Babel support for the German language (traditional orthography)

Johannes Braams   Bernd Raichle   Walter Schmidt

Jürgen Spitzmüller*

v2.10 (2018/03/29)

Abstract

This manual documents the babel language definition file `germanb.ldf` for German (traditional orthography). The file is part of the babel-german bundle.

1   Aim and usage

The file `germanb.ldf` provides the babel package with all language definition macros (language specific strings and settings) for the German language, including the Austrian and Swiss varieties of German.[1] Furthermore, it assures that the correct hyphenation patterns for the respective language or variety are used.[2] The file adheres to the traditional (1901–1996) orthography. For reformed (post-1996) German orthography support, please refer to the complementary `ngermanb.ldf` file.

In order to use the language definitions provided here, you need to use the babel package and pass the respective language name as an option, either of

- `\usepackage[german]{babel}`

- `\usepackage[austrian]{babel}`

- `\usepackage[swissgerman]{babel}`

Using multiple varieties in parallel is possible; consult the babel manual [2] for details.

---

*Current maintainer. Please report issues via `https://github.com/jspitz/babel-german`.

[1]The file `germanb.ldf` started as a re-implementation of the package `german.sty` (v. 2.5b), which was originally developed by Hubert Partl (cf. [4]) and later maintained by Bernd Raichle (cf. [5]). Johannes Braams did the initial re-implementation.

[2]Currently, these are the default hyphenation patterns for pre-1996 German spelling (`dehypht-x` or `dehyphts-x`, respectively – the latter for Swiss German –, via the hyph-utf8 [6] package). For some years now, ever-improving 'experimental' new hyphenation patterns are available via the dehyph-exptl package [3]. They are not used by babel-german yet due to their experimental status. Please refer to the documentation of dehyph-exptl for instructions how to use these experimental patterns with babel-german.

2 Shorthands

For all three varieties of German, the character " is made active in order to provide some shorthand macros. Some of these shorthands address a peculiarity of traditional German spelling: consonantial character combinations that change in the context of hyphenations. Other shorthands are provided for frequently used special characters as well as for better control of hyphenation, line breaks and ligatures. Table 1 provides an overview of the shorthands that are provided by `germanb.ldf`.

Table 1: Shorthands provided by `germanb.ldf`

`"a`	Umlaut ⟨ä⟩ (shorthand for `\"a`). Similar shorthands are available for all other lower- and uppercase vowels (umlauts: `"a`, `"o`, `"u`, `"A`, `"O`, `"U`; tremata: `"e`, `"i`, `"E`, `"I`).
`"s`	German ⟨ß⟩ (shorthand for `\ss{}`); but cf. sec. 3.
`"z`	German ⟨ß⟩ (shorthand for `\ss{}`). Differs to `"s` in uppercase version; but cf. sec. 3.
`"ck`	⟨ck⟩, hyphenated as ⟨k-k⟩.
`"ff`	⟨ff⟩, hyphenated as ⟨ff-f⟩; this is also implemented for ⟨l⟩, ⟨m⟩, ⟨n⟩, ⟨p⟩, ⟨r⟩ and ⟨t⟩. Please refer to sec. 3 for why this does not include ⟨s⟩.
`"S`	`\uppercase{"s}`, typeset as ⟨SS⟩ (⟨ß⟩ must be written as ⟨SS⟩ [or ⟨SZ⟩, see below] in uppercase writing).
`"Z`	`\uppercase{"z}`, typeset as ⟨SZ⟩ (⟨ß⟩ must be written as ⟨SZ⟩ [or ⟨SS⟩, see above] in uppercase writing).
`"|`	Disable ligature at this position (e. g., at morpheme boundaries, as in `Auf"|lage`).
`"-`	An additional breakpoint that does still allow for hyphenation at the breakpoints preset in the hyphenation patterns (as opposed to `\-`).
`"=`	An explicit hyphen with a breakpoint, allowing for hyphenation at the other points preset in the hyphenation patterns (as opposed to plain `-`); useful for long compounds such as `IT"=Dienstleisterinnen`.
`"~`	An explicit hyphen without a breakpoint. Useful for cases where the hyphen should stick at the following syllable, e. g., `bergauf und "~ab`.
`""`	A breakpoint that does not output a hyphen if the line break is performed (consider parenthetical extensions as in `(pseudo"~)""wissenschaftlich`).
`"/`	A slash that allows for a linebreak. As opposed to `\slash{}`, hyphenation at the breakpoints preset in the hyphenation patterns is still allowed.
`"'`	German left double quotes ⟨„⟩.
`"'`	German right double quotes ⟨"⟩.
`"<`	French/Swiss left double quotes ⟨«⟩.
`">`	French/Swiss right double quotes ⟨»⟩.

