

Some useful things for using LaTeX as a linguist
Part I

Detmar Meurers
dm@ling.osu.edu

Columbus, 9. December 2002

Some basic notes on layout

- To use Times/Helvetica as fonts, specify `\usepackage{times}` in preamble.
- To globally change font size, specify class option 11pt, 12pt, ...; e.g., specify `\documentclass[12pt]{article}`. Default generally is 10pt.
- To eliminate page numbers (and headers/footers) use `\pagestyle{empty}` in preamble or `\thispagestyle{empty}` in text for single pages.
- It is advisable not to use `\newline`, `\linebreak`, `\newpage`, `\pagebreak` unless you absolutely have to, in the very final version — and even then, better use `\enlargethispage{\baselineskip}`. Instead use the `samepage` environment.

A note on page layout

- Very rarely, it can be necessary to fiddle with the space available for text:

```
\addtolength{\textheight}{\baselineskip}
\addtolength{\headheight}{-.5\baselineskip}
\addtolength{\textwidth}{2em}
\addtolength{\evensidemargin}{-1em}
\addtolength{\oddsidemargin}{-1em}
```

For example, when using the `article` class, the following results in 1in margins (depends a bit on the printer though):

```
\addtolength{\topmargin}{-2cm}
\addtolength{\textheight}{3.6cm}
\addtolength{\evensidemargin}{-1.9cm}
\setlength{\oddsidemargin}{\evensidemargin}
\addtolength{\textwidth}{3.8cm}
```

Some other useful things to know about page layout

- For vertical space between paragraphs instead of indented paragraphs, add the following to the preamble:

```
\setlength{\parindent}{0cm}  
\setlength{\parskip}{1ex}
```

- For double spacing, add the following to the preamble

```
\usepackage{setspace}  
\doublespacing
```

- The class option `draft` offered by many classes helps find layout problems (e.g., overfull hboxes) by drawing black bars on side.

Use figures!

Use the figure environment for anything occupying more than a couple of lines of vertical space, i.e., almost always for trees or AVMs. This results in some floating of figures, but you avoid many layout problems, like half-empty pages.

Basic structure:

```
\begin{figure} [htbp!]  
  \begin{center}  
    Something\<\  
    big  
  \caption{Some useful caption}  
  \label{fig:a-label-for-this-figure}  
  \end{center}  
\end{figure}
```

Other general remarks

- To fix hyphenation of one of the few words LaTeX gets wrong, insert `\-` in word (e.g., `wha\-`badoo) or specify hyphenation of such words in preamble:
`\hyphenation{hy-po-cri-tical, wha-ba-ga-gy}`
- Most commands have effect local to the next environment!
For example, “`{\small dubi dubi} duh`” results in: `dubi dubi duh`
- To set the page number number, e.g., to start the paper on p.237, you can use `\setcounter{page}{237}` in the preamble (or in the text, but why would you?)

Example sentences

Recommended package (if you use glosses): `gb4e+.sty`

(by Hap Kolb and Craig Thiersch, plus some extras for better font support etc.)

General documentation:

`/opt/tex/texmf.local/tex/latex/gb4e/doc/gb4e-doc.ps`

A simple example

(1) When shall we three meet again, in thunder, lightning or in rain?

and how it's created:

```
\begin{exe}
  \ex\label{ex:some-label} When shall we three meet again,
    in thunder, lightning or in rain?
\end{exe}
```

Glosses and judged examples

- (2) * Stolz ist er auf seine Kinder gewesen.
proud is he of his children been
'He was proud of his children.'

```
\begin{exe}  
  \ex[*]{  
    \gll Stolz ist er auf seine Kinder gewesen. \\  
        proud is he of his children been\\  
    \mytrans{He was proud of his children.}}  
\end{exe}
```

Multiple gloss lines and wider judgements

- (3) **? Stolz ist er auf seine Kinder gewesen worden.
proud is he of his children been being
some other glosss for these words
'He was proud of his children.'

```
\begin{exe}\judgewidth{**?}  
  \ex[**?]{\glll Stolz ist er auf seine Kinder gewesen worden. \\  
    proud is he of his children been being\\  
    some other glosss {} for these {} words\\  
  \mytrans{He was proud of his children.}}  
\end{exe}
```

- Illustrates `\glll` and uses `\judgewidth{**?}` to line up wider judgements correctly.
- Use `\exewidth{(000)}` to line up example numbers numbers wider than two digits.

