided: \RTLfootnote and \LTRfootnote. \LTRfootnote always places the \LTRfootnote footnote on the left side, notwithstanding the current directionality. Likewise, \RTLfootnote always places it on the right side. Like \footnote, \RTLfootnote and \LTRfootnote provide an optional argument to customize the number.

Footnote rule length and position

The default placement of the footnote rule differs in XATEX and LuaTEX output (this is due to differences in the bidi and luabidi packages). With XaTeX, footnote rules are always placed left, which is often wrong in RTL context. With LuaT_FX, by contrast, the rule is placed always right if the main language is a right-to-left language, and always left if the main language is a left-to-right language, which is the right thing in many cases.

In both cases, you can change the default behavior as follows:

\leftfootnoterule \rightfootnoterule \autofootnoterule

- ▶ Put \leftfootnoterule in the preamble to have all rules left-aligned.
- ▶ Put \rightfootnoterule in the preamble to have all rules right-aligned.
- ▶ Put \autofootnoterule in the preamble to have automatic placement depending on the context (see below for elaboration).

\textwidthfootnoterule

▶ Put \textwidthfootnoterule in the preamble to have a rule that spans the whole text width.

With \autofootnoterule, the first footnote on the current page determines the placement. Note that this automatic can fail with footnotes at page boundaries that differ in directionality from the first footnote on the page. You can work around such cases by switching to \rightfootnoterule or \leftfootnoterule on these pages.

Note also that the rule switches might interfere in bad ways with packages or classes that redefine footnotes themselves. This is also the reason why \autofootnoterule is not used by default.

Calendars 10

10.1 Hebrew calendar (hebrewcal.sty)

\Hebrewtoday

The package hebrewcal.sty is almost a verbatim copy of hebcal.sty that comes with babel. The command \Hebrewtoday formats the current date in the Hebrew calendar (depending of the current writing direction this will automatically set either in Hebrew script or in roman transliteration).

Islamic calendar (hijrical.sty)

This package computes dates in the lunar Islamic (Hijra) calendar.¹⁹ It provides two macros for the end-user. The command

\HijriFromGregorian

\HijriFromGregorian{\(\text{year}\)}{\(\text{month}\)}{\(\text{day}\)}

V1.1.1

\Hijritoday sets the counters Hijriday, Hijrimonth and Hijriyear. \Hijritoday formats the Hijri date for the current day. This command is now locale-aware ←: its output will differ depending on the currently active language. Presently polyglossia's language definition files for Arabic, Farsi, Urdu, Turkish and Malay provide a localized version of \Hijritoday. If the formatting macro for the current language is undefined, the Hijri date will be formatted in Arabic or in roman transliteration, depending of the current writing direction. You can define a new format or redefine one with the command

\DefineHijriDateFormat

\DefineHijriDateFormat{(lang)}{(code)}.

The command \Hijritoday also accepts an optional argument to add or subtract a correction (in days) to the date computed by the arithmetical al-

¹⁹It makes use of the arithmetical algorithm in chapter 6 of Reingold & Gershowitz, Calendrical calculation: the Millennium edition (Cambridge University Press, 2001).

gorithm.20 For instance if \Hijritoday yields the date "7 Rajab 1429" (which is the date that was displayed on the front page of aljazeera.net on 11th July 2008), \Hijritoday[1] would rather print "8 Rajab 1429" (the date indicated the same day on the site gulfnews.com).

10.3 Farsi (jalālī) calendar (farsical.sty)

This package is an almost verbatim copy of Arabiftoday.sty (in the Arabi package), itself a slight modification of ftoday.sty in FarsiTFX.21 Here we have re-\Jalalitoday named the command \ftoday to \Jalalitoday. Example: today is 20 Shahrīvar 1404.

Auxiliary commands

The macro \leftarrow

\charifavailable

\charifavailable{(char code)}{(substitution)}

checks whether the character with the specified (char code) (i.e., unicode utf-16 code without preceding 0x) exists in the current font. If so, the character is printed, if not, the (substitution) is printed.

Example: \charifavailable{1E9E}{SS} prints the capital version of the German letter $\langle \mathfrak{B} \rangle$ if available (*i.e.*, \mathfrak{B}), else it prints the substitution digraph SS.

With the test \leftarrow

v1.66

\IfCharIsAvailableTF \IfCharIsAvailableTF{(char code)}{(true condition)}{(false condition)} you can test for the availability of a character and execute different code depending whether or not this is the case (this replaces the undocument internal command \xpg@if@char@available).

The following is specifically relevant to package authors who need information about the languages in use and the details of the respective locale. In order to \BCPdata{(type)} get such information, the recommended way is to use the \BCPdata{(type)} \leftarrow command to get (parts of) the BCP-47 language tag. This command is used by the LATEX kernel as of 6/2023, and the syntax is standardized at least between babel and polyglossia.

\BCPdata supports the following {\type\} arguments:

▶ **language** The language subtag (*e.g.*, de)

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²⁰The Islamic calendar is indeed a purely lunar calendar based on the observation of the first visibility of the lunar crescent at the beginning of the lunar month, so there can be differences between different localities, as well as between civil and religious authorities.

²¹One day we may rewrite farsical from scratch using the algorithm in Reingold & Gershowitz (ref. n. 19).

- ► **region** The region subtag (*e.g.*, AT)
- ▶ **script** The script subtag (e.g., Latn)
- ▶ **variant** The variant subtag (*e.g.*, 1901 for German old spelling)
- extension.t The subtag indicating transformation between languages or scripts (e.g., ja as in en-t-ja: English transformed to Japanese)
- ► extension.u The subtag indicating additional locale information (e.g., nulatn as in ar-u-nu-latn: Arabic with Latin Numbering)
- extension.x The private usespace subtag (e.g., classic as in la-x-classic for classic Latin)
- ➤ casing is a special semantic value which returns whatever is considered suitable for casing commands such as \MakeUppercase. In many cases, this is identical to language but it could also be something more specific such as el-x-iota or ckb-Latn if this is needed for proper casing. Note that this information is retrieved by the LaTeX kernel for casing as of 06/2023.
- ► tag returns the registered full tag (identical to \languageid below). This however omits certain subtags if these are considered obvious (e.g., for German, only de-DE is returned, although script [Latn] and variant [1996] are defined as well).

If a subtag is not defined for a given language, an empty string is returned.

