

Digital Research Toolkit for Linguists

Week 12: Big projects and bibliographies with L^AT_EX

Anna Pryslopska

June 24, 2024

Psycholinguistics and Cognitive Modeling Lab

Use of AI

In your reports I expect you to **not use AI to generate the text and content** for you. I expect you to write it yourself. What you may use AI for is asking specific technical questions.

- ✓ Why am I getting this error?
- ✗ Write a few sentences about the Moses illusion.

If you have questions what is appropriate use of AI: don't use AI or ask me.

Homework

This week: our Moses illusion, not noisy channel (see me after class)

Contents

1	Introduction	2
1.1	Summary of Experimental Methods	2
1.2	Participant Numbers by Experiment	2
2	Experiment 1: Methods and Results	3
2.1	Participants and Procedure	3
2.2	Design and Predictions	3
2.3	Statistical Analysis	3
3	Experiment 2: Adjustments and Findings	3
3.1	Procedure Modification	3
4	Experiment 3: Further Investigation	3
4.1	Design Changes	3
4.2	Results	4
5	Experiment 4: Exploring Task Expectation Effects	4
5.1	Experimental Setup	4
5.2	Results and Implications	4
6	General Discussion	4
6.1	Key Findings	4
7	Conclusion	5
8	Additional Materials	5
8.1	Gloss Example	5
8.2	Syntactic Tree Example	5
8.3	Semantic Formula Example	5

Homework

Generally: Titlepage before table of contents

No semantic formula (not even copied from my slides...)

You need the package **hyperref** for hyperlinking

Why make new plots in Excel? That look the same across multiple reports?

Homework: L^AT_EX errors

Most frequent error causes: typos and missing packages.

Assignment_7.tex	Error	line 101	! Undefined control sequence. \includegraphics
Assignment_7.tex	Error	line 101	! Missing \$ inserted.<inserted text>\$ \includegraphics[scale=1]{bar_
Assignment_7.tex	Error	line 101	! Extra }, or forgotten \$. ...graphics[scale=1]{bar_esquisse-plot.jpeg}
Assignment_7.tex	Error	line 104	! Missing \$ inserted.<inserted text>\$ \end{document}

! Undefined control sequence. \includegraphics

→ package **graphicx** loaded? Solves *all* errors, causes new one 😊

! Unable to load picture or PDF file 'bar_esquisse-plot.jpeg'.

→ file name is **bar_esquisseplot.jpeg**

Homework: \LaTeX errors

\TeX capacity exceeded (Overleaf)

- Could be a number of things, but hard to debug on Overleaf
- Steps to take to debug:
 1. Remove all files except .TEX file = “Recompile from scratch” on Overleaf (solves 75% of errors)
 2. Very large image files (shouldn’t be a problem on most computers and Overleaf)
 3. Too many images (shouldn’t be a problem on most computers and Overleaf)
 4. Insufficient resources/ \TeX capacity (shouldn’t be a problem on most computers and Overleaf)
 5. Nested floats (if you have a table within a table or a figure within a figure; need special packages for that → **subcaption**)
 6. Comment out sections of your document to see what still works

Homework: L^AT_EX warnings

Warnings can be ignored (but stuff might not work properly).

Assignment_7.tex	Badbox	line 15	Underfull \hbox (badness 5847) in paragraph at lines 15--15
Assignment_7.tex	Badbox	line 25	Overfull \hbox (1.61201pt too wide) in paragraph at lines 25--29
Assignment_7.tex	Warning	line 1	No positions in optional float specifier.
Assignment_7.tex	Warning	line 98	Float too large for page by 364.99904pt
Assignment_7.tex	Warning	line 99	Reference `tab: correct answers' on page 2 undefined
Assignment_7.tex	Warning	line 104	Reference `fig:actual answers' on page 2 undefined
Assignment_7.tex	Badbox	line 30	Overfull \hbox (650.96358pt too wide) in paragraph at lines 30--106
Assignment_7.tex	Warning	line 1	There were undefined references.

Underfull/Overfull → too little/too much text in line.

