

L^AT_EX and Linguistics

How to make your research pretty

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Outline

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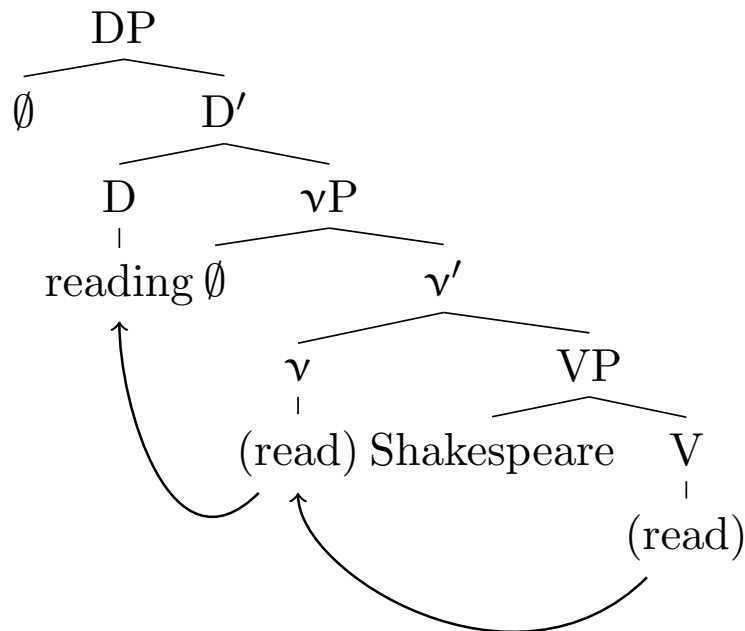
Introduction

What is L^AT_EX ?

- ▶ A document preparation system built on top of T_EX
- ▶ Focus on content, not formatting
 - And then focus on fine-grained control of formatting
- ▶ Typeset equations, trees, diagrams, etc.
- ▶ Auto-generate bibliographies, numbered examples, and more
- ▶ Free, customizable, standardized, and infinitely more powerful than MSWord, Google Docs, etc.

Examples

Some things that L^AT_EX makes beautifully & easily:

$$\llbracket \mathbf{Every} \rrbracket^{\mathcal{M},g} \left(\llbracket \mathbf{deputy} \rrbracket^{\mathcal{M},g} \right) \left(\llbracket \mathbf{likes} \rrbracket^{\mathcal{M},g} \left(\llbracket \mathbf{Lucy} \rrbracket^{\mathcal{M},g} \right) \right)$$


(1) I saw Jane.

(2) * I Jane saw.

