Typing Linguistics with covington.sty

Michael A. Covington
Artificial Intelligence Center
The University of Georgia
Athens, Georgia 30602 U.S.A.
mcovingt@ai.uga.edu
http://www.ai.uga.edu/~mc

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New in This Version

• It is no longer necessary to type \it to get proper italic type in feature structures.
• Instructions have been rewritten with L\TeX 2\epsilon users in mind.
New in Preceding Versions

- Multiple accents on a single letter (e.g., \( \hat{a} \)) are supported.
- This package is now called covington (with the o) and is compatible with \LaTeX\ 2.09 and NFSS as well as \LaTeX\ 2.09.
- The vertical placement of labeled feature structures has been changed so that the category labels line up regardless of the size of the structures.

Introduction

This file, covington.tex, is the documentation for the March 2001 version of covington.sty, which is a \LaTeX\ style option for typing many of the special notations common in linguistics.

In em\TeX\ under MS-DOS, covington.sty is called covingto.sty. The missing n has no effect.

To use covington.sty, you should have a copy of it in either your current directory or the directory where \LaTeX\ styles are kept on your system.

Then, under \LaTeX\ 2.09, include the command \texttt{\usepackage{covington}} after your \texttt{\documentclass} command.

In \LaTeX\ 2.09, include covington among the optional parameters of \texttt{\documentclass}, like this:
\verbatimverbatim{\documentclass[12pt,covington]{article}}

Note the spelling covington (9 letters).

In what follows I presume that you know how to use \LaTeX\ and have access to the \LaTeX\ manual. Note that covington.sty does not provide any special fonts or character sets. However, it can be used in combination with other style sheets that do.

If you are using covington.sty and uga.sty (UGa thesis style) together, you should mention uga before covington.

1 Accents

\LaTeX\ provides a generous range of accents that can be placed on any letter, such as:
\verbatimverbatim{\hat{x} \check{x} \breve{x} \bar{x} \ddot{x} \tilde{x} \acute{x}}

which are typed, respectively, as:
\verbatimverbatim{\textbackslash{hat}{x} \textbackslash{check}{x} \textbackslash{breve}{x} \textbackslash{bar}{x} \textbackslash{ddot}{x} \textbackslash{tilde}{x} \textbackslash{acute}{x}}

\LaTeX\ also provides the foreign characters
\verbatimverbatim{\& \& \& \& \& \& \& \& \& \&}

which are typed as:

\verbatimverbatim{\E \E \E \E \E \E \E \E \E \E}
But by itself, \LaTeX{} doesn't give you a convenient way to put two accents on the same letter. To fill this gap, \texttt{covington.sty} provides the following macros:
\begin{itemize}
  \item \twoacc{[...|...]} to combine any 2 accents, e.g., \twoacc{[^{1}=\{a\}] = \hat{a}}
  \item \acm{...} for acute over macron, e.g., \acm{a} = a
  \item \grm{...} for grave over macron, e.g., \grm{a} = a
  \item \cim{...} for circumflex over macron, e.g., \cim{a} = \hat{a}
\end{itemize}

The first of these is the general case and the latter three are special cases that occur often in transcribing Greek. Now you can type \textit{Koine} with both accents in place.

Note the peculiar syntax of \texttt{\twoacc} — its arguments are in square brackets, not curly brackets, and are separated by \texttt{|}. The first argument is the upper accent (only) and the second argument is the letter with the lower accent indicated.

Note also that not all accents work in the \texttt{tabbing} environment. Use \texttt{tabular} or see the \LaTeX{} manual for workarounds.

## 2 Example numbers

Linguistics papers often include numbered examples. The macro \texttt{\exampleneno} generates a new example number and can be used anywhere you want the number to appear. For example, to display a sentence with a number at the extreme right, do this:

\begin{verbatim}
\begin{flushleft}
This is a sentence. \hfill (\exampleneno)
\end{flushleft}
\end{verbatim}

Here's what you get:

This is a sentence. (1)

The example counter is actually the same as \LaTeX{}'s equation counter, so that if you use equations and numbered examples in the same paper, you get a single continuous series of numbers. If you want to access the number without changing it, use \texttt{\thethequation}.

Also, you can use \texttt{\label} and \texttt{\ref} with example numbers in exactly the same way as with equation numbers. See the \LaTeX{} manual for details. This applies to the \texttt{example} and \texttt{examples} environments, described next, as well as to \texttt{\exampleneno} itself.

## 3 The example environment

The \texttt{example} environment displays a single example with a generated example number to the left of it. If you type
\begin{example}
This is a sentence.
\end{example}

you get:

(2) This is a sentence.

The \texttt{example} environment is a lot like \texttt{flushleft}. The example can be of any length; it can consist of many lines (separated by \texttt{\}), or even whole paragraphs.