New feature in v. 2.9! (margin note aligned with `"/` row)

Table 2 lists some babel macros for quotation marks that might be used as an alternative to the quotation mark shorthands provided by `germanb.ldf`.

3 Variety-specific options

New feature in v. 2.10! (margin note)

In Swiss (and Liechtensteinian) German writing, the use of ⟨ß⟩ is rather uncommon. Swiss writers would normally use ⟨ss⟩ where German or Austrian writers use the ⟨ß⟩ character (e. g., *Buße* vs. *Busse*). When texts (or names) from other German speaking

Table 2: Alternative commands for quotation marks (provided by babel)

\glqq	German left double quotes ⟨„⟩.
\grqq	German right double quotes ⟨"⟩.
\glq	German left single quotes ⟨‚⟩.
\grq	German right single quotes ⟨'⟩.
\flqq	French/Swiss left double quotes ⟨«⟩.
\frqq	French/Swiss right double quotes ⟨»⟩.
\flq	French/Swiss left single quotes ⟨‹⟩.
\frq	French/Swiss right single quotes ⟨›⟩.
\dq	The straight quotation mark character ⟨"⟩.

areas are quoted, however, the spelling is often maintained (particularly in scholarly writing where the spelling of quoted text is not supposed to be touched).

We assume that Swiss writers will normally input ⟨ss⟩ directly when they mean ⟨ss⟩, and we assume furthermore that the ⟨ß⟩-related shorthands "s and "z are useful also for Swiss writers when they actually need ⟨ß⟩, the more so since the ⟨ß⟩ is not as directly accessible on Swiss keyboards as it is on German and Austrian ones. On the other hand, there might be occasions where writers want to transfer a text from German or Austrian Standard into Swiss Standard German and adapt the spelling on the fly, i. e., transform all ⟨ß⟩ into ⟨ss⟩.

For this special case, we provide an option to make the ⟨ß⟩-related shorthands "s and "z expand to the respective digraphs, ⟨ss⟩ and ⟨sz⟩, rather than to ⟨ß⟩. This is not the default behavior with nswissgerman since, as mentioned, there are situations when the ⟨ß⟩ is (and has to be) used in Swiss writing, and normally, no shorthand is needed to input (or output) two simple ⟨s⟩ characters. You can opt-in (and out) digraphical expansion of ⟨ss⟩ and ⟨sz⟩ on a global and local level:

- To globally switch on the digraphical expansion, use the Babel modifier toss (read: 'to ⟨ss⟩') with swissgerman. I. e., pass swissgerman.toss (rather than swissgerman) as babel option.

- To switch on the digraphical expansion only locally, you can use the boolean switch \tosstrue. Likewise, \tossfalse switches off (both locally and globally set) digraphical expansion.

This results in the following deviant behavior of two shorthands:

"s	Expands to digraph ⟨ss⟩
"z	Expands to digraph ⟨sz⟩

One further note related to the use of ⟨ss⟩ in Swiss German: as opposed to other consonantial letters, the ⟨s⟩ is excluded from the three consonant rule (*Dreikonsonantenregel*) of traditional German spelling which prescribes that one of three identical consonants has to be omitted if a vowel follows the three consonants (i. e., *Schiffahrt*, not *Schifffahrt*), except if the word is hyphenated (*Schiff-fahrt*); the shorthands "ff etc. account for that).

This does not apply to ⟨s⟩! In that case, always all three consonants are spelled out (e. g., *Kongresssaal*, not *Kongressaal*). This is why we don't provide a shorthand for the ⟨sss⟩ case.