The values above return information for the language currently in use. If you need to access information for the main language of the document, prepend main. to the respective argument (e.g., main.language). This works for all supported arguments.

Next to \BCPdata, polyglossia provides the following legacy macros which are partly unique to polyglossia, partly re-implementations of legacy babel commands:

\languagename \mainlanguagename

- ▶ \languagename stores the currently active (polyglossia) language name.
- \mainlanguagename stores the (polyglossia) language name of the main document language.

\languagevariant

► \languagevariant stores the language variant if set. The macro is empty if no variant has been set.

\mainlanguagevariant

► \mainlanguagevariant stores the language variant of the main document language if set. The macro is empty if no variant has been set.

\babelname

▶ \babelname stores the corresponding name of the currently active language (variant) in babel. This might not only be useful if you want to support both babel and polyglossia, but also since this name is unique for a given language variety (*e.g.*, ngerman, german, swissgerman etc.). Note that this macro is also defined for languages that are not supported in babel. In that case, they are equal to the polyglossia language name.

\mainbabelname

► \mainbabelname analogously stores the name of document's main language (variant) in babel.

\languageid{(type)}
V1.47

- ► \languageid{\('type'\)} ← stores the identifier tag of the current language. Currently supported ('types'):
 - ▶ bcp-47 (alias bcp47): IETF BCP-47 language identifier

\mainlanguageid{(type)}
 V1.47

► \mainlanguageid{⟨type⟩} ← stores identifier tag of the main language. Currently supported (types): see \languageid.

If you want to have a full list of loaded languages/variants, use the following macros:

\xpg@loaded

 \xpg@loaded stores a comma-separated list of all loaded languages (polyglossia name)

\xpg@vloaded \xpg@bloaded

- ► \xpg@vloaded stores a comma-separated list of all loaded variants
- \xpg@bloaded stores a comma-separated list of babel names of all language variants

\xpg@bcp@loaded V1.47 \blacktriangleright \xpg@bcp@loaded \leftarrow stores a comma-separated list of the BCP-47 IDs of all language variants

Whether a language is loaded can be tested by

\iflanguageloaded

\iflanguageloaded{(lang)}{(true)}{(false)}

where (lang) is a polyglossia language name, by

\ifbabellanguageloaded

\ifbabellanguageloaded{(lang)}{(true)}{(false)}

V1.47 \iflanguageidloaded where (lang) is a babel language name (see table 2 on p. 7), or by \leftarrow

\iflanguageidloaded{(type)}{(id)}{(true)}{(false)}

where $\{type\}$ is a supported language id type (such as bcp-47) and $\{id\}$ is a language id (such as en-US; see table 3 on p. 8).

Finally, if you want to know whether a specific language option has been set, you can use \leftarrow

V1.47 \iflanguageoption

\iflanguageoption{(lang)}{(key)}{(value)}{(true)}{(false)}

13 Revision history

2.7 (2025/09/11)

Bug fixes

- Fix PDF strings with captions (#685).
- ► Fix spacing issue in List of Table/Figures (#686).
- Fix a bug with spacing after CJK punctuations and introduce \inhibitglue for LuaLTEX (#687).

2.6 (2025/06/30)

Bug fixes

► Reset splithyphens and vlna state of embedding language after embedded language has been closed (#682).

- ► Fix space after \greeknumeral with numbers > 100 (#684).
- ► Adapt localmarks to work with LTEX 6/2025.

New Features

- ► Add koppa option to Greek (#683).
- ► Add possibility to customize the numbers 6 and 90 in Greek (#683).

2.5 (2025/05/12)

Interface and defaults changes

► The babelnames classiclatin and ecclesiasticlatin are changed to classicallatin and ecclesiasticallatin. This reflects a change in the babel-latin package.

Bug fixes

- ► Fix a bug with linebreaking in CJK languages (#675).
- Fix global setting of babelshorthands (#680).
- Fix mapping between upper and lower case for classic and medieval Latin: u/V, \dot{u}/\dot{V} , \bar{u}/\dot{V} , \ddot{u}/\dot{V} .

2.4 (2025/01/31)

Bug fixes

- ► Fix changecounternumbering option of Bengali (#672).
- ► Fix testing of languages in groups (#669).
- Fix error with undefined internal command (\xpg_pop_language:) that should be defined (#671).
- ► The command \familytype is now predefined again independent of font settings, and its name was changed to \l_xpg_familytype_tl.
- A warning is now issued if babel is loaded in parallel with polyglossia.

2.3 (2024/09/23)

Bug fixes

- ► Line-breaking for Japanese and Chinese has been implemented. This is still considered experimental, please test and report any issues (#635).
- ► Prevent the Latin gloss from writing undefined commands to the aux file (#643).
- ► Fix use of \pghyphenation in preamble (#654).
- ► Fix handling of current language options in lists of figures/tables (#657).
- Fix definition of \cyrdash so that no linebreak is added when it is used at paragraph begin.
- ► Fix test for KOMA class in Hungarian and Russian glosses (#447).
- Fix display of font name in package error.
- ▶ Remove spurious spaces from Korean, Sanskrit, and Serbian glosses (#659, #660)

2.2 (2024/07/15)

Bug fixes

- ► Fix lang environment (#633).
- ► Fix first number of Maghrib abjad numbering for Algeria, Morocco and Tunisia (#640).
- ► Fix some captions strings in Bulgarian, Chinese, Esperanto, Estonian, Hindi, Latvian, and Slovak (#651)
- ► Improve performance with multilingual documents that have a TOC (#641).

New Features

► Add possibility to associate a font to a language/variant with reference to a BCP-47 script tag (#636).

Internal work

▶ The major rewrite of the package code has been finished. More code has been cleaned up, and polyglossia employs modern concepts (latex3 and modern \LaTeX 2 ε). All key-val handling uses l3keys now rather than xkeyval.

2.1 (2024/03/07)

Bug fixes

- ► Make \foreignlanguage \long again (#622).
- ► Fix otherlanguage* environment (#622).

2.0 (2024/02/17)

Bug fixes

- ► Fix error with undefined property list that unhides with \(\frac{1}{3}\)kernel version 2024-02-13 (\(\frac{#626}{0.00}\).
- ► Fix frenchfootnote option (#620).
- ► The error message on improper font setting is now correct if the main script is non-Latin, for non-Roman fonts (#571), and specifically for the CJK case (#621).
- ▶ Fix expansion of localnumeral (#622).