Examples in footnotes

Some text should explain each example (obligatory in good papers).¹

Some text should explain each example (obligatory in good papers).\footnote{And here's an example in a footnote:

```
\begin{exe}  
  \ex\gll [Vortragen] wird er es morgen.\  
  \hspaceThis{[]present will he it tomorrow\  
  \mytrans{He will present it tomorrow.}  
\end{exe}}
```

¹And here's an example in a footnote:

- (i) [Vortragen] wird er es morgen.
present will he it tomorrow
'He will present it tomorrow.'

Examples with subexamples

- (4) a. Verkaufen will er das Pferd.
sell wants to he the horse
'He wants sell the horse.'
- b. Stolz ist er auf seine Kinder gewesen.
proud is he of his children been
'He was proud of his children.'

```
\begin{exe}  
  \ex\begin{xlist}  
    \ex\gll Verkaufen will er das Pferd.\\  
      sell {wants to} he the horse\\  
      \mytrans{He wants sell the horse.}  
    \ex\gll Stolz ist er auf seine Kinder gewesen. \\  
      proud is he of his children been\\  
      \mytrans{He was proud of his children.}  
    \end{xlist}  
  \end{exe}
```

Showing material “as is”

To include a paragraph of material exactly the way you’ve typed it in, surround the paragraph with `\begin{verbatim}` and `\end{verbatim}`.

To show a couple of words (maximally one line) of material in this way, use `\verb!this is the material!` where `!` is any character that does not occur in the material to be shown.

Attribute-Value Matrices

Recommended package: `avm+.sty`

(by Chris Manning, plus extras for better font support etc.)

General documentation:

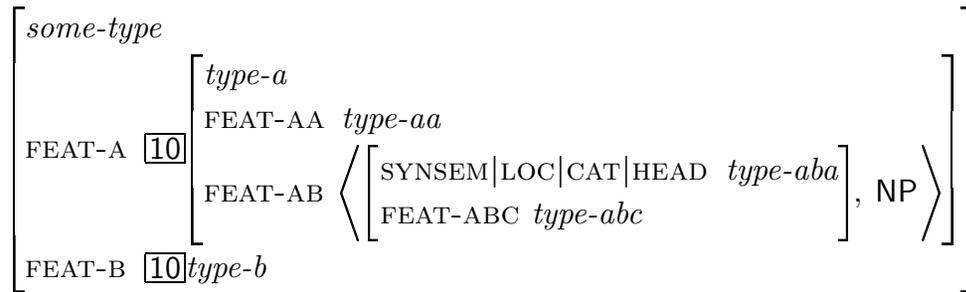
`/opt/tex/texmf.local/tex/latex/avm/avm-doc.ps`

On the extras:

- Left hand side (features) and right hand side (value) of an AVM are automatically typeset as small caps and italics, respectively.
- General commands for changing size of AVMs:
`\HugeAvmFonts`, `\hugeAvmFonts`, `\LargeAvmFonts`, `\largeAvmFonts`,
`\regAvmFonts`, `\smallAvmFonts`, `\tinyAvmFonts`
- Automatically changes size to `\smallAvmFonts` in footnotes.