One way to number sub-examples is to use \texttt{itemize} or \texttt{enumerate} within an example, like this:

\begin{example}
\begin{itemize}
\item[(a)] This is the first sentence.
\item[(b)] This is the second sentence.
\end{itemize}
\end{example}

This prints as:

(3) (a) This is the first sentence.
(b) This is the second sentence.

However, the \texttt{examples} environment, described next, is usually more convenient.

4 The \texttt{examples} environment

To display a series of examples together, each with its own example number, use \texttt{examples} instead of \texttt{example}. The only difference is that there can be more than one example, and each of them has to be introduced by \texttt{item}, like this:

\begin{examples}
\item This is the first sentence.
\item This is the second sentence.
\end{examples}

This prints as:

(4) This is the first sentence.
(5) This is the second sentence.
5 Glossing sentences word–by–word

To gloss a sentence is to annotate it word–by–word. Most commonly, a sentence in a foreign language is followed by a word–for–word translation (with the words lined up vertically) and then a smooth translation (not lined up), like this:\footnote{The macros for handling glosses are adapted with permission from \texttt{gloss.tex}, by Marcel R. van der Goot.}

\textit{Dit is een Nederlands voorbeeld.}
This is a Dutch example.
‘This is an example in Dutch.’

That particular example would be typed as:
\begin{verbatim}
gll Dit is een Nederlands voorbeeld. \\ This is a Dutch example. \\ 'This is an example in Dutch.' \\
glt
\end{verbatim}

Notice that the words do not have to be typed lining up; instead, \TeX{} counts them. If the words in the two languages do not correspond one–to–one, you can use curly brackets to show the intended grouping. For example, to print

\textit{Dit is een voorbeeldje in het Nederlands.}
This is a little example in Dutch.
‘This is a little example in Dutch.’

you would type:
\begin{verbatim}
gll Dit is een voorbeeldje \ in \ het \ Nederlands. \\ This is a \{little example\} \ in \{} Dutch. \\ 'This is a little example in Dutch.' \\
glt
\end{verbatim}

All together, \texttt{covington.sty} gives you five macros for dealing with glosses:

\begin{itemize}
  \item \texttt{gll} introduces two lines of words vertically aligned, and activates an environment very similar to \texttt{flushleft}.
  \item \texttt{glll} is like \texttt{gll} except that it introduces three lines of lined–up words (useful for cited forms, morphology, and translation).
  \item \texttt{glt} ends the set of lined–up lines and introduces a line (or more) of translation.
  \item \texttt{glin} is like \texttt{glt} but does not start a new line (useful when no translation follows but you want to put a number on the right).
  \item \texttt{glend} ends the special \texttt{flushleft}–like environment.
\end{itemize}
Here are several examples. First, a sentence with three lines aligned, instead of just two:

\textit{Hoc \textit{est} aliud \textit{exemplum}.}
\begin{itemize}
\item n.sg.nom 3.sg n.sg.nom n.sg.nom
\end{itemize}
This is another example.

This is typed as:
\begin{verbatim}
\glll Hoc est aliud exemplum.
   n.sg.nom 3.sg n.sg.nom n.sg.nom
\glt 'This is another example.'
\glend
\end{verbatim}

Next, an example with a gloss but no translation, with an example number at the right:

\textit{Hoc \textit{habet} numerum.}
\begin{example}
This has number
\end{example}

That one was typed as:
\begin{verbatim}
\gll Hoc habet numerum.
This has number
\gln \hfill (\exampleno)
\glend
\end{verbatim}

Finally we'll put a glossed sentence inside the \texttt{example} environment, which is a very common way of using it:

\begin{example}
(7) \textit{Hoc \textit{habet} numerum praepositum.}
This has number preposed
\glt 'This one has a number in front of it.'
\end{example}

This last example was, of course, typed as:
\begin{verbatim}
\begin{example}
\gll Hoc habet numerum praepositum.
This has number preposed
\glt 'This one has a number in front of it.'
\glend
\end{example}
\end{verbatim}

Notice that every glossed sentence begins with either \texttt{\gll} or \texttt{\glll}, then contains either \texttt{\glt} or \texttt{\gln}, and ends with \texttt{\glend}. Layout is critical in the part preceding \texttt{\glt} or \texttt{\gln}, and fairly free afterward.
6 Phrase structure rules

To print the phrase structure rule $S \rightarrow NP \ VP$ you can type $\text{\textbackslash psr}\{S\}\{NP\}~\text{\textbackslash vp\}$, and likewise for other phrase structure rules.

7 Feature structures

To print a feature structure such as:

\[
\begin{array}{c}
\text{case} : \text{nom} \\
\text{person} : P
\end{array}
\]

you can type:

$\text{\textbackslash fs}\{\text{case:nom} \ \ \text{\textbackslash person:P}\}$

The feature structure can appear anywhere — in continuous text, in a displayed environment such as \texttt{flushleft}, or inside a phrase–structure rule, or even inside another feature structure.