New Features

- ► Add \inheritbabelshorthands (#604).
- ► Add \usebabelshorthands.
- ► Add shorthands for German gender-sensitive writing.
- Implement babel-style hyphenation for Finnish.

Documentation improvements

► Fix documentation of Finnish shorthands (#623).

Internal work

► The package code has been subjected to a major rewrite. Code has been cleaned up, and in general, polyglossia more consistently employs latex3 now. Note that this is an ongoing and yet unfinished project that will continue over the next releases.

1.66 (2023/12/11)

Bug fixes

- ► Fix OpenType language and script tags in Chinese (#606).
- Fix resetting of language specifications at the end of a local font set with babel legacy means (\foreignlanguage or otherlanguage* environment) (#607).
- Fix lowercasing of \textlang's first mandatory argument. Now the casing does not change (language tag was lower-cased always) (#608).
- ► Add missing BCP-47 alias for Khmer (#611).
- ► Stop \charifavailable from looking ahead for more numbers or gobbling a space (#613).

New Features

- ► Add support for Odia, provided by AVISEK JENA and ASHOK DAS.
- ▶ New auxiliary package odiadigits
- ► Add auxiliary command \IfCharIsAvailableTF to complement \charifavailable.

1.65 (2023/10/01)

Bug fixes

- ► Fix spurious space in Hebrew captions (#601).
- ► Fix resetting of language specifications at end of inline switch (#603).

Documentation improvements

 Refer to \greeknumeral and \Greeknumeral rather than to the synonyms \greeknumber and \Greeknumber (#602).

1.64 (2023/07/21)

Bug fixes

► Fix conflict of soul with **splithyphens** on X74TFX (#600).

1.63 (2023/06/10)

Bug fixes

- ► Language options are now lowercased before they are handled. This fixes errors when using the options in \MakeUppercase context (e.g., in headings).
- Fix casing value for medieval Latin (this concerns $\langle u \rangle$ and $\langle V \rangle$ casing).
- Remove hacks in some gloss files where \MakeUppercase has been redefined to a no-op since the respective scripts do not have uppercasing. As \MakeUppercase is now locale-aware, these hacks are no longer needed. This concerns Arabic, Divehi, Hebrew, Hindi, Kurdish, Persian, Punjabi, Syriac, and Urdu.
- Fix Eastern (Mashriq) Arabic numbering direction with LuaLTEX for Arabic, Kurdish, Persian, Syriac, and Urdu (amends previous fix to #213).
- French variant=acadian refers to the Canadian French subvariety as spoken in the Acadian region (as opposed to Quebec French). To differentiate it we now use a dedicated

subtag which can also be used to access the language (fr-CA-u-sd-canb). Note that Quebec French is currently connected with fr-CA, not the more specific fr-CA-u-sd-caqc, although the u extension is returned if requested via \BCPdata. In practice, the Canadian subvarieties of French are identical currently, anyway.

- ► Do not blindly de-activate the quote character in languages that provide shorthands if the shorthands are not used. This allows to activate the character with other packages such as csquotes (#592).
- ► Do not flood the FTFX hooks with redundant French itemlabels and footnote settings (#593).
- Fix Korean patching of part format with hyperref (#595).
- ▶ Make Hebrew numerals expandable (#596).
- ► Avoid superfluous writing of language switches to aux file (#593).

New features

- New option capitalyiwn for Armenian.
- New option capitaleszett for German.
- New option capitaliota for Greek.
- ► New option datei for Serbian.
- ▶ New option **sectionsep** for Arabic, Kurdish, Persian, Syriac, and Urdu (#589).
- Add aliases eastern (= mashriq) and western (= maghrib) to Arabic numerals.
- New date commands \today*, \todayGen, \todayArabic, and \todayRoman (all with starred counterparts) for Serbian (#524).
- Implement basic support for **variant=ijekavian** in Serbian.
- Dutch now hyphenates properly on letters with tremata. The new option, tremahyphenation, is provided to opt-out this feature.
- ► Add shorthands "a, "e, "i, "o, "u, "A, "E, "I, "0, "U, "y, and "Y to Dutch.

Interface changes

 All language options are now lowercase by default (though the mechanism is caseinsensitive anyway). Changes cover Kurdish, Sanskrit, Serbian.

1.62 (2023/04/22)

Bug fixes

▶ \BCPdata was not fully expandable as required. Now it is.

1.61 (2023/04/16)

Bug fixes

- ► Properly reset fonts on change to Latin-script other language (#580)
- ► Turn ^ shorthand off in aux file for Latin (#582)
- ► Fix stacking of nested languages and resulting bug in TOC language assignment (#585)
- ► Fix \greeknumeral{6} (#587)
- Fix (re)setting of scripts in inline language commands.

New features

► Introduce \BCPdata, a standardized way to gather localization information (see sec. 12).

1.60 (2023/02/11)

Bug fixes

- ► Remove stray U+FEFF glyphs in gloss files (#574)
- ► Fix vertical whitespace in captions (#575)
- Fix whitespace in dutch with shorthands.

1.59 (2022/11/29)

Bug fixes

- ▶ Do not error, but warn, after language change due to non-updated aux file (#565).
- ► Fix catcode issue for Latin (#566).
- ► Improve error message with missing fonts (#571)

New features

- ► Add support for (simplified and traditional) Chinese (#65, provided by TAKUJI TANAKA).
- ► Add support for Punjabi (#572), provided by ARVINDER SINGH.

1.58 (2022/10/26)

Bug fixes

- The option forceheadingpunctuation is introduced for correct running headers in Hungarian documents (#557).
- Fix language setting in list of figure and table if captions float to different language areas (#542).
- ► Make Croatian digraphs robust (#552).
- Fix definition of some Finnish shorthands (#554).
- ${\color{blue} \blacktriangleright}$ Re-fix Hungarian patching of parts with hyperref (#555).
- Correct running headers in Hungarian documents (#557).
- ► Fix option expansion issue (#559).

1.57 (2022/07/18)

Bug fixes

- ► Fix passing of macros to \setmainlanguage and \setotherlanguage (#543).
- ► Fix otherlanguage* environment with bidi text (#544).
- Re-fix patching of French part headings with hyperref (#546).
- ► Fix Latin prosodic shorthand issues (#547, Babel/#126, Babel/#129).

New features

- ► New option transliteration to Hebrew and hebrewcal (#540).
- New option fullyear to Hebrew.

