Chapter 1

langsci-gb4e

Sebastian Nordhoff

1 Introduction

This document describes the `langsci-gb4e` package for typesetting linguistic examples. It builds upon the popular `gb4e` and `cgloss` (by Hans-Peter Kolb, Craig Thiersch, improved by Alexis Dimitriadis) packages. It also includes the package `jambox` by Alexis Dimitriadis.

2 Standard usage

This manual starts with the most common cases and describes the foundations and the more complicated cases later.

To produce a standard example, use `\ea` before and `\z` after

```
\ea
The cat is on the mat.
\z
```

(1) The cat is on the mat.

3 Judgments

To add judgments, there is a quick and dirty way and a proper way.

3.1 Quick and dirty way

Simply add a * in front of the sentence (or any other judgment). In groups of examples, this will look bad because vertical alignment is off (2–3).

Change with \papernote

```
\ea
The cat is on the mat.
\z
\ea
* The cat are on the mat.
\z
```

(2) The cat is on the mat.

(3) * The cat are on the mat.

3.2 Proper way

The proper way puts the judgment between `[]` and does the same for empty judgments in a group. The sentence itself is put in `{}`. In this way, the examples align nicely (4–5).

```
\ea[]{
The cat is on the mat.
}
\z
\ea[*]{
The cat are on the mat.
}
\z
```

(4) The cat is on the mat.

(5) * The cat are on the mat.

4 Lists of examples

If there are several examples in a row, you can use only one `\z` at the very end and use `\ex` instead of `\ea` for examples after the first one (7–9).

```
\ea I like the flowers
\ex I like the daffodils
\ex I like the mountains
\ex I like the rolling hills
\z
```

(6) I like the flowers

(7) I like the daffodils

(8) I like the mountains

(9) I like the rolling hills

5 Subexamples

There are three predefined level of examples. `\ea` opens a new level and prints the first identifier; `\z` closes the last level. `\ex` adds a further example but does not change levels.

```
\ea one
    \ea eins
    \ex una
    \z
\ex two
    \ea zwei
    \ex dos
    \z
\ex three
    \ea drei
        \ea who needs all these
        \ex levels of
           subexamples
        \z
    \z
\z
```

(10) one
   a. eins
   b. una

(11) two
   a. zwei
   b. dos

(12) three
   a. drei
      i. who needs all these
      ii. levels of subexamples

6 The environments `exe` and `xlist`

The commands `\ea` and `\z` are shorthands for the environments `exe` (highest level) and `xlist` (subexamples and below). `\ea` works like `\begin{exe}\ex` or `\begin{xlist}\ex`, as the case may be. `\z` works like `\end{exe}` or `\end{xlist}`. In some cases, it can be necessary to resort to the environments instead of the shorthands, but this is rare.

```
\begin{exe}
    \ex one
    \begin{xlist}
        \ex eins
        \ex una
    \end{xlist}
    \ex two
    \begin{xlist}
        \ex zwei
        \ex dos
    \end{xlist}
    \ex three
    \begin{xlist}
        \ex drei
        \begin{xlist}
            \ex who needs all
               these
            \ex levels of
               subexamples
        \end{xlist}
    \end{xlist}
\end{exe}
```

(13) one
   a. eins
   b. una

(14) two
   a. zwei
   b. dos

(15) three
   a. drei
      i. who needs all these
      ii. levels of subexamples

7 Advanced examples

7.1 Custom identifiers

Sometimes, you want to have a particular identifier for a particular example. This can be achieved with `\exi`.

```
\begin{exe}
    \ex Normal example
    \exi{(0)} Particular example
    \ex Normal example
\end{exe}
```

(16) Normal example
(0) Particular example
(17) Normal example

7.2 Primes

To repeat an example with a prime, give the original example a `\label` and use that label in conjuction with the command `\exp`.

```
\begin{exe}
    \ex\label{ex:original} A cat is on the
        mat.
    \exp{ex:original} On the mat is a cat.
\end{exe}
```

(18) A cat is on the mat.

(18′) On the mat is a cat.

7.3 Repeated examples for convenience

Sometimes, examples are repeated in papers further down, but they should retain the same number as the original example. This can be achieved with `\exr`.

```
\begin{exe}
    \ex\label{ex:firstmat} A cat is
        on the mat.
    \ex A dog is on the mat.
    \ex A mouse is on the mat.
    \exr{ex:firstmat} A cat is on
        the mat.
\end{exe}
```

(19) A cat is on the mat.