Float too large for page → pic extends over margin, adjust size

\includegraphics[SIZE]{NAME} (e.g. width=\textwidth)

Reference 'key' on page XY undefined. and There were undefined references
→ do you have a figure/table?

\begin{figure} \caption{} \label{} \end{figure}

Use **label** for naming *within* an environment, **ref** for referencing *outside* of environment.

Homework: Figures

Responses	Total	Correct	Accuracy
All questions	1095	645	59%
Illusion	260	85	33%

Table 1: Caption

More informative please.

Homework: Glosses

This is not a gloss.

ക്കാട്ടാരത്തിലുകേക്ക് കൂട്ടടിക്കാണ്ടുപായി?

kot̄rattil̄kku k̄ikk̄ōup̄yi?

How many animals of each kind did Moses take on the Ark?

This is a gloss.

- (1) ഓരോ തരത്തിലുള്ള എത്ര മുഗങ്ങലെ മോഹ പെട്ടകത്തിൽ
oro tharathilulla ethra mrgangale mosha pettakathil
each kind.of how.many the.animals Moses in.the.ark
കയറ്റി?
kayatti
loaded

How many animals of each kind did Moses take on the Ark?

Quotation marks

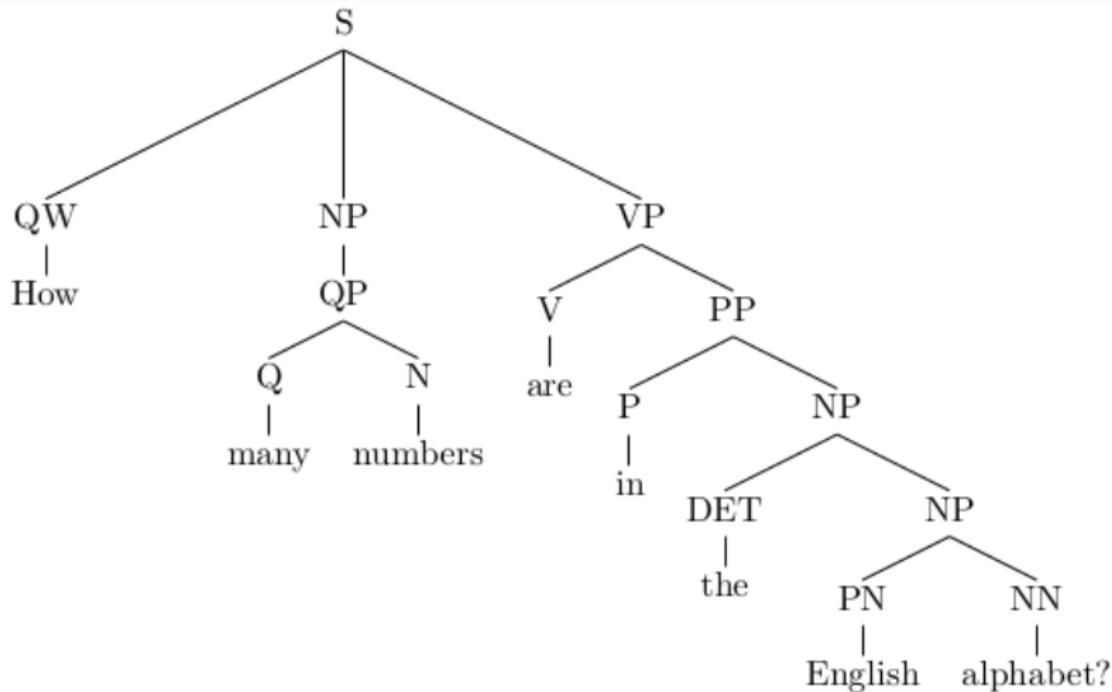
As we have seen in the table before, the amounts of "don't know" answers in the "illusion" and "no illusion" conditions are very alike.

In the "good filler" condition, however, the count of "don't know" answers is almost twice as high while in the "bad filler" condition we find the counterpart. Here is the number of "don't know" answers very low.