1.56 (2022/04/20)

Bug fixes

► Fix English setup via aliases (#539).

1.55a (2022/04/10)

Bug fixes

► Fix \foreignlanguage command (#538).

1.55 (2022/04/09)

New features

- ► New option **splithyphens** and **vlna** for Polish (#535).
- ► Add babelshorthands to Polish.

Bug fixes

► Add missing gloss-latex.lde file to release (#537).

1.54 (2022/03/27)

New features

- ► New option **splithyphens** for Serbian (#496) and Portuguese (#534).
- ▶ Add babelshorthands to Portuguese.
- ► Add schoolhyphens option to Finnish (#525).

Interface and defaults changes

- ► Rename disableligatures to disabledigraphs for Croatian (#497, #500).
- ► Fix output with numerals=cyrillic-alph (part of #503).
- Standardize February and November in Indonesian according to the Great Dictionary of the Indonesian Language of the Language Center (Kamus Besar Bahasa Indonesia) (#526).

Bug fixes

- ► Fix robustification of font family switches (#428).
- ► Preserve font family switches across languages (#519).
- ► Fix T_EX dash ligatures with **splithyphens** (#502).
- ► Prevent missing hyphenmins value Lagranges (#513).
- ► Fix global babelshorthands, localmarks and verbose options (#515).
- ► Fix Latin shorthands (#516).
- ► Remove spurious space in Bosnian date (#528).
- ► Fix \languagevariant and \mainlanguagevariant macros (#530, #531).
- ► Make \iflanguageloaded and friends work in preamble (#532).
- ▶ Fix deactivation of shorthands (#320).
- Fix deactivation of numerals.
- ► Update deprecated LTFX hooks (#523).
- ► Fix luatexrenderer option which was not considered appropriately (#533).
- ► Turn warning about totalhyphenmin to info, which is more appropriate (#111).

Documentation improvements

► Document in this manual where to report bugs (#512).

1.53 (2021/04/12)

New features

- ► New option **localalph** for Croatian (#486).
- Use ordinals in part and chapter headings. A new option chapterformat has been added to disable this or change format to Roman numbering (#479).
- ► New command \uyghurordinal and \uyghurord to produce Uyghur ordinals from 1-100.

Bug fixes

- ► Fix typo in Uyghur language definition file (#479).
- ► Fix Uyghur date format (#479).
- Fix Uyghur caption format and add swapstrings option (#479).
- ► Add overlooked digraphs in Croatian (#484).
- ► Fix typo in Serbian \thepart (#485).
- Fix part modifications in Hungarian with hyperref (#493).

1.52 (2021/03/16)

New features

- ► Adaptations to Lagarance 2 for Korean (#477).
- ► Add support for Uyghur (#475).
- New option mathfunctions for Russian and Ukrainian allows to disable the definitions of math macros that might clash with other packages (#465).
- ► Support LaTeX's new NFSS hooks (#471).

Bug fixes

- ► Fix French part modifications with hyperref (#469).
- ► Fix markup of French \see and \alsoname (#468).

1.51 (2020/12/08)

New features

- ▶ New option frenchpart for French (#458).
- ► New option **splithyphens** for Croatian (#454).

Bug fixes

- Use new LaTeX core hooks rather than filehook package. This fixes a recent breakage of filehook with other external packages (#453).
- ► Remove very old code that pretends polyglossia is babel (#455).
- ► Fix spelling of Albanian contentsname (#456).
- ► Fix part heading modification in French (#458).
- ► Fix extra space in Hebrew (#459).
- Register main polyglossia language earlier (#461).
- Allow for hyphenations in words following opening guillemet in French with XeTeX (#462).

1.50a (2020/10/15)

Bug fixes

► Assure \autodot is defined with \KOMAScript in Russian.

1.50 (2020/10/09)

New features

- Polyglossia now uses the Harfbuzz renderer by default with LuaTeX output. This brings LuaTeX on par with XeTeX for all scripts (#337). The renderer can be changed via the new global luatexrenderer option.
- ► The (previously inadvertently working) hyphenrules environment that ceased to work after a recent babel update is back and now officially supported. The environment now also supports language options and aliases (#427).
- New command \setlanghyphenmins to adapt hyphenation thresholds of languages and varieties.
- ► New command \abjadalph for Arabic with corresponding option (#431).
- Replace consecutive glues around punctuation by the correct amount of space with lualatex for French, ecclesiastic Latin, and Sanskrit (#437).

Bug fixes

- ► Remove warning about missing Brazil patterns (#404).
- ► Fix incompatibility with recent babel release (#408).
- ► Fixed some spellings in Marathi (#409).
- Fix spacing of geminating dot in Catalan (#410).
- Fix incompatibility of Marathi with beamer.
- ► Correct \partname in Hindi (#416).
- ▶ Updates and improvements to Kurdish (#418).
- ► Only activate shorthand character if **babelshorthands** is true (#421).
- ► Fix whitespace issue in Czech and Slovak with vlna=true (#423).
- Fix whitespace issue in Danish (#424).
- Fix catcode conflicts that might occur in language definition files f. ex. when loaded from a LaTeX3 class (#67, #425).
- ► Robustify font family switches (#428).
- ► Fix whitespace issue in Russian indentfirst option (#433).
- ► In Russian, indentfirst is now again default (#434).
- Fix LaTeX error with arabic numbering in Ukrainian (#440).
- ► Fix directionality after Hebrew decimal numbers (#441).
- ► Fix babelname of Latin Serbian (#442).
- Fix recording of secondary languages in \$\$ pg@bloaded and \$\$ pg@bcp@loaded lists (#443).
- Simplify and robustify section heading modification in Russian and introduce option forceheadingpunctuation (#444).
- ► Fix Cyrillic dash (via babelshorthand "---) when TeX ligatures are disabled (#445).
- ${\boldsymbol{\mathsf F}}$ Fix problem with large character indices in Lua module for punctuation spacing

Interface and defaults changes

Polyglossia now uses the Harfbuzz renderer by default with LuaTeX output. See new features section.

Build fixes

Fix an embarrassing bug in the dtx build script which was the reason for an utterly incomplete polyglossia.dtx file (#420).

Documentation improvements

► Document how to change \lefthyphenmin and \righthyphenmin for a language (#435).