AVMs in active mode

Choosing the active option (default): `\avmoptions{active,center}`



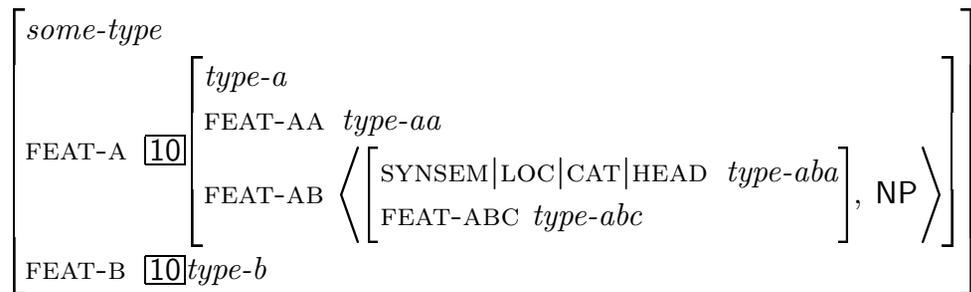
```

\begin{avm}
  [\tp{some-type}\
    feat-a & @{10}[\tp{type-a}\
      feat-aa & type-aa\
      feat-ab & <[synsem|loc|cat|head & type-aba\
        feat-abc \tpv{type-abc}],
        \textup{NP}>]\
    feat-b & @{10}type-b]
\end{avm}

```

AVMs in arguments

The active mode cannot be used in (most) command arguments. Switch to inactive option with `\avmoptions{center}` and use `\[\]` `\| \< \> \@` instead of `[] | < > @`



```

{\avmoptions{center}\begin{avm}
  \[ \tp{some-type} \[
    feat-a & \@{10} \[ \tp{type-a} \[
      feat-aa & type-aa \[
        feat-ab & \< \[ synsem \[ loc \[ cat \[ head & type-aba \[
          feat-abc \tpv{type-abc} \],
          \textup{NP} \> \] \[
        feat-b & \@{10} type-b \]
    \end{avm} \] \]

```

Trees

Recommended package: `ecltree+.sty`

(by Hideki Isozaki, plus extras making linguistic trees easier)

General documentation:

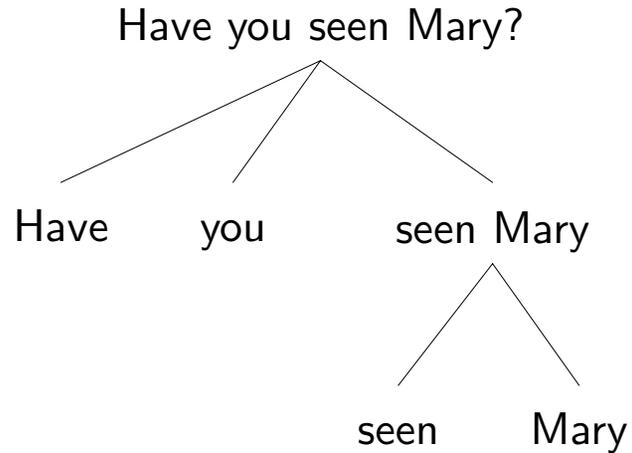
`/opt/tex/texmf.local/tex/latex/ecltree/doc/ecltreesample.tex`

The layout is automatic, but can be modified precisely with:

- add/subtract horizontal space to next node: `\setlength{\GapWidth}{1em}`
- add/subtract vertical space to next node: `\setlength{\GapDepth}{1ex}`
- compact way of specifying both (x-value in em, y-value in ex): `\XY{1}{1}`

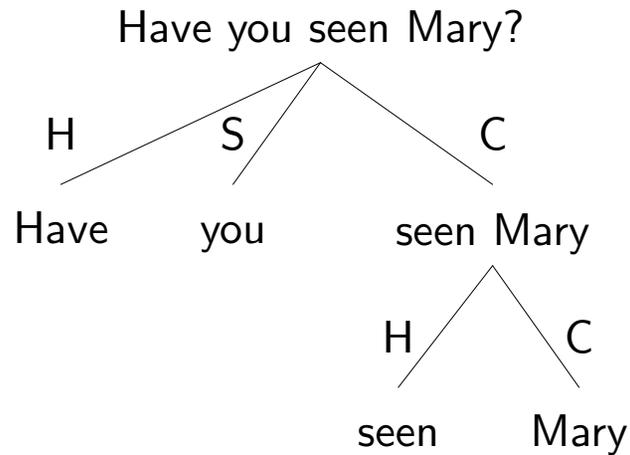
All changes take effect after the next node.