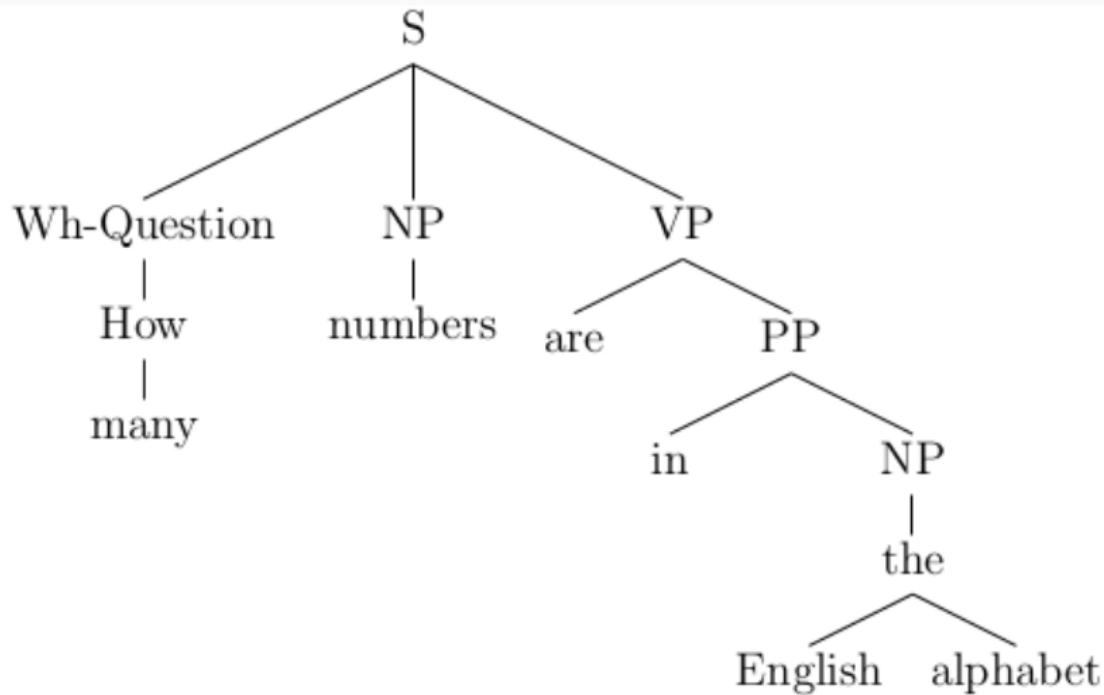
```
\usepackage{csquotes}

"don't know"                      "don't know"
"don't know"                      ``don't know''
„don't know”                      „,don't know''
“don't know”                      \enquote{don't know}
‘don't know’                      \enquote*{don't know}
```

Syntactic trees: Wow!



Syntactic trees: Somewhere a syntactician is crying



Floats: Position

\LaTeX positions floats (tables and figures) where they should go → decided by professional nerds.

Usually: top/bottom of page or end of document, but can be specified as an optional parameter.

Center horizontally $\backslash\text{centering}$

```
\begin{figure}[placement specifier]
\centering
\includegraphics[size]{file}
\caption{}
\label{}
\end{figure}
```

FLOATS: Position specifiers

h	here	Place <i>approximately</i> here
t	top	Place at the top of the page.
b	bottom	Place at the bottom of the page.
p	page	Put on a separate float page.
!	override	Override L ^A T _E X and place it RIGHT HERE . Requires the float package.

Floats: Size

Image too big

Scale it down to page width ...

```
\includegraphics[width=\textwidth]{figure.png}
```

or rotate

```
\usepackage{rotating}
\begin{sidewaysfigure}
  \centering
  \includegraphics[width=\textwidth]{figure.png}
  \caption{}
  \label{}
\end{sidewaysfigure}
```

FLOATS: SIZE

Table too big

Make it span multiple pages

`longtable`

Resize the table

`adjustbox`

Rotate the table sideways

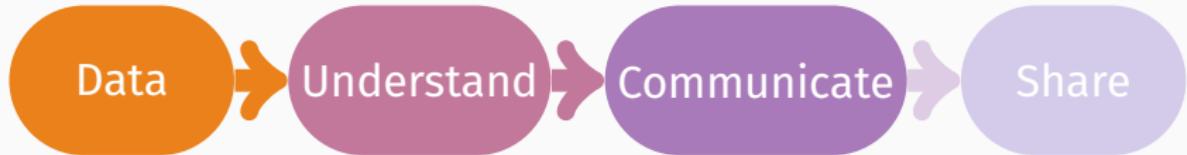
`pdflscape`

Manually set the column width

`tabularx`

Split the table to smaller parts, adjust spacing, change font size,
merge rows or columns, ...