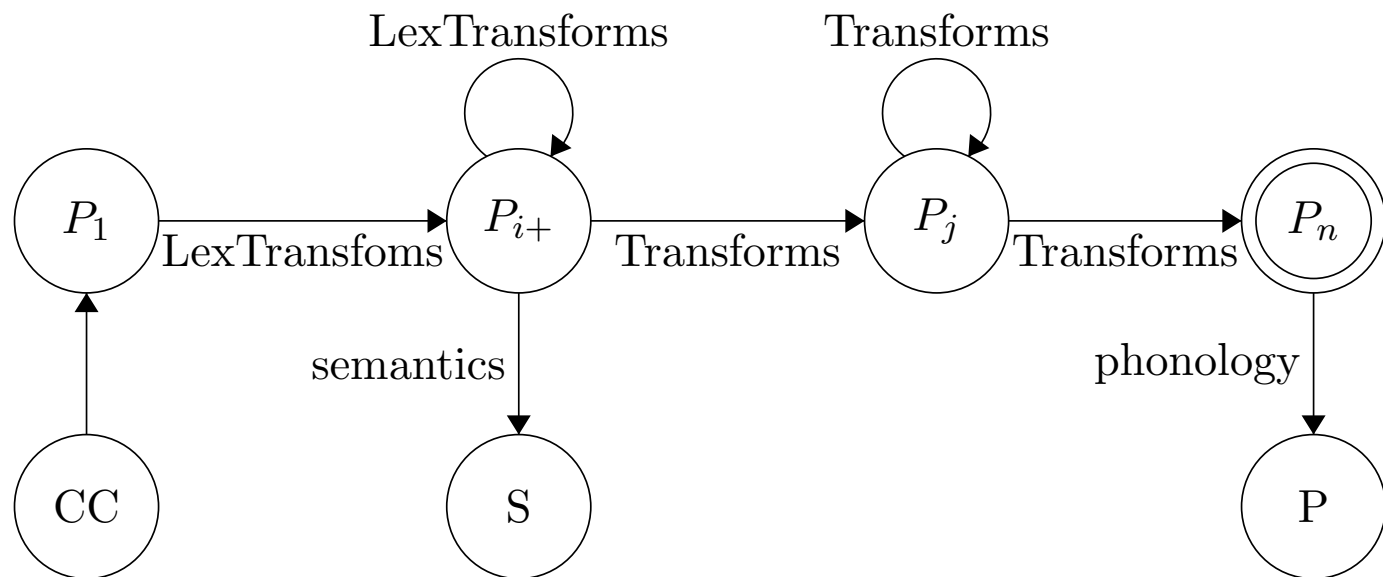
Examples

Some things that L^AT_EX makes beautifully & easily:

- (3) vajafav josef mitseʁajima
return.PERF.3.PL.MASC Joseph Egypt.ward
‘Joseph returned to Egypt’ (Genesis 50:14)
- (4) vajemahεʁ aveʁaham haʔohela
hurry.PERF.3.SG.MASC Abraham DEF.tent.ward
‘Abraham hurried (in)to the tent’ (Genesis 18:6)

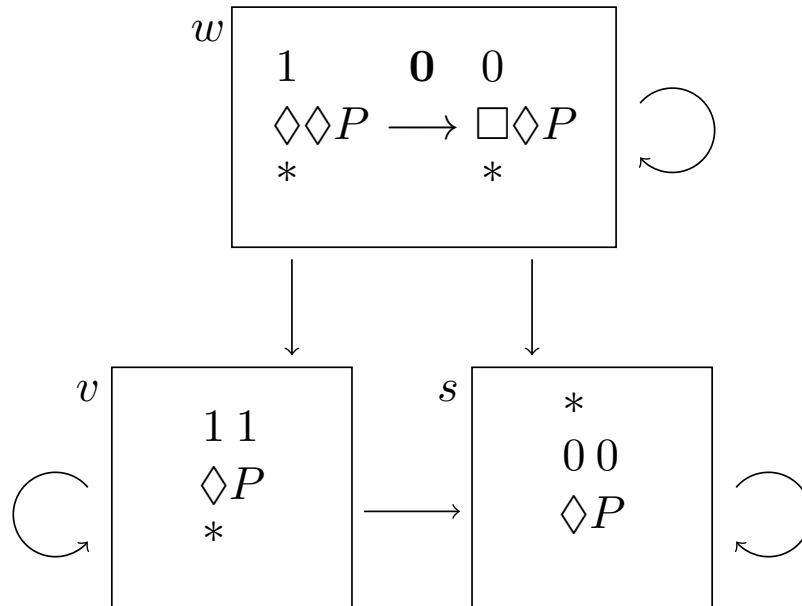
Examples

Some things that L^AT_EX makes beautifully & easily:



Examples

Some things that L^AT_EX makes beautifully & easily:



The Benefits of L^AT_EX

Why L^AT_EX over Word or Google Docs?

- ▶ Print-ready .pdf output looking exactly how it should
- ▶ No compatibility issues with .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, 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
- ▶ T_EX templates provided by publishers, conferences

Seriously, it's great.

The Benefits of L^AT_EX

Your text is *Typeset*, not just printed

- ▶ Automatic text justification, pagebreaks, hyphenation
- ▶ Automatic ligatures:

L ^A T _E X	MSWord
— —	— — — —
“ . . . ”	" . . . "
stuff	stuff
stuffing	stuffing
fly	fly
first	first

Your text is professional, stylized, ready-to-read

The Benefits of L^AT_EX

It's what the cool kids do!