A simple tree



```
\begin{center}
\begin{bundle}{Have you seen Mary?}\setlength{\GapDepth}{6ex}
  \chunk{Have}
  \chunk{you}
  \chunk{\begin{bundle}{seen Mary}
    \chunk{seen}
    \chunk{Mary}
  \end{bundle}}
\end{bundle}
\end{center}
```

A simple tree with edge labels



```
\begin{center}
\begin{bundle}{Have you seen Mary?}\setlength{\GapDepth}{6ex}
  \chunk[H]{Have}
  \chunk[S]{you}
  \chunk[C]{\begin{bundle}{seen Mary}
    \chunk[H]{seen}
    \chunk[C]{Mary}
  \end{bundle}}
\end{bundle}
\end{center}
```

Simplified syntax, using predefined edge labels

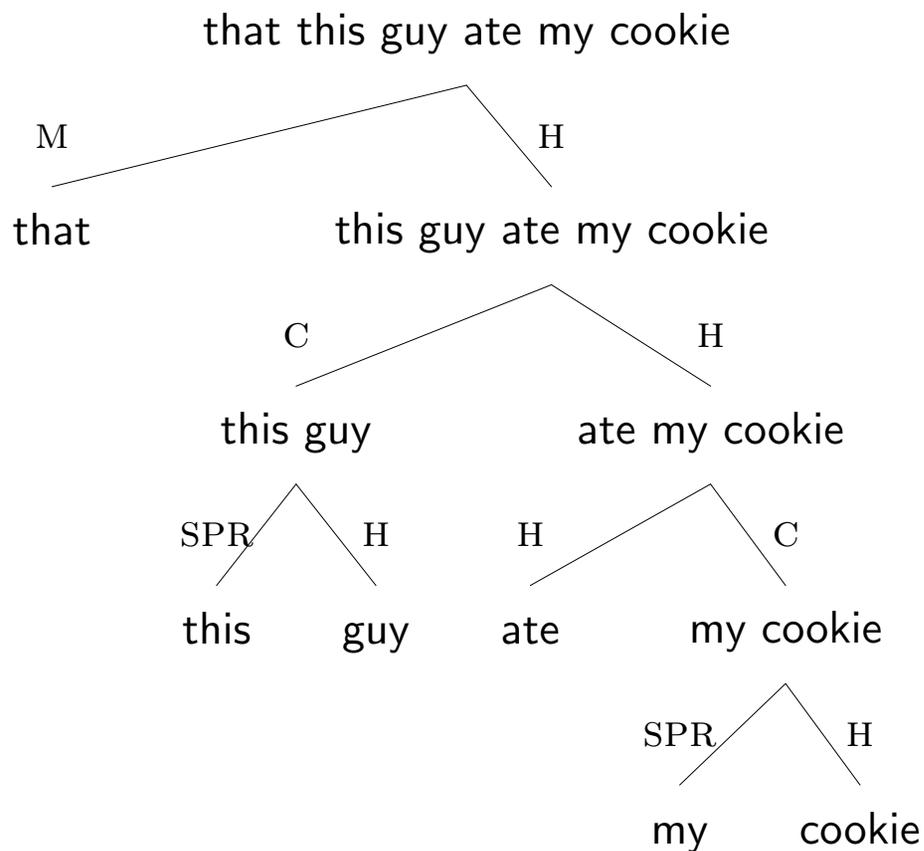
- Commands for terminal nodes:

`\head`, `\nonhead`, `\comp`, `\compopt`, `\compplus`, `\compstar`, `\subj`,
`\spr`, `\adj`, `\marker`, `\filler`, `\governed`

- Commands for nonterminal nodes:

`\hbaum`, `\nbaum`, `\cbaum`, `\coptbaum`, `\cplusbaum`, `\cstarbaum`, `\sbaum`,
`\sprbaum`, `\abaum`, `\mbaum`, `\fbaum`, `\gbaum`