1.49 (2020/04/08)

New features

- ► Add hook \polyglossia@language@switched to the external package interface (#398).
- Real fix for #400, that wasn't properly taken care of in 1.48.

Bug fixes

- ► Fix compilation error with some swapstring options in Hungarian (#373).
- Fix whitespace problem in Greek language.

Interface and defaults changes

► Changed Finnish caption for "Table of Contents" to "Sisällys" (#403).

1.48 (2020/03/25)

No new features

Bug fixes

- ► Fix use of Hebrew with LuaLaTeX (#389).
- ► Do not overwrite footnote redefinitions of other packages with Latin and French (#391).
- ► Fix Serbian cyrillic numerals code (#392).
- ► Fix [no]localmarks option, whose logic was swapped (part of #395).
- ► Protect localmarks function against uppercased language names (part of #395).
- ► Fix buggy redefinition of \@markright with option localmarks (#396).
- Fix incompatibility between Latin and unicode-math (#394).
- Fix usage of localmarks option without value.
- ► Emergency fixes for bugs caused by updates in babel's switch.def (#399 and #400).

Interface and defaults changes

▶ Use private macros in keyval choice keys (#390).

1.47 (2020/01/29)

New features

- ► IETF BCP-47 compliant language tags can now be used for loading and switching languages alternatively to language names (#226).
- New commands $\label{eq:new_power} \$ and $\mbox{\mbox{mainlanguageid}} \$
- ► New test \iflanguageidloaded.

- ► New list \xpg@bcp@loaded.
- ► New environment {lang}{<lang>} (this is equivalent to {<lang>}, but also available with \setlanguagealias* which does not define dedicated alias environments).
- ► New gloss option totalhyphenmin (corresponds to LuaTeX's \hyphenationmin) (#111).
- ► New test \iflanguageoption{<lang>}{<key>}{<val>} (#364).
- Restore simple alphabetic numbering for \asbuk and \Asbuk in Belarusian, Mongolian, Russian, Serbian, and Ukrainian (#377).
- New command \AsbukTrad and \asbukTrad for Belarusian, Mongolian, Russian, Serbian, and Ukrainian which uses traditional alphanumerical numbering.
- New numerals option cyrillic-trad and cyrillic-alph to differentiate simple alphabetic and traditional alphanumerical Cyrillic numbering.
- \selectbackgroundlanguage and \resetdefaultlanguage now also support language aliases.
- ► New macro \charifavailable{<char code>}{<substitution>}.
- Add French language variant swiss.
- ► Implement babelshorthands for Croatian.
- ► Implement \localnumeral for Japanese.

Bug fixes

- ► Fix font family issue in headers (#355).
- Fix whitespace issues in \text<lang> (#356).
- ► Fix option-less \babelname in multi-variant languages (#357).
- ► Fix some spacing inconsistencies with French, Latin, and Sanskrit (#358).
- ► Fix issues with babelshorthands and graphics package (#368).
- Fix some captions and improve numbering in Marathi (#370).
- ► Fix Hungarian swapstrings feature (#373).
- Fix lua punctuation code problem (#374).
- ► Fix Bengali changecounternumbering option (#381).
- ► Fix whitespace issue in Japanese (#387).
- Fix \text<lang> command with multiple paragraphs.
- ► Actually implement documented german spelling variant 1996 (= new).
- ► Fix Slovenian **localalph** option.
- Fix Czech and Slovak **splithyphens** with typewriter fonts.
- farsical.sty: fix spacing issue with some month names.
- Fix directionalty of numbers in Hebrew with XeTeX.
- Improve interoperatability with biblatex (some language variants did not work yet).

Interface and defaults changes

- Some boolean options had false value by default, which meant if you passed them without value, the logic was reversed. This has been changed, leading to change of behavior should you have used one of these options without value (#363). Concerned are the following options:
 - babelshorthands in language Belarusian, Mongolian, Ukrainian, and Russian (now babelshorthands equals babelshorthand=true, no longer babelshorthands=false).
 - ► localalph in language Slovenian (localalph now equals localalph=true).
 - fullyear in package hebrewcal (fullyear now equals fullyear=true).
- ▶ The option latesthyphen in language German is deprecated. XᢋTeX and LuaTeX nowadays always use the latest German hyphens.
- The command \setlanguagealias* (introduced in v1.46) does no longer define dedicated alias environments.

- ➤ The babelnames for Latin variants are now changed to classiclatin, ecclesiasticlatin and medievallatin. This is how the hyphenation patterns and babel \extras are named, even though the variants can currently be selected in babel only via appended "dot modifier".
- ► In accordance with the respective l3kernel change, \str_lower_case:n has been renamed to \str_lowercase:n where used in polyglossia.sty. Thus polyglossia 1.47 requires l3kernel 2020-01-12 at least.

1.46 (2019/11/15)

New features

- ► Add option indentfirst to Russian (#78).
- Add options to set and customize French-style itemize item labels to French (#89).
- Polyglossia now decodes all supported babel language names in \setdefaultlanguage, \setotherlanguage and the language switching commands (#112, #132).
- ► Add optional localized math operators to Spanish (#123).
- Swap section headings in Hungarian (#344). New option swapstrings provides control over this.
- ► Introduce macro \setlanguagealias and \setlanguagealias*.
- ➤ Introduce language switching command \textlang{lang}{...} (these are equivalent to \text<lang>, but also available with \setlanguagealias* which does not define \text<alias>).
- Add support for Afrikaans.
- Add support for Belarusian.
- ► Add support for Bosnian.
- Add support for Georgian.
- ► Add Spanish variant mexican.
- Add babelshorthands as well as options **splithyphens** and **vlna** to Slovak.
- Add Latin language variant ecclesiastic.
- ► Add Latin language options capitalizemonth, ecclesiasticfootnotes, hyphenation, prosodicshorthands, and usej.
- Add Latin shorthands for «, », æ, Æ, œ, and Œ.
- Add French language option thincolonspace.

Bug fixes

- Fix problems with fragile font settings (#24).
- ► Fix clash of French punctuation spacing with the soul package (#52).
- ► Re-enable the possibility to pass a macro as main argument to \setmainlanguage and \setotherlanguage (#331).
- ► Fix detection of default \languagevariant (#332).
- Fix LaTeX error with undefined hyphenation pattern (#346).
- Fix some babel shorthand issues by updating the shorthand code from recent babel.
- ► Fix some problems with French and Latin auto-spacing (#345, #352).
- ► Fix an expl3 declaration (#348).

