A LaTeX Tutorial for Linguists

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Abstract

This is a LaTeX template for linguists who are new to LaTeX and who would like to learn how it can be used to create professional documents. This tutorial goes over the basics of LaTeX document formatting and shows you some basic tools that are extremely important for linguistics scholarship, including automatically aligned interlinear glossing and fancy shmancy trees. Since this tutorial is always a work in progress, please feel free to send e-mails to any of the authors listed above. Compliments should be reserved for Jackson, who authored the original version; criticisms should go to Adam, Daniel, and Christian.

1 Introduction

Welcome to the world of LaTeX! The learning curve is fairly steep, but your efforts will pay off as you gradually get the hang of this amazing tool. As you move along, there may be moments when things don't quite work as intended and you get frustrated. Google usually has answers to the questions you have (search by "latex xxx").[1]

[1] Also: `http://en.wikibooks.org/wiki/LaTeX`. By the way, this is a footnote. To introduce it, just use `\footnote{}`, with whatever text your note is to contain in between the curly brackets.

2 The Five Commandments of LaTeX

1. Start with a template and adapt
2. Compile often (every other sentence, or more often for equations, tables, etc.)
3. Ask someone if you get stuck. Google, Stack Exchange, and Detexify are your friends!
4. If you have an error, check for balanced { }, [ ], $ $
5. If you have an error, comment out what you just wrote and see if it fixes itself; then you know where the problem is

3 Packages

3.1 What are packages?

Packages add new capabilities to your LaTeX system, so to speak. They define new commands that do something you need. Quite often, different packages can do the same thing.

3.2 How do we tell LaTeXwhich packages we are using?

In the .tex file, the code preceding `\begin{document}` is called the preamble. You call the packages using the `\usepackage` command in the preamble. Side track: By now, probably you've noticed that all commands begin with the backslash symbol \. (Then how do we actually type and show a backslash? See the LaTeX code for the answer. This will happen a lot during this tutorial.)

3.3 Where do packages come from?

There are packages that are useful for LaTeX users in general, as well as those more specific for linguists. Most of them are available on one of the repositories readily accessible by your LaTeX distribution. So if you are trying to use a new package that your computer hasn't downloaded yet, it should be downloaded automatically when you hit "Typeset" (assuming correct configurations).

3.4 How do we learn to use particular packages?

Packages come with their documentation. If you want to try out or learn how to use a package X, google "latex X documentation" and a .pdf file is usually located – it should be the documentation, or manual, of that package.

4 Formatting

4.1 Comments

One of the wonderful things about LaTeX is that you can include content in the .tex file that doesn't show up in the output .pdf. We call these COMMENTS. In your .tex file, anything that comes on a line of text after the `%` symbol is ignored in compiling the .pdf file. This is useful for making notes as well as making your .tex much more readable. For several examples, just take a look at the code of this file. You'll notice, for example, that each of the packages called up in the preamble has a helpful summary following the `%`. These summaries have absolutely zero impact on the .pdf that gets produced.

4.2 Indentation and spacing

This is a paragraph. Take note of its indentation.

This is another paragraph. Also take note of its indentation here. In the .tex document, you separate two paragraphs by a blank line.

This is a third paragraph. Here we used the `\noindent` command to get rid of the usual indentation!

This is a fourth paragraph. We added some vertical space before this one with `\vspace{}`. You can also use `\hspace{}` to add horizontal space like so.

4.3 Another subsection!

Basic stuff: **bold**, *italic*, SMALL CAPS, underlined

4.3.1 WOW – a subsubsection

Quotation marks. Compare the LaTeX code and the quotation marks displayed here very carefully: "hello", 'hello', 'hello', "hello".

5 Symbols

Accents. Vous êtes... Très bien !

IPA symbols? Package: `tipa` Examples: əabcdeɑβɕðɛɨʌɜɥɐ

6 Tables

Bare minimum to create tables:

Table 1:

1	2	3
4	5	6
7	8	9

Table 2:

1	2	3
4	5	6
7	8	9

Check out the package `booktabs` for more professional tables.

7 Morpheme glossing and in-text referencing

We will use the `Linguex` package for several important tasks, such as inserting examples, and doing glosses. Look a how we can easily make multiply embedded examples below!