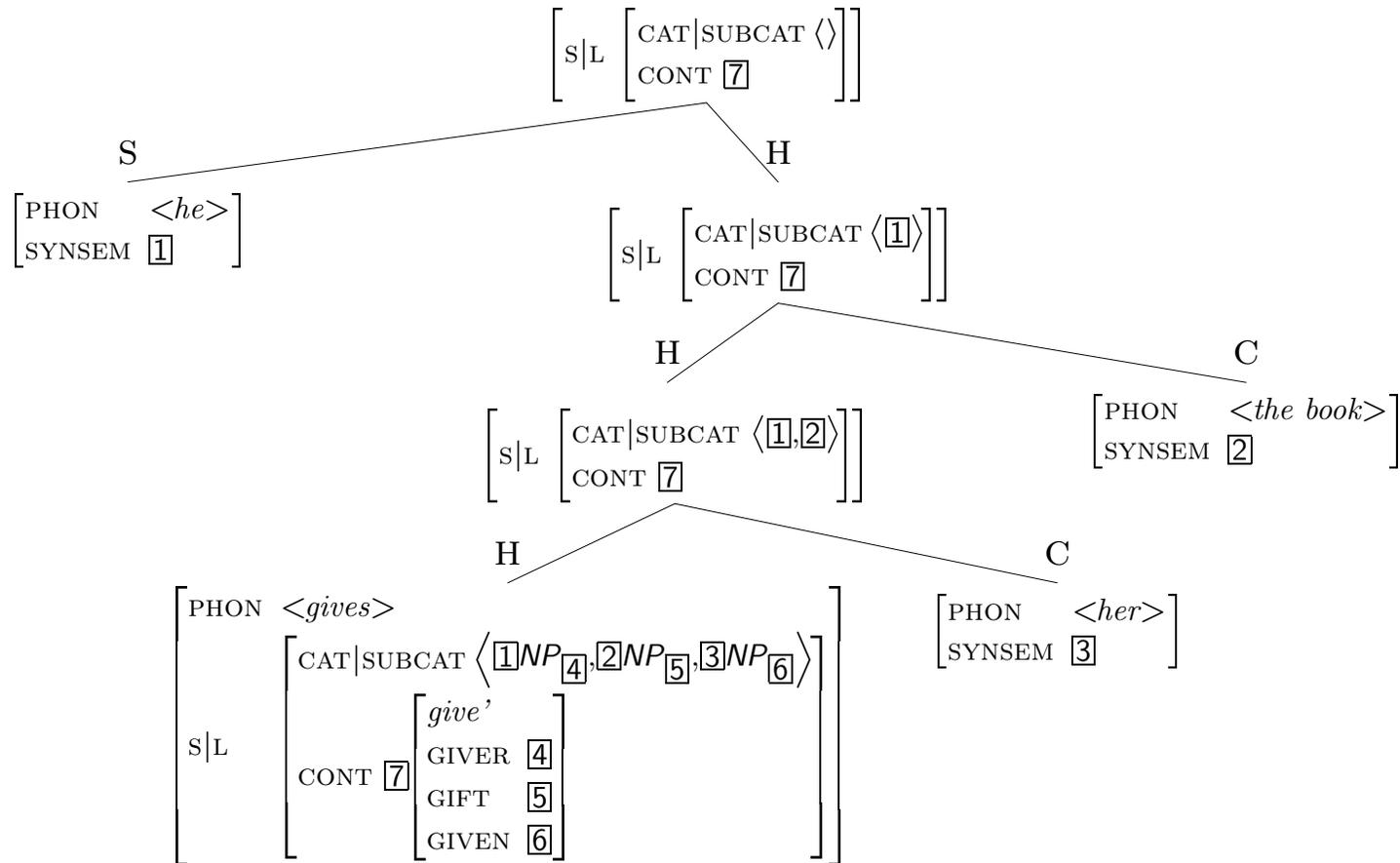
An example



```

\baum{that this guy ate my cookie}{
  \marker{that}
  \hbaum{this guy ate my cookie}{
    \cbaum{this guy}{
      \spr{this}
      \head{guy}}
    \hbaum{ate my cookie}{
      \head{ate}
      \cbaum{my cookie}{
        \spr{my}
        \head{cookie}}}}}}
  