To put a category label at the top of the feature structure, like this,

\[
N \\
\begin{array}{c}
\text{case} : \text{nom} \\
\text{person} : P
\end{array}
\]

here's what you type:

$\text{\textbackslash lfs}\{N\}\{\text{case:nom} \ \ \text{\textbackslash person:P}\}$

And here is an example of a PS–rule made of labeled feature structures:

\[
S \\
\begin{array}{c}
tense : T \\
\text{case} : \text{nom} \\
\text{number} : N
\end{array} \\
\begin{array}{c}
VP \\
tense : T \\
\text{number} : N
\end{array}
\]

which was of course typed as:

$\text{\textbackslash psr}\{\text{\textbackslash lfs}\{S\}\{\text{tense:T}\}\}
\{\text{\textbackslash lfs}\{NP\}\{\text{case:nom} \ \ \text{\textbackslash number:N}\}\}
\text{\textbackslash lfs}\{VP\}\{\text{tense:T} \ \ \text{\textbackslash number:N}\}\}$

8 Discourse representation structures

Several macros in \texttt{covington.sty} facilitate display of discourse repesentation structures (DRSes) in the box notation originally used by Hans Kamp. The simplest is \texttt{\textbackslash drs}, which takes two arguments: a list of discourse variables joined by ~, and a list of DRS conditions separated by \textbackslash. Nesting is permitted. Note that the \texttt{\textbackslash drs} macro itself does not give you a displayed environment; you must use \texttt{flushleft} or the like to display the DRS. Here are some examples:
\drs{X}\{donkey(X)\& green(X)\}

\begin{center}
\begin{tabular}{|c|}
\hline
X \\
\hline
\hline
donkey(X) \\
green(X) \\
\hline
\end{tabular}
\end{center}

\drs{X}
\{named(X, ‘Pedro’) \&
\drs{Y}\{donkey(Y)\& owns(X,Y)\} \\[\large \Rightarrow\]
\drs{~}\{feeds(X,Y)\}

To display a sentence above the DRS, use \sdrs, like this:
\sdrs{A donkey is green.}\{X\}\{donkey(X)\& green(X)\}

\textit{A donkey is green.}

\begin{center}
\begin{tabular}{|c|}
\hline
X \\
\hline
\hline
donkey(X) \\
green(X) \\
\hline
\end{tabular}
\end{center}

Some DRS connectives are also provided (normally for forming DRSes that are to be nested within other DRSes). The macro \negdrs forms a DRS preceded by a negation symbol:
\negdrs{X}\{donkey(X)\& green(X)\}

\begin{center}
\begin{tabular}{|c|}
\hline
X \\
\hline
\hline
\neg \hspace{1cm} donkey(X) \\
green(X) \\
\hline
\end{tabular}
\end{center}
Finally, \ifdrs forms a pair of DRSes joined by a big arrow, like this:

\ifdrs{X}{\{donkey(X)\\hangry(X)\}}
   {\sim}{\{feeds(Pedro,X)\}}

<table>
<thead>
<tr>
<th>X</th>
<th>donkey(X)</th>
<th>hangry(X)</th>
</tr>
</thead>
<tbody>
<tr>
<td>feeds(Pedro,X)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If you have an “if”–structure appearing among ordinary predicates inside a DRS, you may prefer to use \alifdrs, which is just like \ifdrs but shifted slightly to the left for better alignment.

9 Exercises

The exercise environment generates an exercise numbered according to chapter, section, and subsection (suitable for use in a large book; in this example, the subsection number is going to come out as 0).

Exercise 9.0.1 (Project) Prove that the above assertion is true.

This was typed as

\begin{exercise}[Project]
Prove that the above assertion is true.
\end{exercise}

and the argument [Project] is optional (actually, any word could go there).

10 Reference Lists

To type an LSA–style hanging–indented reference list, use the reflist environment. (Note: reflist is not presently integrated with BibTeX in any way.) For example,

\begin{reflist}


\end{reflist}
prints as:

Barton, G. Edward; Berwick, Robert C.; and Ristad, Eric Sven. 1987. Com-

Chomsky, Noam. 1965. Aspects of the theory of syntax. Cambridge, Mass-
sachusetts: MIT Press.

Covington, Michael A. 1993. Natural-language processing for Prolog program-

Notice that within the reference list, “French spacing” is in eect — that is, spaces after periods are no wider than normal spaces. Thus you do not have to do anything special to avoid excessive space after people’s initials.

11 Displayed sentences

The macro \sentence displays an italicized sentence (it is a combination of flushleft and \em). If you type

\sentence{This is a sentence.}

you get:

This is a sentence.

12 Big curly brackets (disjunctions)

Last of all, the 2-argument macro \either expresses alternatives within a sen-
tence or PS-rule:

the \either{big}{large} dog = the \big\{ big \large \} dog

\psr{A}\{B\either{C}{D}\} \rightarrow E = A \rightarrow \big\{ C D \} E

That’s all there is. Suggestions for improving covington.sty are welcome, and bug reports are actively solicited. Please note, however, that this is free software, and the author makes no commitment to do any further work on it.