(20) A dog is on the mat.

(21) A mouse is on the mat.

(19) A cat is on the mat.

7.4 Cross-references

You can refer to examples with `\xref{ex:original}`, which will give you the example number in parentheses as in (18), and with `\xxref{ex:original}{ex:firstmat}`, which will give you (18–19).

7.5 Examples without identifiers

Use `\sn` for examples without identifiers.

```
\begin{exe}
    \ex A cat is on the mat.
    \sn ← This sentence no
        identifier
    \ex A dog is on the mat.
\end{exe}
```

(22) A cat is on the mat.

← This sentence no identifier

(23) A dog is on the mat.

7.6 Tweaks

Use `\exewidth{(222)}` to set the width reserved for identifiers to three-digits.

Use `\judgewidth{??}` to reserve space of the width of ?? for judgements.

Example sentences with `\ex` or `\ea` normally do not use hyphenation. If you would like hyphenation, use `\eanoraggedright`.

When you have an example which happens to be the last item in a footnote, there can be excess vertical space. In these cases, use `\zlast` instead of `\z`. This will drop the extra vertical space.

8 Glossing

8.1 Common glossing

Interlinear examples are a main feature of linguistic texts. They are built as follows:

```
\ea
\gll carte de crédit\\
     card  of credit\\
\glt ‘credit card’
\z
```

(24) carte de crédit
card of credit
‘credit card’

The important elements are `\ea` and `\z` to produce the example environment; `\gll` to introduce the glossing environment; the `\\` to close the first line and the second line; and `\glt` for the translation.

The command automatically wraps the line as required.

```
\ea
\gll la carte de crédit que tu as trouvée sur la place devant la
    gare\\
     the card  of credit \textsc{rel} you have found on the place
          in.front.of the station\\
\glt ‘The credit card which you found on the square in front of
    the station.’
\z
```

(25) la carte de crédit que tu as trouvée sur la place devant la
the card of credit REL you have found on the place in.front.of the
gare
station
‘The credit card which you found on the square in front of the station.’

8.2 More than two aligned lines

`\gll` aligns the items of the first and the second line. If you want to align more lines, simply adjust the number of l's (up to 8).

```
\ea
\glllll carte de crédit\\
        carta  di credito\\
        tarjeta  de crédito\\
        card  of credit\\
\glt ‘credit card’
\z
```

(26) carte de crédit
carta di credito
tarjeta de crédito
card of credit
‘credit card’

8.3 Empty glosses

To skip words when aliging, you can use ~ or `{}`

```
\ea
\glll carte de crédit\\
      card  of credit\\
      N     ~  N\\
\glt ‘credit card’
\z
\ea
\glll carte de crédit\\
      card  of credit\\
      N    {}  N\\
\glt ‘credit card’
\z
```

(27) carte de crédit
card of credit
N N
‘credit card’

(28) carte de crédit
card of credit
N N
‘credit card’

8.4 n:1 glosses

Sometimes there are expressions consisting of more than one word which should nevertheless be glossed by only one word. In those cases, use `{}` to enclose the multi-word expression.

```
\ea
\gll Juan murió {de repente}\\
     Juan died suddenly\\
\glt ‘Juan died suddenly.’
\z
```

(29) Juan murió de repente
Juan died suddenly
‘Juan died suddenly.’

9 Leipzig Glossing Rules

The Leipzig Glossing Rules provide an inventory of agreed abbreviations for linguistic categories. They can be accessed via commands in ALLCAPS, e.g. `\QUOT` for QUOT (quotative).

```
\ea
\gll Je suis ven–u–e hier\\
     1\SG{} \COP.1\SG.\PRS.\IND{} come–\PTCP–\F{} yesterday\\
\glt ‘I came yesterday’
\z
```

(30) Je suis ven-u-e hier
1SG COP.1SG.PRS.IND come-PTCP-F yesterday
‘I came yesterday’

The extra `{}` are necessary to prevent LaTeX from eating the white space after the command, which is necessary to get the alignment right. Compare (31) without `{}` to (30).

```
\ea
\gll Je suis ven–u–e hier\\
     1\SG \COP.1\SG.\PRS.\IND come–\PTCP–\F yesterday\\
\glt ‘I came yesterday’
\z
```

(31) Je suis ven-u-e hier
1SG COP.1SG.PRS.IND come-PTCP-F yesterday
‘I came yesterday’

If you need glosses which are not in the Leipzig Glossing Rules, you can add them with `\newcommand{\MYCATEGORY}{\textsc{mycategory}}`.