```

Trees with AVMs

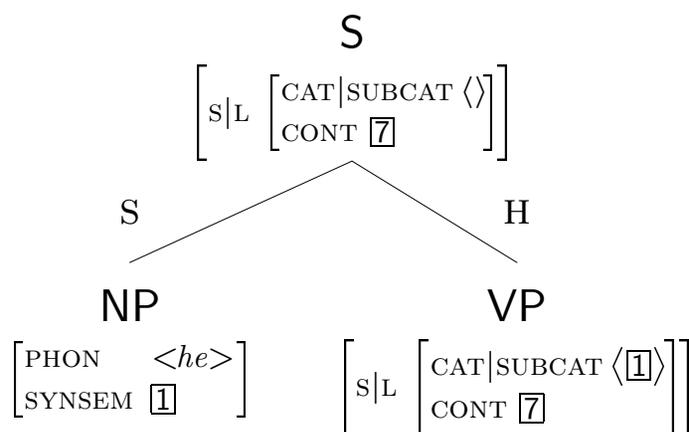


Trees with AVMs — latex source

```
\begin{center}
\regAvmFonts\avmoptions{center}
\XY{-2}{4}\setlength{\EdgeLabelSep}{1.5ex}

\baum{\begin{avm}\[s\|1 & \[cat\|subcat \<\>\]\cont \@7\]\]\end{avm}}{
  \subj{\begin{avm}\[phon & \phonlist{he}\]\synsem & \@1\]\end{avm}}
  \hbaum{\begin{avm}\[s\|1 & \[cat\|subcat \<\@1\>\]\cont \@7\]\]\end{avm}}{
    \hbaum{\begin{avm}\[s\|1 & \[cat\|subcat & \<\@1,\@2\>\]\cont \@7\]\]\end{avm}}{
      \setlength{\GapWidth}{2em}
      \head{\begin{avm}\[phon & \phonlist{gives}\]\
        s\|1 & \[cat\|subcat \<\@1\texts1{NP}_{\@4},
          \@2\texts1{NP}_{\@5},
          \@3\texts1{NP}_{\@6}\>\]\
            cont \@7\[\tp{give'}\]\
              giver & \@4\
              gift & \@5\
              given & \@6\]\]\]\end{avm}}
      \comp{\begin{avm}\[phon & \phonlist{her}\]\synsem & \@3\]\end{avm}}
      \comp{\begin{avm}\[phon & \phonlist{the book}\]\synsem & \@2\]\end{avm}}}}
\end{center}
```

Trees with abbreviations over the AVMs: Avm environment



```

{\regAvmFonts\avmoptions{center}
\baum{\begin{Avm}{S}
  \[s\|1 & \[cat\|subcat \<\>\|
        cont \@7\]\]
\end{Avm}}{
  \subj{\begin{Avm}{NP}
    \[phon & \phonlist{he}\|
          synsem & \@1\]
  \end{Avm}}
  \head{\begin{Avm}{VP}
    \[s\|1 & \[cat\|subcat \<\@1\>\|
          cont \@7\]\]
  \end{Avm}}}}

```

Including graphics

Recommended document class: `graphicx.cls`

(by Jim Hafner)

General documentation:

`/opt/tex/texmf/doc/latex/graphics/grfguide.ps`

Basic procedure:

Add to preamble: `\usepackage{graphicx}` (or `\usepackage[pdftex]{graphicx}` if using `pdflatex`)

Includ graphics with `\includegraphics{myfilename}` which requires a `myfilename.eps` in the same directory.

To convert between graphics file versions, you can use the command `convert`. For example, `convert myfile.jpg myfile.eps` or `convert myfile.gif myfile.eps`.

Rotating

Recommended package: `rotate.sty`

How to: Use `\rotate[type]{text}` where “type” is ‘l’ for left, ‘r’ for right, ‘u’ for upside-down, or ‘f’ for flip. ‘l’ is the default.