4 Implementation

4.1 General settings

First, we define some helper macros that help us to identify later on which variety of German we are currently dealing with.

```
1 \def\bbl@opt@german{german}
2 \def\bbl@opt@germanb{germanb}
3 \def\bbl@opt@austrian{austrian}
4 \def\bbl@opt@swissgerman{swissgerman}
```

If `germanb.ldf` is read via the deprecated babel option `germanb`, we make it behave as if `german` was specified.

```
5 \ifx\CurrentOption\bbl@opt@germanb
6   \def\CurrentOption{german}
7   \ifx\l@german\@undefined
8     \@nopatterns{German (trad. orthography)}
9     \adddialect\l@german0
10  \fi
11  \let\l@germanb\l@german
12  \AtBeginDocument{%
13    \let\captionsgermanb\captionsgerman
14    \let\dategermanb\dategerman
15    \let\extrasgermanb\extrasgerman
16    \let\noextrasgermanb\noextrasgerman
17  }
18 \fi
```

The macro `\LdfInit` takes care of preventing that this file is loaded more than once with the same option, checking the category code of the @ sign, etc.

```
19 \LdfInit\CurrentOption{captions\CurrentOption}
```

If `germanb.ldf` is read as an option, i.e. via `\usepackage` command, `german` could be an 'unknown' language, so we have to make it known. We check for the existence of `\l@german` and issue a warning if it is unknown.

```
20 \ifx\l@german\@undefined
21   \@nopatterns{German (trad. orthography)}
22   \adddialect\l@german0
23 \fi
```

We set `austrian` as a dialect of `german`, since the Austrian variety uses the same hyphenation patterns as Germany's Standard German. If no German patterns are found, we issue a warning.

```
24 \ifx\CurrentOption\bbl@opt@austrian
25   \ifx\l@german\@undefined
```

```
26     \@nopatterns{German (trad. orthography), needed by Austrian (trad. orthography)}
27     \adddialect\l@austrian0
28   \else
29     \adddialect\l@austrian\l@german
30   \fi
31 \fi
```

For the Swiss variety, we attempt to load the specific swissgerman hyphenation patterns and fall back to german if those are not available. If no patterns are found, we issue a warning.

```
32 \ifx\CurrentOption\bbl@opt@swissgerman
33   \ifx\l@swissgerman\@undefined
34     \ifx\l@german\@undefined
35       \@nopatterns{Swiss German (trad. orthography) and German (trad. orthography)}
36       \adddialect\l@swissgerman0
37     \else
38       \@nopatterns{Swiss German (trad. orthography)}
39       \adddialect\l@swissgerman\l@german
40     \fi
41   \fi
42 \fi
```

4.2   Language-specific strings (captions)

The next step consists of defining macros that provide language specific strings and settings.

\@captionsgerman The macro \@captionsgerman defines all strings used in the four standard document classes provided with LATEX for German. This is an internal macro that is inherited and modified by the following macros for the respective language varieties.

```
43 \@namedef{@captionsgerman}{%
44   \def\prefacename{Vorwort}%
45   \def\refname{Literatur}%
46   \def\abstractname{Zusammenfassung}%
47   \def\bibname{Literaturverzeichnis}%
48   \def\chaptername{Kapitel}%
49   \def\appendixname{Anhang}%
50   \def\contentsname{Inhaltsverzeichnis}%
51   \def\listfigurename{Abbildungsverzeichnis}%
52   \def\listtablename{Tabellenverzeichnis}%
53   \def\indexname{Index}%
54   \def\figurename{Abbildung}%
55   \def\tablename{Tabelle}%
56   \def\partname{Teil}%
57   \def\enclname{Anlage(n)}%
58   \def\ccname{Verteiler}%
59   \def\headtoname{An}%
60   \def\pagename{Seite}%
61   \def\seename{siehe}%
```

```
62    \def\alsoname{siehe auch}%
63    \def\proofname{Beweis}%
64    \def\glossaryname{Glossar}%
65 }
```

\captionsgerman The macro \captionsgerman is identical to \@captionsgerman, but only defined if german is requested.

```
66 \ifx\CurrentOption\bbl@opt@german
67    \@namedef{captionsgerman}{%
68      \@nameuse{@captionsgerman}%
69    }
70 \fi
```

\captionsaustrian The macro \captionsaustrian builds on \@captionsgerman, but redefines some strings following Austrian conventions (for the respective variants, cf. [1]). It is only defined if austrian is requested.

```
71 \ifx\CurrentOption\bbl@opt@austrian
72    \@namedef{captionsaustrian}{%
73      \@nameuse{@captionsgerman}%
74      \def\enclname{Beilage(n)}%
75    }
76 \fi
```

