\LaTeX{} and Linguistics
How to make your research pretty

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Introduction

What is \LaTeX\?

- A document preparation system built on top of the \TeX\ formatting system
- Allows you to focus on content, not formatting
  Also allows for fine-grained control over formatting
- Used to typeset equations, trees, diagrams, etc.
- Fully customizable, free, standardized, and infinitely more powerful than MSWord, OpenOffice.org, etc.
Examples

Some things that \LaTeX makes beautifully & easily:

\[
[\text{Every}]^{\mathcal{M},g} ( [\text{deputy}]^{\mathcal{M},g} ) ( [\text{likes}]^{\mathcal{M},g} ( [\text{Lucy}]^{\mathcal{M},g} ) )
\]

(1) I saw Jane.

(2) *I Jane saw.
Examples

Some things that \LaTeX makes beautifully & easily:

\[
\begin{bmatrix}
donna & \rightarrow & 0 \\
\downarrow & & \\
james & \rightarrow & 0
\end{bmatrix}
\quad
\begin{bmatrix}
donna & \rightarrow & 1 \\
\downarrow & & \\
james & \rightarrow & 1
\end{bmatrix}
\]

(3) \text{vaj\textit{a}jàv josef mitse\textit{b}ajima return.PERF.3.PL.MASC Joseph Egypt.ward}

‘Joseph returned to Egypt’ (Genesis 50:14)

(4) \text{vaj\textit{e}mah\textit{ë}v ave\textit{b}aham ha\textit{?}ohela hurry.PERF.3.SG.MASC Abraham DEF.tent.ward}

‘Abraham hurried (in)to the tent’ (Genesis 18:6)
The Benefits of \LaTeX

Why \LaTeX\ over Word or OpenOffice.org?

- Print-ready .pdf output looking exactly the way you want
- No compatibility issues .doc, .docx, .rtf, etc.
- Quick and efficient formatting
  No dragging those little margin nubs to set indentation!
- Looks 1,000,000 times more professional
- Make equations, trees, glosses without 3rd party programs
- Automated numbering, references, bibliographies, TOCs
- Small document size, quick access
- 100% free, massive support community worldwide
- Zero bloatware, zero editing restrictions
- \TeX templates provided by publishers, conferences

 Seriously, it’s great.
\LaTeX{} is free and available for every operating system.

- PC: MiKTeX (miktex.org)
- Mac: MacTeX (tug.org/mactex)
- Linux: \TeX{} Live (tug.org/texlive) (often pre-installed)
- Online: ShareLaTeX.com, writeLaTeX.com

On any of these platforms, you have your choice of \TeX{} editor.

- What an IDE is to programming languages, \TeX{} editors (IWEs) are to \LaTeX{}.
Writing in LaTeX involves a pseudo-programming language

- Special commands and symbols introduced by a backslash
  \"u \ddot{u} \ac{c} \c{c} \ç \v{z} \ddot{z}

- Some commands only work in “math” environment
  $\lambda x$ $\pi \neq \frac{42}{7}$

- Parameters and options use curly, square brackets
  \begin{tabular}{ccc}
  begins 3-column table with center-aligned cells

- Manual spacing with \hfill, \hskip[ ], \vspace[ ], etc.
  No more playing around with TAB indentation!

You can also define your own symbols with \newcommand
Several built-in structures called by \begin{\texttt{\{environment\}}

\begin{tabular}{|r|c|} \hline
Subfield & Coolness \\ \hline
Phonology & 4/10 \\ \hline
Semantics & 6/10 \\ \hline
Syntax & 10/10 \\ \hline
\end{tabular}

\begin{enumerate}
\item A is for Anaphora
\item B is for $\beta$
\end{enumerate}

\begin{itemize}
\item A is for Awesome
\item B is for Bulleted List
\end{itemize}
\LaTeX{} offers a variety of pre-configured and customizable document classes called by \texttt{\documentclass{}}

- \texttt{article} for papers
- \texttt{beamer} for presentations
- \texttt{report} for chaptered books, theses, etc.
- several more

These may be modified with packages, themes, custom parameters, etc.
Packages

Additional structures and symbols are available with *packages*. If it has been thought of, it has an associated package.

Common packages used in linguistics:

- `<stmaryrd, amssymb, bbding>` for symbols
- `<tipa>` for IPA symbols
- `<covington, gb4e>` for glosses, numbered examples
- `<natbib>` for reference management
- `<qtree, tikz-qtree, xy-ling>` for syntax trees
- `<tikz>` for diagrams/drawings
- `<ot-tableau>` for OT tableau
LaTeX discussion dominates StackOverflow, has its own WikiBook, and is the subject of innumerable blogs

- en.wikibooks.org/wiki/LaTeX - Full documentation
- detexify.kirelabs.org - Draw a symbol, get a LaTeX code
- madebyevan.com/fsm - Generate a Finite State Machine
- tex.stackexchange.com/ - Q&A
- Google.com - Answers almost every question ever
\LaTeX{} is also used by the majority of the department. Some will be more open to helping you than others.

- Sarah Murray - \LaTeX{} champion, gives out .tex copies of homework, developed several useful custom document classes and templates

- Feel free to pester Anca, Dave, Mia, Robin, Todd, Zac, many others
Things You’ll Never Have to Worry About Again

- Kerning
- Ligatures
- Did I remember to re-number those example references when I added a new example?
- How do I format article citations again?
- Will this look different when I print it?
- Will they be able to open it? (Will they have the right fonts?)
- Does this look professional enough?
That’s it!

Thanks!

Any questions?