10 Judgments and interlinear examples

In order to use judgments in brackets `[]`, you have to enclose the interlinear lines in braces `{}` as follows:

```
\begin{exe}
\ex[]{
\gll carte de crédit\\
     card  of credit\\
\glt ‘credit card’
}
\ex[*]{
\gll carte à crédit\\
     card  on credit\\
}
\end{exe}
```

(32) carte de crédit
card of credit
‘credit card’

(33) * carte à crédit
card on credit

11 Customization

You can adjust the appearance of the different elements and lines in Interlinear examples with the following commands:

- `\exfont{\itshape}` for the first line
- `\glossfont{...}` for the interlinear glosses
- `\transfont{...}` for the translation
- `\exnrfont{...}` for the numbered identifier
- `\fnexfont{...}` for the first line of an example in a foonote
- `\fnglossfont{...}` for the interlinear glosses of an example in a foonote
- `\fntransfont{...}` for the translation of an example in a foonote
- `\fnexnrfont{...}` for the numbered identifier of an example in a foonote

If you publish with Language Science Press, the right configuration for your series will automatically be loaded.

You can toggle the extra vertical space between the interlinear text and the translation with `\noglt0ffset` and `\resetglt0ffset`.

```
\ea
\gll Dit is een zin.\\
     this is a sentence\\
\glt ‘This translation has standard vertical space.’
\z
```

```
\nogltOffset

\ea
\gll Dit is een zin.\\
     this is a sentence\\
\glt ‘This translation has less vertical space.’
\z

\resetgltOffset

\ea
\gll Dit is een zin.\\
     this is a sentence\\
\glt ‘This translation has standard vertical space again.’
\z
```

(34) Dit is een zin.
this is a sentence
‘This translation has standard vertical space.’

(35) Dit is een zin.
this is a sentence
‘This translation has less vertical space.’

(36) Dit is een zin.
this is a sentence
‘This translation has standard vertical space again.’

12 Jambox

12.1 Simple cases

To add annotations to examples, use `\jambox`.

```
\begin{exe}
\ex John loves dogs.\jambox{(mammals)}
\ex John loves eagles.\jambox{(birds)}
\ex John loves turtles.\jambox{(amphibians)}
\end{exe}
```

(37) John loves dogs. (mammals)

(38) John loves eagles. (birds)

(39) John loves turtles. (amphibians)

To maximize horizontal distance, use `\jambox*`, but then you lose left-alignment.

```
\begin{exe}
\ex John loves dogs.\jambox*{(mammals)}
\ex John loves eagles.\jambox*{(birds)}
\ex John loves turtles.\jambox*{(amphibians)}
\end{exe}
```

(40) John loves dogs (mammals)

(41) John loves eagles (birds)

(42) John loves turtles (amphibians)

You can control the distance from the right margins via `\jamwidth`

```
\settowidth\jamwidth{(amphibians)}
\begin{exe}
\ex John loves dogs.\jambox{(mammals)}
\ex John loves eagles.\jambox{(birds)}
\ex John loves turtles.\jambox{(amphibians)}
\end{exe}
```

(43) John loves dogs. (mammals)

(44) John loves eagles. (birds)

(45) John loves turtles. (amphibians)

12.2 Jambox and interlinear examples

Jambox only works with interlinear examples if the aligned lines are enclosed in `{}`.

```
\begin{exe}
\ex{
\gll carte de crédit\\
     card of credit \\}\jambox{(French)}
\glt ‘credit card’

\ex{
\gll Kredit-karte\\
     credit-card \\}\jambox{(German)}
\glt ‘credit card’
\end{exe}
```

(46) carte de crédit (French)
card of credit
‘credit card’

(47) Kredit-karte (German)
credit-card
‘credit card’

13 What’s removed

The original `gb4e` files had additional macros for adding bars on letters for early generative grammar, for arrows, and for greek letters. These solutions have become obsolete with the advent of Unicode and TikZ. These legacy commands are therefore removed from `langsci-gb4e`.

14 Gotchas

1. Make sure to never end an item to be glossed with a command like `\textschwa` or `\PASS`. This will eat up the space separating this word from the next one and will glue them together (cf. (31)).

2. When highlighting aligned words with `\textit` or `\textbf`, do so individually (`My words \textit{are} \textit{highlighted}`). Do not use `My words \textit{are highlighted}` as this will lead to *are highlighted* being treated as a mulitword expression for purposes of alignment (see §8.4).