\captionsswissgerman The macro \captionsswissgerman builds on \@captionsgerman, but redefines some strings following Swiss conventions (for the respective variants, cf. [1]). It is only defined if swissgerman is requested.

```
77 \ifx\CurrentOption\bbl@opt@swissgerman
78    \@namedef{captionsswissgerman}{%
79      \@nameuse{@captionsgerman}%
80      \def\enclname{Beilage(n)}%
81    }
82 \fi
```

4.3   Date localizations

\month@german The macro \month@german defines German month names for all varieties.

```
83 \def\month@german{\ifcase\month\or
84    Januar\or Februar\or M\"arz\or April\or Mai\or Juni\or
85    Juli\or August\or September\or Oktober\or November\or Dezember\fi}
```

\dategerman The macro \dategerman redefines the command \today to produce German dates. It is only defined if german is requested.

```
86 \ifx\CurrentOption\bbl@opt@german
87    \def\dategerman{\def\today{\number\day.~\month@german
88        \space\number\year}}
89 \fi
```

\dateswissgerman	The macro \dateswissgerman does the same for Swiss German dates. It is only defined if swissgerman is requested. The result is identical to German.

```
90 \ifx\CurrentOption\bbl@opt@swissgerman
91   \def\dateswissgerman{\def\today{\number\day.~\month@german
92     \space\number\year}}
93 \fi
```

\dateaustrian	The macro \dateaustrian redefines the command \today to produce Austrian versions of the German dates. Here, the naming of January („Jänner") differs from the other German varieties. The macro is only defined if austrian is requested.

```
94 \ifx\CurrentOption\bbl@opt@austrian
95   \def\dateaustrian{\def\today{\number\day.~\ifnum1=\month
96     J\"anner\else \month@german\fi \space\number\year}}
97 \fi
```

4.4 Extras

\extrasgerman	The macros \extrasgerman, \extrasaustrian and \extrasswissgerman, respectively, will perform all the extra definitions needed for the German language or the respective variety. The macro \noextrasgerman is used to cancel the actions of \extrasgerman. \noextrasaustrian and \noextrasswissgerman behave analoguously.
\extrasaustrian	
\extrasswissgerman	
\noextrasaustrian	
\noextrasswissgerman	
\noextrasgerman	First, the character " is declared active for all German varieties. This is done once, later on its definition may vary.

```
98 \initiate@active@char{"}
```

Depending on the option with which the language definition file has been loaded, the macro \extrasgerman, \extrasaustrian or \extrasswissgerman is defined. Each of those is identical: they load the shorthands defined below and activate the " character.

```
99  \@namedef{extras\CurrentOption}{%
100   \languageshorthands{german}}
101 \expandafter\addto\csname extras\CurrentOption\endcsname{%
102   \bbl@activate{"}}
```

toss	For Swiss German, we allow optionally to expand the ⟨ß⟩-related shorthands the Swiss way, i. e. as ⟨ss⟩ (globally, if the modifier toss is used or locally if \tosstrue.).
\tosstrue	
\tossfalse	

```
103 \newif\iftoss\tossfalse
104 \newif\ifbbl@toss\bbl@tossfalse
105 \ifx\bbl@mod@swissgerman\@undefined\else
106   \@expandtwoargs\in@{,toss,}{,\bbl@mod@swissgerman,}
107   \ifin@
108     \tosstrue
109   \fi
110   \addto\extrasswissgerman{%
111     \iftoss\bbl@tosstrue\else\bbl@tossfalse\fi}
112 \fi
```

Next, again depending on the option with which the language definition file has been loaded, the macro \noextrasgerman, \noextrasaustrian or \noextrasswissgerman is defined. These deactivate the " character and thus turn the shorthands off again outside of the respective variety.

```
113 \expandafter\addto\csname noextras\CurrentOption\endcsname{%
114   \bbl@deactivate{"}}
115 \ifx\CurrentOption\bbl@opt@swissgerman
116   \addto\noextrasswissgerman{\bbl@tossfalse}
117 \fi
```

In order for TeX to be able to hyphenate German words which contain 'ß' (in the OT1 position ^^Y) we have to give the character a nonzero \lccode (see Appendix H, the TeXbook).

```
118 \expandafter\addto\csname extras\CurrentOption\endcsname{%
119   \babel@savevariable{\lccode25}%
120   \lccode25=25}
```