Questions?



R & RStudio,
packages, data
types, formats,
encoding

import from
workspace,
assign values,
operations,
clean, filter,
arrange,
select,
merge, group,
summarize,
export,
visualize

document,
create clean
and beautiful
reports

connect,
collaborate,
backup

Table of contents

1. Big projects
2. Including code
3. Bibliographies
4. Homework assignment

Big projects

Big projects

Writing everything in one file gets messy *fast*.

Solution: Split document into smaller files (e.g. chapters) via the package `import`

`\input{FILENAME}`

treat the file contents as part of main file

`\include{FILENAME}`

same but good on slow computers, inserts empty pages

No preamble, just text!

File structure

Name	Size	Modified
chapters	4 items	12:53
images	1 item	13:12
book.bib	204 bytes	13:01
main.tex	597 bytes	13:28
mypreamble.sty	216 bytes	13:11
title.tex	260 bytes	13:28

Main file	main.tex
Preamble	mypreamble.sty
Title page	title.tex
Bibliography file	book.bib
Folders for multiple files of same kind	chapters, images

File structure: Preamble

Make your own style
`mypreamble.sty` and
keep it next to the main file.
`\usepackage{mypreamble}`



(not its final form)

```
\usepackage{fontspec}           % Fonts
\defaultfontfeatures{Mapping=tex-text}
\usepackage{xunicode}
\usepackage{amsmath}
\usepackage{amsthm}             % Theorems
\usepackage{longtable}          % Long tables
\usepackage{multirow}           % Cell and row manipulation in tables
\usepackage{paralist}
\usepackage{acronym}            % In-line lists
\usepackage{xltextra}
\usepackage{amssymb}             % Mathematical symbols
\usepackage{bm}                 % For that one bold letter in mathmode
\usepackage{cquotes}            % Fancy quotes
\usepackage{pifont}              % Matching checkmarks
\usepackage{stmaryrd}            % Semantic brackets
\usepackage{drs}                % DRS boxes
\usepackage{polyglossia}          % Language settings
\setdefaultlanguage{english}     % Images
\usepackage{graphicx}            % Color
\usepackage{xcolor}
\usepackage{tikz, tikz-qtree}     % Graphs and trees
\usetikzlibrary{arrows, backgrounds, calc, decorations.text,
decorations.pathreplacing, fit, intersections, positioning, shapes, trees}
\usepackage{fontawesome}          % For cool symbols
\usepackage[super]{nth}           % First, second etc. formatting
\usepackage{doi}                 % DOI link
\usepackage[backend=biber,
           sorting=nyt,
           sortcites=true,
           indexing=cite,
           useprefix=false,
           maxcitenames=2,
           style=authoryear-comp]{biblatex}
\addbibrresource{thesis.bib}

\usepackage{subfiles}             % Subfiles
\usepackage{subcaption}           % Subcaptions for figures
\usepackage{landscape}            % Landscape pages
\graphicspath{(./images/)}       % Path for images
\usepackage{gb4e}
\usepackage{emptypage}            % Removes headers and footers from empty pages
\usepackage{fancyhdr}              % Fancy headers and footers
\usepackage{titlesec}              % Fancy titles
\usepackage{hyperref}              % Hyperlinks and references
\usepackage{imakeidx}             % Index
```

File structure: Chapters

Are imported/included in your `main.tex` file.

```
\import{PATH}{FILENAME}  
\include{PATH/AND/FILENAME}
```

```
\documentclass[a4paper,11pt]{book}  
\usepackage{import}  
\begin{document}  
  
\chapter{First chapter}  
\import{chapters/}{}{chapter1.tex}  
\chapter{Second chapter}  
\include{chapters/chapter2.tex}  
  
\end{document}
```