Interface and defaults changes

• The sub-package cyrillicnumbers.sty has been renamed to xpg-cyrillicnumbers.sty (per TeXLive request).

- In Russian, all paragraphs are now indented by default, as common in Russian typography.
 The behavior can be opted out by indentfirst=false.
- In Czech, splithyphens and lvna are enabled by default. Also, the option does now work as well with LuaTeX.
- Changed option name fraktur to blackletter in German (the former is still available as an alias).
- In French, high punctuation characters and guillemets are spaced by half an interword space now instead of a \thinspace (cf. #345).

1.45 (2019/10/27)

New features

- Introduce a framework for external packages to access language variants. This fixes, among other things, long-standing problems in the interaction of biblatex and polyglossia.
- Add new macros \languagevariant and \mainlanguagevariant as well as \babelname and \mainbabelname for package authors to access language information.
- Add new test \iflanguageloaded{<language>}{<true>}{<false>} where <language> can be a polyglossia or babel language name.
- Add new macros \localnumeral, \localnumeral*, \Localnumeral and \Localnumeral* that convert Arabic digitals to the local number scheme.
- Add new macro \pghyphenation to add language-specific hyphenation exceptions (#18).
- ► Add support form (Khalkha & Cyrillic) Mongolian in line with babel-mongolian (#23).
- Add option splithyphens and vlna to Czech (XeTeX only; for LuaTeX, use the package luavlna to get these features) (#32).
- ► Add support for Kurdish, both Kurmanji and Sorani (#277).
- ► Implement proper Cyrillic (alphanumeric) numbering (#285).
- Add new language friulian. This deprecates friulan (which is still supported for backwards compatibility).
- ► Add new language malay with variants indonesian and malaysian. This deprecates bahasai and bahasam (which are still supported for backwards compatibility).
- Add new language gaelic with variants irish and scottish. This deprecates irish and scottish as own polyglossia languages (which are still supported for backwards compatibility).
- Add new language hungarian. This deprecates magyar (which is still supported for backwards compatibility).
- Add new language sorbian with variants lower and upper. This deprecates Isorbian and usorbian (which are still supported for backwards compatibility).
- Add new language portuguese with variants portuguese and brazilian. This deprecates brazil and portuges (which are still supported for backwards compatibility).
- Add new language norwegian with variants nynorsk and bokmal. This deprecates nynorsk and norsk (which are still supported for backwards compatibility).
- Add new language persian. This deprecates farsi (which is still supported for backwards compatibility).
- Add new language sami. Currently only Northern Sami is supported. This deprecates samin (which is still supported for backwards compatibility).
- ▶ gloss-serbian: add numerals=cyrillic option. Add \asbuk and \Asbuk (#285).
- ► Implement basic support for (French) canadien and (English) canadian (#22).
- ► Improve support for Armenian (#79): Add captions, Eastern month names (accessible via variant=eastern) and Armenian alphabetic numbering (via numerals=armenian and \armenicnumeral).

- Add french option autospacing and commands \AutoSpacing, \NoAutoSpacing This allows to switch off autospacing globally or locally (#113).
- ► Fixup \normalfont (#203).
- ► Fix directionality issues in mixed RTL/LTR paragraphs (#204).
- ► Implement babelshorthands for Finnish (#212) and Czech.
- ► Implement access to current language via Lua (#243).
- ► Introduce french option option autospacetypewriter alias OriginalTypewriter.
- ► Support \aemph with lualatex
- Rename automaticspacesaroundguillemets to autospaceguillemets The old option is kept for backwards compatibility.

Bug fixes

- ► Fix equation number in Arabic and Farsi (#7).
- ► Simplify and document Hebrew marcheshvan option (#16).
- ► Fix hyphenation of Greek with LuaTeX (#55).
- ► Fix N'ko date format (#63).
- ▶ Disable the extras of a language when a nested language starts (#66, #169).
- ► Properly implement Bengali numbers (#69, #184).
- Fix conflicts with other packages caused by premature shorthand activation in preamble (#81, #200).
- Fix kerning in math with French (#92).
- ► Fix expansion issue in Hebrew (#93).
- Fix numbering expansion issue in Greek (#110).
- ► Postpone \disablehyphenation in preamble until after setting of document language (#125).
- ► Postpone the assignment of defaultfamily to \AtBeginDocument, thus do not overwrite \familydefault redefinitions in the preamble (#127).
- ${\color{blue} \blacktriangleright}$ Reset number settings when switching language (#133).
- ► Hebrew: Properly store \MakeUppercase for later restoration (#152).
- ► Fix whitespace issue in \datewelsh (#158).
- ► When switching language, set the language/script specific font families (#164).
- ► Correct some Bengali captions (#165).
- ► Fix documentation of Serbian (#168).
- ► Reset ucl codes in Latin only if the respective variant is used (#172).
- ► Fix \disablehyphenation with LuaTeX (#187).
- ► Fix typos in Hindi captions (#202).
- ► Pass language options to the aux files (#205).
- ► Rewrite and fix English variant handling (#208).
- ► Define magyar caption formats in \blockextras and undef them in \noextras (#209).
- Ensure proper direction with arabic digits in Arabic and Farsi (#213).
- ► Fix \linespread with Korean (#218).
- ▶ Define Russian caption before key allocation (#219).
- ► Register current language in polyglossia lua module after selection (#234).
- Fix babel language switching commands (#239): \foreignlanguage and the starred otherlanguage* environment are not supposed to change dates.
- ► Fix French spacing leaking beyond French (#270).
- ► Redefine font families for French only if language is loaded (#270).
- ▶ aloss-russian:
 - ► Check whether command exist before redefining (#280).
 - ► Fix some whitespace issues.

- ► Fix and simplify \frenchfootnote definition (#294).
- Fix footnote numbering in Farsi.
- Fix Latin footnotes in Arabic documents.
- Set the correct main direction with luabidi.
- ► Fix autospaceguillemets option in French.
- ► Fix grouping in gloss-danish.ldf.
- ► Properly store \MakeUppercase and \@arabic for later restoration.

Documentation

- Add documentation about footnotes in RTL context
- ► Document Tibetan numerals option (#109).
- ► Improve \frenchfootnote documentation.
- Mention Japanese support in the docs.

1.44 (2019/04/04)

- ► Correction to Russian language file, by MAKSIM ZHOLUDEV (commit d2f383e).
- ► Added Macedonian language file, by STEFAN ZLATINOV (commit cd379e1).