The umlaut accent macro \" is changed to lower the umlaut dots. The redefinition is done with the help of \umlautlow.

```
121 \expandafter\addto\csname extras\CurrentOption\endcsname{%
122   \babel@save\"\umlautlow}

123 \expandafter\addto\csname noextras\CurrentOption\endcsname{%
124   \umlauthigh}
```

The German hyphenation patterns can be used with \lefthyphenmin and \righthyphenmin set to 2.

```
125 \providehyphenmins{\CurrentOption}{\tw@\tw@}
```

For German texts we need to assure that \frenchspacing is turned on.

```
126 \expandafter\addto\csname extras\CurrentOption\endcsname{%
127   \bbl@frenchspacing}
128 \expandafter\addto\csname noextras\CurrentOption\endcsname{%
129   \bbl@nonfrenchspacing}
```

4.5   Active characters, macros & shorthands

The following code is necessary because we need an extra active character. This character is then used as indicated in table 1.

In order to be able to define the function of ", we first define a couple of 'support' macros.

\dq   We save the original double quotation mark character in \dq to keep it available, the math accent \" can now be typed as ".

Furthermore, we define some helper macros for contextual ⟨ß⟩ handling.

```
130 \begingroup \catcode'\"12
131 \def\x{\endgroup
132   \def\dq{"}
133   \def\@SS{\mathchar"7019 }
```

```
134    \def\bbl@ss{\ifbbl@toss ss\else\textormath{\ss}{\@SS{}}\fi}
135    \def\bbl@SS{SS}
136    \def\bbl@sz{\ifbbl@toss sz\else\textormath{\ss}{\@SS{}}\fi}
137    \def\bbl@SZ{SZ}
138 }
139 \x
```

Now we can define the doublequote shorthands: the umlauts,

```
140 \declare@shorthand{german}{"a}{\textormath{\"{a}\allowhyphens}{\ddot a}}
141 \declare@shorthand{german}{"o}{\textormath{\"{o}\allowhyphens}{\ddot o}}
142 \declare@shorthand{german}{"u}{\textormath{\"{u}\allowhyphens}{\ddot u}}
143 \declare@shorthand{german}{"A}{\textormath{\"{A}\allowhyphens}{\ddot A}}
144 \declare@shorthand{german}{"O}{\textormath{\"{O}\allowhyphens}{\ddot O}}
145 \declare@shorthand{german}{"U}{\textormath{\"{U}\allowhyphens}{\ddot U}}
```

tremata,

```
146 \declare@shorthand{german}{"e}{\textormath{\"{e}}{\ddot e}}
147 \declare@shorthand{german}{"E}{\textormath{\"{E}}{\ddot E}}
148 \declare@shorthand{german}{"i}{\textormath{\"{\i}}%
149                                {\ddot\imath}}
150 \declare@shorthand{german}{"I}{\textormath{\"{I}}{\ddot I}}
```

German ß,

```
151 \declare@shorthand{german}{"s}{\bbl@ss}
152 \declare@shorthand{german}{"S}{\bbl@SS}
153 \declare@shorthand{german}{"z}{\bbl@sz}
154 \declare@shorthand{german}{"Z}{\bbl@SZ}
```

German and French/Swiss quotation marks,

```
155 \declare@shorthand{german}{"`}{\glqq}
156 \declare@shorthand{german}{"'}{\grqq}
157 \declare@shorthand{german}{"<}{\flqq}
158 \declare@shorthand{german}{">}{\frqq}
```