Simple example:

`\rotate[r]{This is a test}` produces

This is a test

Translate the dvi output to a ps file and view e.g. in ghostview to see the result (xdvi does not accurately show rotation).

Citations

Recommended package: `natbib.sty`

General documentation: `/opt/tex/texmf.local/tex/latex/natbib/natnotes.ps`
and `natbib.ps`

The following slides are mostly copied from this file.

Features:

- Compatible with the standard bibliographic style files: `plain`, `harvard`, `apalike`, `chicago`, `astron`, `authordate`, `natbib`.

Note: One can, as always, use `tex makebst` to create one's own `.bst` file for particular bibliography layout needs!

- Two basic citation commands: `\citet` and `\citep` for *textual* and *parenthetical* citations, respectively. Takes one or two optional arguments to add some text before and after the citation.

Basic citations

<code>\citet{jon90}</code>	⇒	Jones et al. (1990)
<code>\citet[chap.~2]{jon90}</code>	⇒	Jones et al. (1990, chap. 2)
<code>\citep{jon90}</code>	⇒	(Jones et al., 1990)
<code>\citep[chap.~2]{jon90}</code>	⇒	(Jones et al., 1990, chap. 2)
<code>\citep[see] []{jon90}</code>	⇒	(see Jones et al., 1990)
<code>\citep[see][chap.~2]{jon90}</code>	⇒	(see Jones et al., 1990, chap. 2)
<code>\citet*{jon90}</code>	⇒	Jones, Baker, and Williams (1990)
<code>\citep*{jon90}</code>	⇒	(Jones, Baker, and Williams, 1990)

Multiple citations

Multiple citations may be made by including more than one citation key in the `\cite` command argument.

<code>\citet{jon90,jam91}</code>	\Rightarrow	Jones et al. (1990); James et al. (1991)
<code>\citep{jon90,jam91}</code>	\Rightarrow	(Jones et al., 1990; James et al. 1991)
<code>\citep{jon90,jon91}</code>	\Rightarrow	(Jones et al., 1990, 1991)
<code>\citep{jon90a,jon90b}</code>	\Rightarrow	(Jones et al., 1990a,b)

Suppressed parentheses

As an alternative form of citation, `\citealt` is the same as `\citet` but *without parentheses*. Similarly, `\citealp` is `\citep` without parentheses. Multiple references, notes, and the starred variants also exist.

<code>\citealt{jon90}</code>	<code>⇒</code>	Jones et al. 1990
<code>\citealt*{jon90}</code>	<code>⇒</code>	Jones, Baker, and Williams 1990
<code>\citealp{jon90}</code>	<code>⇒</code>	Jones et al., 1990
<code>\citealp*{jon90}</code>	<code>⇒</code>	Jones, Baker, and Williams, 1990
<code>\citealp{jon90,jam91}</code>	<code>⇒</code>	Jones et al., 1990; James et al., 1991
<code>\citealp[pg.~32]{jon90}</code>	<code>⇒</code>	Jones et al., 1990, pg. 32
<code>\citetext{priv.\ comm.}</code>	<code>⇒</code>	(priv. comm.)

The `\citetext` command allows arbitrary text to be placed in the current citation parentheses. This may be used in combination with `\citealp`.

Partial citations

In author–year schemes, it is sometimes desirable to be able to refer to the authors without the year, or vice versa. This is provided with the extra commands

<code>\citeauthor{jon90}</code>	\Rightarrow	Jones et al.
<code>\citeauthor*{jon90}</code>	\Rightarrow	Jones, Baker, and Williams
<code>\citeyear{jon90}</code>	\Rightarrow	1990
<code>\citeyearpar{jon90}</code>	\Rightarrow	(1990)

Forcing upper cased names

If the first author's name contains a *von* part, such as “della Robbia”, then `\citet{dRob98}` produces “della Robbia (1998)”, even at the beginning of a sentence. One can force the first letter to be in upper case with the command `\Citet` instead. Other upper case commands also exist.

when	<code>\citet{dRob98}</code>	⇒	della Robbia (1998)
then	<code>\Citet{dRob98}</code>	⇒	Della Robbia (1998)
	<code>\Citep{dRob98}</code>	⇒	(Della Robbia, 1998)
	<code>\Citealt{dRob98}</code>	⇒	Della Robbia 1998
	<code>\Citealp{dRob98}</code>	⇒	Della Robbia, 1998
	<code>\Citeauthor{dRob98}</code>	⇒	Della Robbia

These commands also exist in starred versions for full author names.