1.43 (2019/03/05)

► Correction to Hindi language file, by ZDENĚK WAGNER.

1.42.5 (2017/04/13)

► Many changes to the French language file, by Maïeul Rouquette.

1.42.4 (February, March 2016)

- Remedial actions for the babel changes.
- ► Fixed side effect of pull request #122 (see commit d2a34ff).
- Added automatic Josa selection, variant, and captions options to Korean, by Dohyun Kim (pull request #128).
- Updated gloss-occitan from CTAN.

18-01-2016

- ► Fixed issue #124 (minor typo in polyglossia-frpt.lua)
- ► Merged pull request #117 for more French guillemet spacing
- ► Merged pull request #121 to add \bbl@loaded; fixes issue #120
- ► Merged pull request #122 that build on #121
- ► Merged pull request #116 for French (spacing around guillemets)
- ► Fixed issue #115 (spurious spaces in Arabic)

19-08-2015

► Fixed issue #107 for Marathi (labels and month names)

1.42.0 (2015/08/06)

- Add Bengali digits package, and option to reset all numbering functions.
- Add long option for Welsh date.
- Add local alphabet in Slovenian, for enumerations and such.
- Fix long-standing bug with Welsh: date should use ordinals.
- Fix for Latin with LuaTeX: all variants had same problems as Classic.
- Fixed error with British variant of English and LuaTeX (issue #86).

1.41.0 (2015/07/16)

► Added support for Khmer, by SAY OL (private email)

1.40.1 (2015/07/14)

► Bugfix for Korean, by DOHYUN KIM (pull request #103)

1.40.0 (2015/07/07)

► gloss-korean.ldf contributed by DOHYUN KIM (pull request #102)

1.33.7 (2015/07/04)

- ▶ Release to CTAN, no code change
- ► Fixed extraneous space in code for Swiss German (pull request #101)
- ► Fixed a typo in Ukrainian alphabet, for \Asbuk (pull request #99)
- ► Fix for Classic Latin: load patterns for LuaTeX
- ► Made \rmfamily, \sffamily and \ttfamily robust again
- ► Merged fix for Hebrew date format, by Guy Rutenberg (pull request #94)
- ▶ Merged fix for spurious space, by CALEB McKennan (pull request #91)
- ► Merged pull request #84 by ÉLIE ROUX for Tibetan
- ► Added support for Swiss German (pull request #75)
- ► Added commands \Asbuk and \asbuk for Ukrainian (pull request #76), similar to Russian
- Documented changes to Latin from last year.
- ▶ Be friendlier to right-to-left languages with LuaTeX
- ► Enhanced Latin support by CLAUDIO BECCARI

1.33.6 (2015/05/15)

- ► Introduce a classical and medieval variant of Latin
- ► Add \asbuk and \Asbuk for Ukrainian (after their Russian counterpart)
- ► Fix a number of bugs

1.33.5 (2014/05/21)

- ► Option to disable hyphenation entirely, by ÉLIE ROUX
- ► Fix spurious spaces in gloss-russian.ldf, by Oleg Domanov
- ► Support for the Austrian variant of German, by JÜRGEN SPITZMÜLLER
- ► Changes to the Croatian translations, by IVAN KOKAN
- ► Correction to the Lithuanian translations, by Ignas Anikevičius

1.33.4 (2013/06/27)

• Emergency release for a bug introduced in babelsh.def

1.33.3 (2013/05/28)

► Changed formatting of some error messages (emergency fixes for TeX Live 2013)

1.33.2 (2013/05/26)

- ► Added \disablehyphenation and \enablehyphenation, contributed by ÉLIE ROUX.
- Fixed bug related to package inclusion. Polyglossia would break if we loaded breqn.sty, and then called \setmainlanguage{english}, this is no longer the case.
- ► Removed spurious space introduced by \captionswedish.

1.33.1 (2013/05/23)

- · Editorial changes to the documentation
- Hunted and documented bugs

1.33.0 (2013/05/20)

- Added support for N'Ko.
- Bugfixes for LuaTeX
- ▶ More work in progress on Bidi in LuaTeX.

1.32.0 (2013/05/15)

► Transitional version to support right-to-left languages with LuaTeX.

1.31 (2013/05/10) / 1.3 (2013/05/11)

- · Several bugfixes.
- ► Sync with babel 3.9.
- ► Consolidated support for LuaTeX for all languages but the ones using South and South-East Asian scripts, and languages written from right to left. Many thanks to ÉLIE ROUX for his help.
- Added support for Tibetan, contributed by ÉLIE ROUX (end of lines are experimental).

1.30 (2012/08/06)

• Added support for LuaTeX. Many languages don't work yet. Please be patient.

1.2.0e (2012/04/28)

- Fixed a number of outstanding and not very interesting bugs.
- Added gloss files for Romansh and Friulan, contributed by Claudio Beccari.

1.2.od (2012/01/12)

• Removed \makeatletter and \makeother from gloss files entirely.

1.2.0c (2011/10/12) [First update by Arthur Reutenauer]

- Update to gloss-italian.ldf by CLAUDIO BECCARI, incorporating changes by ENRICO GREGORIO.
- ➤ Conclude every gloss file with \makeatother to match the initial \makeatletter. (Not necessary from a technical point of vue, because of one of the changes by Enrico reported below, but I like it better that way :-)
- ► Conclude polyglossia.sty with \ExplSyntaxOff to match the initial \ExplSyntaxOn.
- ► Added gloss file for Kannada, contributed by ARAVINDA VK and others.
- ► Corrections to the gloss-dutch.ldf thanks to Wouter Bolsterlee.
- ► Several patches by Enrico Gregorio, fixing long-standing bugs. From the git log:
 - Deleted setup for right-to-left writing direction, see http://tug.org/pipermail/ xetex/2011-April/020319.html
 - Changed three appearances of \newcommand to \newrobustcmd, as the commands needs to be protected. Bug reported by KAMENSKY.
 - ► Corrected \datepolish as suggested by PIOTR KEMPA
 - Changed \lccode" into \lccode\string", because it might come into action at wrong times when " is active
 - ► Changed definition of key \xpg@setup, as \@tmpfirst and \@tmpsecond were not expanded, causing dependence of \lefthyphenmin and \righthyphenmin to the last loaded language. Raised by VADIM RODIONOV on the XeTeX mailing list.
 - Deleted \bgroup and \egroup tokens from the definition of otherlanguage*; they serve no purpose (we are already inside an environment) and conflict with csquotes. Noticed by P. Lehman.
 - Changed the calls of \input to \xpg@input, which inputs the required file and resets
 the catcode of @ to the same value as it had before the input. Since each .ldf file
 starts with \makeatletter, the old behaviour would leave a category 11 @, which
 is wrong
 - ► Added \csuse{date#2} to the definition of otherlanguage*.