Jason Baldridge

@jasonbaldridge



Following

OH: "This resume is written in that LaTeX font. It means you're smart."

RETWEETS

3

LIKES

4



4:00 PM - 4 Apr 2014



Installation

\LaTeX is **free** and available for **every** operating system.

- ▶ PC: MiK \TeX (miktex.org)
- ▶ Mac: Mac \TeX (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.

- ▶ Like IDEs for programming, \TeX editors (IWEs) are for \LaTeX .
- ▶ https://en.wikipedia.org/wiki/Comparison_of_TeX_editors
- ▶ Learn the pseudo-code and write it anywhere!

How to Use It

Writing in L^AT_EX involves a pseudo-programming language

- ▶ Commands and symbols introduced by a backslash

`\u` ü `\c{c}` ç `\v{z}` ž

- ▶ Commands are often intuitive

`\sigma` σ `\Sigma` Σ

`\textipa{S}` ʃ `\textipa{R}` r

- ▶ Do math in the “math” environment

`\lambda x` λx `\pi \neq \frac{42}{7}` π ≠ $\frac{42}{7}$

- ▶ Text formatting done easy

`\textit{italics}` *italics*

`\textbf{bold}` **bold**

`\underline{so cool}` so cool

`\sout{way cool}` ~~way cool~~

How to Use It

Does this sound familiar to you?

1. “I want this word to be in italics”
2. *Highlights word, presses ctrl+i*
3. [5 minutes later] “Oh I should use a different word”
4. *Highlights word, retypes, loses formatting*
5. *Presses ctrl+i again, presses space bar*
6. *Starts typing next word, it’s in italics*
7. *Highlights second word, presses ctrl+i*
8. [5 minutes later] “Oh I should use a different word...”
9. GOTO 2

NEVER AGAIN!

How to Use It

The L^AT_EX way:

1. “I want this word to be in italics”
2. *Types* `\textit{word}`
3. [5 minutes later] “Oh I should use a different word”
4. *Highlights word, retypes, that’s it*
5. *Goes on to write the best dissertation since Heim 1982, never worrying about formatting again*

How to Use It

- ▶ Parameters and options use curly, square brackets
 - `\begin{tabular}{ccc}` begins 3-column table with center-aligned cells
- ▶ Manual spacing with `\hfill`, `\hskip`, `\vskip`, etc.
 - No more playing around with TAB indentation!

How to Use It

Define symbols with `\newcommand`, redefine with `\def`:

- ▶ `\newcommand{\Boxright}{\ensuremath{\Box\kern-1.5pt\hbox{\$ \mathord{\rightarrow} \$}}}`
 - ▶ $\$A\Boxright B\$ \rightarrow A\Box\rightarrow B$
- ▶ `\newcommand{\draft}[1]{\color{red}[\textsc{#1}]}`
 - ▶ `\draft{fix this} \rightarrow` [FIX THIS]
- ▶ `\def \llb {\llbracket}`
- ▶ `\def \rrb {\rrbracket}`
 - ▶ $\$ \llb \$ \text{ dog } \$ \rrb \$ \rightarrow \llbracket \text{dog} \rrbracket$

Document Types

L^AT_EX offers a variety of built-in, pre-configured, and customizable document classes via `\documentclass`

- ▶ `{article}` for papers
- ▶ `{beamer}` for presentations (like this!) and posters
- ▶ `{book}` for chaptered books, theses, etc.
- ▶ several more

Easily modified, customized, parameterized

More Power with Packages

Additional structures and symbols are available with *packages*

- ▶ If it has been thought of, it has an associated package

Commonly 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

More Power with Packages

Additional structures and symbols are available with *packages*

- ▶ If it has been thought of, it has an associated package
- ▶ Simply insert `\usepackage{}`
- ▶ Many come built-in or automatically added
- ▶ Cover a variety of applications and options
- ▶ Easy-to-find guides for each
- ▶ Thoroughly discussed online

More Power with Packages

Simplify templates and formatting guidelines

- ▶ Journals, conferences supply L^AT_EX style files
- ▶ Type your paper, plug in the template, and submit!