(1) This is the first level of embedding
   a. This is the second level
   b. This is still the second level, but:
      (i) This is the third level
      (ii) This is not the end.
      (iii) This is the end of the innermost embedding
   c. and this is the next item in the second level

(2) This is the next example/table/figure

We can also use the `Linguex` package to do easily do glosses, and we can use the regular label and refer to examples and glosses in the following manner. Check out the text in the .tex file here and in (3), (4), and (5), as well as in (6) and (7).

(3) Dies ist eine Glosse
   This is a gloss

(4) Dies ist nicht eine Glosse
   This is not a gloss

(5) %*This English not is.

(6) vajaʃav josef mit͡sɐajima
   return.PERF.3.PL.MASC Joseph Egypt.ward
   'Joseph returned to Egypt' (Genesis 50:14)

(7) vajɛmahɛʁ aveʁaham haʔohela
   hurry.PERF.3.SG.MASC Abraham DEF.tent.ward
   'Abraham hurried (in)to the tent' (Genesis 18:6)

As with regular labeling and referring, you can even drag labeled things around, and LaTeX will automatically renumber the examples appropriately and keep the reference numbers connected to the same example as before. More on this below in Section 9.

8 Making glossing even easier

(8) The students all adore me.
The student-s all adore-∅ me.
ART student-PL all adore-PL 1SG.ACC
The students all adore me.

It is a major waste of time to have to rewrite 1SG.ACC every time you need to gloss the pronoun 'me.' So we can just write a command that stores this gloss for us:

- `\newcommand{\megl}[0]{\textsc{1sg.acc}}`

This tells LaTeX to make a new command with the name `\megl` (for 'me-gloss', though you could call it anything you want). This command will take zero arguments. It will automatically produce the text 1SG.ACC, formatted in the small caps traditionally used for glossing.

You can make new commands to automate all kinds of glosses:

- plural: `\newcommand{\pl}[0]{\textsc{pl}}`
- singular: `\newcommand{\sg}[0]{\textsc{sg}}`
- dative: `\newcommand{\dat}[0]{\textsc{dat}}`
- nominalizer: `\newcommand{\nmlz}[0]{\textsc{nmlz}}`
- and so on and so forth.

Check the LaTeX code here for one more super-useful custom command!

With LaTeX, it becomes easy to implement industry standards like the Leipzig Glossing Rules (`http://www.eva.mpg.de/lingua/resources/glossing-rules.php`).

9 Labeling and referencing

One of the best things about LaTeX is the ability to label and then refer back to examples, sections, subsections, and so on. The trick to making this happen are the following commands:

- `\label{}`
- `\ref{}`

- `\eqref{}`

Here's how it works. When you write an example, you can add in a `\label{}` command, with the label of your choosing inside the brackets. Take a look at the code for the following examples (which also introduce the useful `\hfill` command):

(9) Names of birds in Hungarian:

a.	madár	'bird'
b.	papagáj	'parrot'
c.	sólyom	'hawk'
d.	varjú	'crow'
e.	fácán	'pheasant'

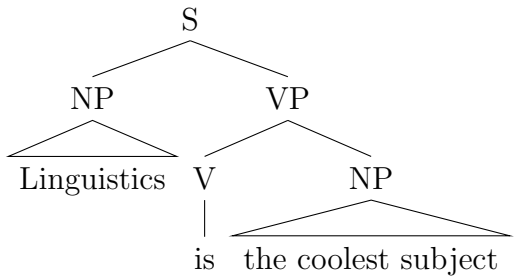
If you take a look at the code, you'll notice that I have placed a `\label{}` command for each example. I can use `\eqref{}` or `\ref{}` to refer back to these labels.[2] LaTeX takes care of the numbering automatically. These labels can nest, as in (9) versus (9-a), (9-b), (9-c), (9-d), and (9-e).

I can also label and refer to sections of the document. Take another look at the code: there's a `\label{labeling}` command right at the beginning of this section. I can refer back to the number of this section painlessly with `\eqref{}` or `\ref{}`: (9). Ta-da!

10 Syntax trees

The best and easiest package for making beautiful and (hopefully) convincing syntax trees is with the packages `tikz-qtree` and `tikz`. (You will need *both* packages for tree-drawing!)