1.2.0b (2011/10/03) [Update by Philipp Stephani]

• Load xkeyval package explicitly since newer versions of fontspec don't load it any more.

1.2.0a (2010/07/27) [Last update by François Charette]

- Initialize \fontfamily acc to value of \familydefault (Fixes a bug when using polyglossia with beamer)
- ▶ Remove spurious space in def of \dateenglish
- Add missing English variant american
- ► Serbian: fix date format and captions (Latin+Cyrillic)
- ▶ Fix \atticnumeral in gloss-greek
- Small improvements and fixes in documentation

1.2.0 (2010/07/15)

- ► Adapted for fontspec 2.0 (will not work with earlier versions!)
- ► Implementation of a \PolyglossiaSetup interface that simplifies writing gloss-*.ldf files
- ► Many internal enhancements and refactoring (including a patch by DIRK ULRICH)
- ► Improved automatic font setup when \<lang>font is not defined
- ► New environment otherlanguage* (equivalent to \foreignlanguage (Enrico Gregorio)

- Bugfix to prevent bogus expansion of \{rm,sf,tt}family even in aux files (ENRICO GREGORIO)
- New gloss files for Armenian, Bengali, Occitan, Bengali, Lao, Malayalam, Marathi, Tamil, Telugu, and Turkmen.
- New auxiliary packages devanagaridigits and bengalidigits
- hijrical no longer loads bidi and checks for incompatible l3calc
- ► Add babel shorthands for Russian (based on a patch by VLADIMIR LOMOV)
- ► Fix \fnum@{table,figure} for Lithuanian
- ► Various improvements in gloss-russian (provided by VLADIMIR LOMOV and others)
- · Corrected captions for Bahasai, Lithuanian, Russian, Croatian
- Add option indentfirst=true for Spanish, Croatian and other languages (indentfirst
 was previously named frenchindent)
- New option script for German: Setting script=fraktur modifies the captions for typesetting in Fraktur.
- ▶ New command \aemph for Arabic, Farsi, Urdu, etc. to mark emphasis through overlining.
- Package option nolocalmarks is now true by default: to activate it the option localmarks must be passed instead.
- ► Loading languages à la babel as package options is no longer possible (this feature was deprecated since v1.1.0).

1.1.1 (2010/03/23)

- ► Bugfix for French: explicit spaces before/after double punctuation signs (Par exemple : les grands « espaces » du Canada !) are now replaced by the appropriate non-breaking spaces, as in babel.
- Bugfix for font switching mechanism within Latin script (pending a complete re-implementation in v1.2): the font shape and series are no longer reset when switching language.
- New macros for non-Western decimal digits (instead of fontmappings)
- New gloss files for Asturian, Lithuanian and Urdu
- hijrical.sty is now locale-aware: \hijritoday is formatted differently in Arabic, Farsi, Urdu, Turkish and Bahasa Indonesia.
- ▶ Enable babelshorthands for Dutch
- ► Add missing macro \allowhyphens
- ▶ Add global option babelshorthands
- Support Catalan geminated l
- Bugfix when declaring more than one pkg option
- Protect \reset@font
- Add missing requirement makecmds
- ► Bugfix for smallcaps in captions
- ▶ Typo for ccname in Hebrew
- ► Add option **numerals** to gloss-russian
- ▶ Provide \newXeTeXintercharclass when undefined
- ► Bugfix for Russian \alph
- ► Remove superfluous level of {} in definition of \markright
- ► Bugfix for \datecatalan
- ► Change hyphenmins for Sanskrit

1.1.0b (2009/11/22)

- ► Modify \hyphenmins for Sanskrit (YVES CODET)
- ► Bugfixes for Serbian and Bulgarian (ENRICO GREGORIO)

1.1.0a (2009/11/22)

▶ Bugfix for interchar tokens

1.1.0 (2009/11/20)

- ► Use \newXeTeXintercharclass (thanks to Enrico Gregorio)
- Fixed implementation of shorthands for German (babel code in file babelsh.def)
- ► Arabic (KHALED HOSNY):
 - ► Fix abjad form for 3 and 5 and add option \abjadjimnotail
 - ▶ bugfix for \arabicnumber
 - make Gregorian calendar the default
 - fixed typos in the sample text
- ► Turkish (S. Ö. YILDIZ):
 - fix white-space before : and !
 - also check if the font specified TRK for language
 - added missing Turkish translation of "Glossary"
- Suppress nopattern warning for non-hyphenated scripts
- ► Changed U+0163 to U+021B for Romanian (ELIE ROUX)
- ► Stylistic fixes and use macro \xpg@option for package options (E. Gregorio)
- ► Fix month names in Dutch (A. LEDDA)
- ▶ Add Brazilian translation for "glossary"
- Remove spurious space generated by gloss-spanish
- ► Fix ldf file for brazilian
- ► Various improvements in the code communicated by E. Gregorio:
 - remove superfluous \protect\language
 - ► change default language from 0 to \l@nohyphenation=255
 - ▶ localize lccode handling of apostrophe in French; add it to Italian
- ► Fix frenchspacing for Vietnamese
- Other minor bugfixes

1.0.2 (2009/01/27)

- · Captions corrected in Hebrew, Russian and Spanish
- ► Removed all \text<lang> wrappers within caption definitions
- Improved compatibility with babel
- ▶ New option babelshorthands for German
- ► New option **Script** for Sanskrit

1.0.1 (2008/07/31)

- Improved documentation (added sections on font setup and numeration mappings)
- Improvements and bug fixes for English and German
- ► Bugfix in gloss-syriac.ldf (spurious space after \textsyriac{...})
- ► Extended the scope of \syriacabjad
- ► Added gloss-amharic.ldf (ported from ethiop.ldf in the package ethiop)

1.0 (2008/07/13)

► Initial release on CTAN.

14 Acknowledgements (by François Charette)

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