Share templates, find some online

- ▶ Borrow code for a good linguistics poster
- ▶ Share code for a space-squeezing abstract
- ▶ Use a template for your CV
- ▶ Use Cornell's official dissertation style file
- ▶ Develop your own template for syntax homeworks
- ▶ Typeset a book, print it with Cornell's Espresso Machine

Examples: Tables

Several built-in structures called by `\begin{environment}`

- ▶ Never navigate **Insert** menu again!

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

Subfield	Coolness
Phonology	4/10
Semantics	6/10
Syntax	10/10

Examples: Lists

Several built-in structures called by `\begin{environment}`

- ▶ Never navigate **Insert** menu again!

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

1. A is for Anaphora
2. B is for β

```
\begin{itemize}
\item A is for Awesome
\item B is for Bulleted List
\end{itemize}
```

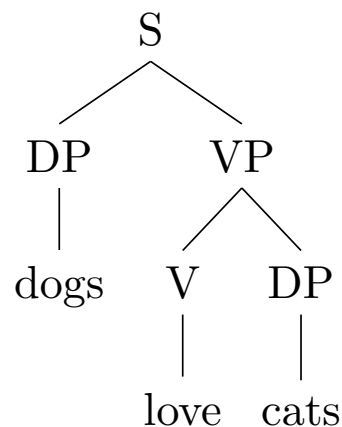
- ▶ A is for Awesome
- ▶ B is for Bulleted List

Examples: Trees

Easy-to-install packages give you more power

- ▶ Don't have to use 3rd party apps for trees!

```
\Tree [.S  
      [.DP dogs ]  
      [.VP  
        [.V love ]  
        [.DP cats ]  
      ]  
    ]
```



Examples: Citations

Easy-to-install packages give you more power

- ▶ Use `bibtex` for automatic citations and bibliographies
- ▶ `\citet{choms68}` says X, but we know that Y is true `\citep{choms95}`
- ▶ Chomsky (1968) says X, but we know that Y is true (Chomsky 1995)
- ▶ Automatically generates your bibliography in any number of pre-formatted styles (`apa`, `harvard`, `sp`, etc.)

Examples: Examples

Easy-to-install packages give you more power

- ▶ Use `gb4e` for automatic examples and references
- ▶ ...as shown in `\eqref{todd}`.

```
\begin{exe}  
  \ex\label{todd} Todd is a semanticianist.  
\end{exe}
```

- ▶ ...as shown in (5).

(5) Todd is a semanticianist.

Examples: Numbering

Keeping track of things is a breeze, too

```

\begin{exe}
  \ex \label{cliff}
  Clifford is a big red
  dog.
\end{exe}
In example (\ref{cliff}
}), we can see...

```

(6) Clifford is a big red dog.

In example (6), we can see...

Works for examples, subexamples, sections, tables, figures...

Online Resources

L^AT_EX 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 L^AT_EX code
- ▶ madebyevan.com/fsm
 - Generate a Finite State Machine
- ▶ tex.stackexchange.com
 - Q&A

Departmental Resources

L^AT_EX is also used by the majority of the department. Some will be more open to helping you than others.

- ▶ **Sarah Murray** – L^AT_EX champion, gives out .tex copies of homework, developed several useful custom document classes and templates
- ▶ Feel free to pester Robin, Todd, Zac, Mia, Carol-Rose, Mary, many others

Things You'll Never Have to Worry About Again

- ▶ *Accidental text formatting*
- ▶ Renumbering examples and references (57b)
- ▶ Citation style guides [Labov 1968:137]
- ▶ Compatibility and printing
- ▶ Dumb fonts like Calibri
- ▶ Navigating menus and buttons (Insert/Figure/Table...)
- ▶ Paying for terrible software
- ▶ 3rd party websites or programs

That's it!

Thanks!

Any questions?