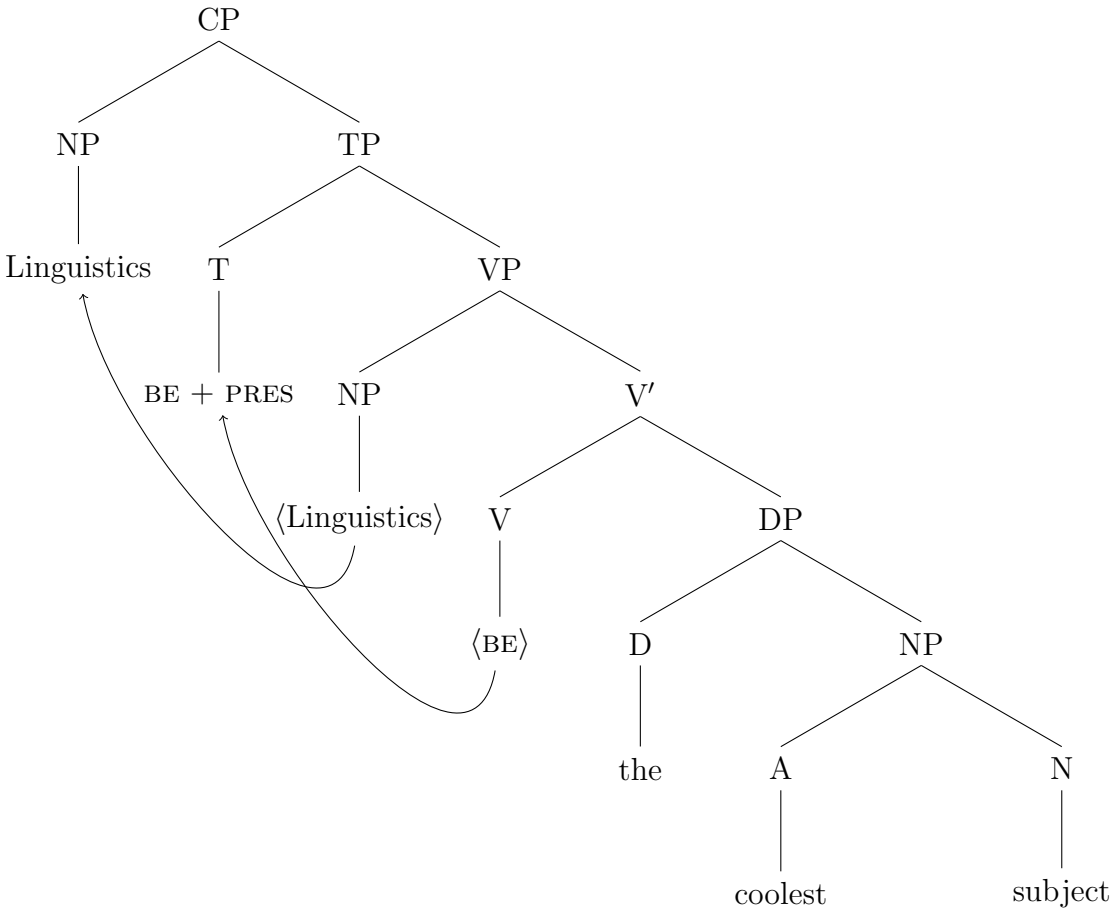
If you're going to draw a tree that doesn't have any movement arrows, the easiest means is to use the `\Tree` command within the `tikzpicture` environment. Here's an example:



Make sure you put a space before every closing square bracket in your code when you're working with the `\Tree` command. If you don't do so, the tree won't work!

Slightly more complicated (but considerably more powerful) is the `\node` command. Take a look at the following code to see how the magic happens.

[2]The difference is that `\eqref{}` adds a parentheses around the example number. However, `linguex` example numbers seem to already have parentheses by default, so `\ref{}` works fine for them.



With the `\node` command, you can draw trees by specifying their nodes and the children of those nodes and so on and so forth.

11 Logic Trees

A common and straightforward way to make logical proof trees is with the package `bussproofs`.

$$\dfrac{\dfrac{\Gamma \vdash A \qquad A \to B \vdash A \to B}{\Gamma, A \to B \vdash B}\,{\to}\mathrm{E}}{\Gamma \vdash (A \to B) \to B}\,{\to}\mathrm{I}$$

12 The End!

We hope that you've found this document helpful and easily understandable. Feel free to use it as a template for your own documents. An easy way to get started is to copy over the .tex file to a new location and rename it. Then open it as usual, and comment out the actual content (and delete the stuff you absolutely don't need). Use the old parts as patterns and examples to build your own fancy shmancy papers, homework assignments, squibs, QPs, and maybe even theses/dissertations! We sincerely wish you the best of luck and happy TEXing!