discretionary commands

```
159 \declare@shorthand{german}{"c}{\textormath{\bbl@disc ck}{c}}
160 \declare@shorthand{german}{"C}{\textormath{\bbl@disc CK}{C}}
161 \declare@shorthand{german}{"F}{\textormath{\bbl@disc F{FF}}{F}}
162 \declare@shorthand{german}{"l}{\textormath{\bbl@disc l{ll}}{l}}
163 \declare@shorthand{german}{"L}{\textormath{\bbl@disc L{LL}}{L}}
164 \declare@shorthand{german}{"m}{\textormath{\bbl@disc m{mm}}{m}}
165 \declare@shorthand{german}{"M}{\textormath{\bbl@disc M{MM}}{M}}
166 \declare@shorthand{german}{"n}{\textormath{\bbl@disc n{nn}}{n}}
167 \declare@shorthand{german}{"N}{\textormath{\bbl@disc N{NN}}{N}}
168 \declare@shorthand{german}{"p}{\textormath{\bbl@disc p{pp}}{p}}
169 \declare@shorthand{german}{"P}{\textormath{\bbl@disc P{PP}}{P}}
170 \declare@shorthand{german}{"r}{\textormath{\bbl@disc r{rr}}{r}}
171 \declare@shorthand{german}{"R}{\textormath{\bbl@disc R{RR}}{R}}
172 \declare@shorthand{german}{"t}{\textormath{\bbl@disc t{tt}}{t}}
173 \declare@shorthand{german}{"T}{\textormath{\bbl@disc T{TT}}{T}}
```

(we need to treat `"f` a bit differently in order to preserve the ff-ligature)

```
174 \declare@shorthand{german}{"f}{\textormath{\bbl@discff}{f}}
175 \def\bbl@discff{\penalty\@M
176   \afterassignment\bbl@insertff \let\bbl@nextff= }
177 \def\bbl@insertff{%
178   \if f\bbl@nextff
179     \expandafter\@firstoftwo\else\expandafter\@secondoftwo\fi
180   {\relax\discretionary{ff-}{f}{ff}\allowhyphens}{f\bbl@nextff}}
181 \let\bbl@nextff=f
```

and some additional commands (hyphenation, line breaking and ligature control):

```
182 \declare@shorthand{german}{"-}{\nobreak\-\bbl@allowhyphens}
183 \declare@shorthand{german}{"|}{%
184   \textormath{\penalty\@M\discretionary{-}{}{\kern.03em}%
185             \allowhyphens}{}}
186 \declare@shorthand{german}{""}{\hskip\z@skip}
187 \declare@shorthand{german}{"~}{\textormath{\leavevmode\hbox{-}}{-}}
188 \declare@shorthand{german}{"=}{\penalty\@M-\hskip\z@skip}
189 \declare@shorthand{german}{"/}{\textormath
190   {\bbl@allowhyphens\discretionary{/}{}{/}\bbl@allowhyphens}{}}
```

`\mdqon`
`\mdqoff`
`\ck`

All that's left to do now is to define a couple of commands for reasons of compatibility with german.sty.

```
191 \def\mdqon{\shorthandon{"}}
192 \def\mdqoff{\shorthandoff{"}}
193 \def\ck{\allowhyphens\discretionary{k-}{k}{ck}\allowhyphens}
```

The macro `\ldf@finish` takes care of looking for a configuration file, setting the main language to be switched on at `\begin{document}` and resetting the category code of `@` to its original value.

```
194 \ldf@finish\CurrentOption
```

4.6 `austrian.ldf, german.ldf` and `swissgerman.ldf`

Babel expects a ⟨*lang*⟩`.ldf` file for each ⟨*lang*⟩. So we create portmanteau ldf files for austrian, german and swissgerman.[3] These files themselves only load germanb.ldf, which does the real work:

```
195 \input germanb.ldf\relax
```

---

[3]For austrian and german, this is not strictly necessary, since babel provides aliases for these languages (pointing to germanb). However, since babel does not officially support these aliases anymore after the language definition files have been separated from the core, we provide the whole range of ldf files for the sake of completeness.

Change History

References

[1] Ammon, Ulrich et al.: *Variantenwörterbuch des Deutschen. Die Standardsprache in Österreich, der Schweiz und Deutschland sowie in Liechtenstein, Luxemburg, Ostbelgien und Südtirol.* Berlin, New York: De Gruyter.

[2] Braams, Johannes and Bezos, Javier: *Babel.* http://www.ctan.org/pkg/babel.

[3] Deutschsprachige Trennmustermannschaft: *dehyph-exptl – Experimental hyphenation patterns for the German language.* https://ctan.org/pkg/dehyph-exptl.

[4] Partl, Hubert: *German TEX, TUGboat* 9/1 (1988), p. 70–72.

[5] Raichle, Bernd: *German.* http://www.ctan.org/pkg/german.

[6] Manuel Pégourié-Gonnard et al.: *hyph-utf8 – Hyphenation patterns expressed in UTF-8.* https://ctan.org/pkg/hyph-utf8.