Selecting citation style and punctuation

A `\bibpunct` declaration has six mandatory plus one optional argument:

1. opening bracket for citation "("
 2. closing bracket ")"
 3. citation separator (for multiple citations in one `\cite`) ";"
 4. n for numerical styles, s for superscripts, anything else for author-year "author-year"
 5. punctuation between authors and date
 6. punctuation between years (or numbers) when common authors missing ","
- opt. character coming before post-notes.

Example: `\bibpunct[:]{(}{)}{,}{a}{}{,}`

Overheads

Recommended document class: foils.cls

(by Jim Hafner)

General documentation:

/opt/tex/texmf.local/tex/latex/foiltex/foiltex-doc.ps and sampfoil.ps

Basic document structure:

```
\documentclass[17pt,landscape]{foils}
\begin{document}
\foilhead{Overhead title 1}
    Contents of overhead 1
\foilhead{Overhead title 2}
    Contents of overhead 2
\foilhead{Overhead title 3}
    Contents of rotated overhead 3
\end{document}
```

Some post-latex stuff

Obtaining 2up or 4up output with: `psnup`

- 2-up version of file: `psnup -2 myfile.ps myfile-2up.ps`
- 4-up version of landscaped slides: `psnup -4 -l myfile.ps myfile-4up.ps`
- 4-up version of slides: `psnup -4 myfile.ps myfile-4up.ps`
- For column major layout (instead of default row major layout) add option `-c`, e.g.:
`psnup -4 -l -c myfile.ps myfile-4up.ps`
- See `man psnup` for some more options.

Obtaining pdf output

Using pdflatex:

- Produce a pdf file instead of a dvi file using `pdflatex myfile.tex`
- This will only work with style files that do not include postscript (e.g. `pstricks`, `rotate`, `tree-dvips`).

Using conversion from ordinary dvi output:

- Produce a dvi file as usual: `latex myfile.tex`
- Transform dvi to ps file (with type 1 fonts): `dvips -Pcmz myfile.dvi -o myfile.ps`
- Transform ps file to pdf file: `distill myfile.ps`

Including sound

One can use the package `hyperref.sty` to create buttons that execute programs.

- Include `\usepackage[colorlinks]{hyperref}` in your preamble. You can drop the `colorlinks` option to have boxes around the links instead.
- To execute `play-sound1` when clicking on the text “click here”, add `\href{run:./play-sound1}{click here}`. This assumes that the command verb—`play-sound1`—is in the same directory as the tex file.

The file called `play-sound1` could, for example, contain a line to play a wav file:

```
/opt/compling/bin/na_play sound1.wav
```

Note that the file `play-sound1` must be executable, which can e.g. be obtained by calling `chmod gou+rx play-sound1` in that directory.

- Process your file with `pdflatex myfile.tex` and view the resulting file with `acroread myfile.pdf`.

Full example in: `~dm/lehre/02/latex-tutorial/latex-with-sound/sound-example.tex`

Obtaining more information

Check out the documentation mentioned for the different style files.

Look for examples of what you want to do. For example, you're welcome to browse through my files:

- To find my overheads: `find ~dm -name slides.tex -print`
- To find particular constructs in my latex files, e.g., occurrences of `GapDepth`:
`find ~dm -name "*.tex" -exec grep -H GapDepth \{\} \; | more`
- The file `~dm/.bibinputs/ling.bib` contains over 2500 bibtex, some of which may be useful. But always verify the information before using it!