File structure: Title page

```
\import{./}{title.tex}
```

```
< > title.tex
1 \begin{titlepage}
2   \begin{center}
3     {\Huge \textbf{Bielefeld conspiracy}}\\
4     {\Huge Anna Pryslopska}\\
5     {\Huge \today}
6     \vfill
7     \includegraphics[width=\textwidth]{Bielefeld}
8     \vfill
9
10    Supervised by: Nobody
11
12    Special collaborator: \LaTeX
13
14  \end{center}
15
16 \end{titlepage}
```

Bielefeld conspiracy
Anna Pryslopska
June 24, 2022

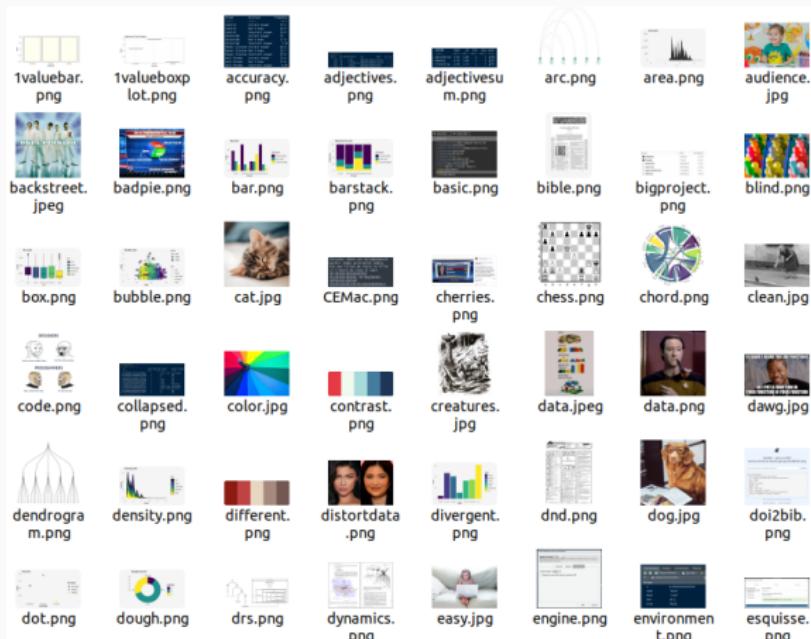


Supervised by: Nobody
Special collaborator: \LaTeX

File structure: Images

Requires **graphicx** and folder for images (defined in **preamble**).

```
\graphicspath{./images/}
```



Parts of a book (optional but fancy)

\frontmatter

title page, abstract, toc, preface, list of figures, list of tables, special symbols or abbreviations, etc.

pages are numbered with lowercase roman numbers

\mainmatter

the main part of your book (chapters, sections, etc.)

resets the numbering and makes it arabic

\backmatter

indices, bibliography, glossary, notes, etc.

leaves the page numbering, but does not number chapters

Including code

Verbatim, pdfpages, and listings

```
\begin{verbatim}
```

This text does not get evaluated but is printed as is. Could be useful for code snippets.

I can use # \$ % & * ! \ and even

```
\documentclass[10pt]{article} wherever I want.
```

```
\end{verbatim}
```

To include a whole PDF document (e.g. analysis code in the appendix) use the package `pdfpages`:

```
\includepdf{myanalysis.pdf}
```

For longer code, use the package `listings`.

Bibliographies

Bib basics: Not this



Bib basics

\LaTeX has a special feature for creating and referencing bibliographies.

Create bibliography → reference in text → generate references

You can manually list all references within the main .tex file by using \bibitem:

```
\begin{thebibliography}{99}
\bibitem{grice1989}
Paul Grice (1989). \textit{Studies in the Way
of Words}. Cambridge: Harvard University Press
\end{thebibliography}
```

Paul Grice (1989). *Studies in the Way of Words*. Cambridge: Harvard University Press



**FORMAT
EACH \BIBITEM
BASED ON
REFERENCE STYLE**



**CREATE
BIBLIOGRAPHY
DATABASE FILE**

BibLaTeX

Bib(La)TeX allows for using a separate `.bib` file with a list of references.

In the preamble:

```
\usepackage[OPTIONS]{biblatex}  
\addbibresource[OPTIONS]{FILE NAME}
```

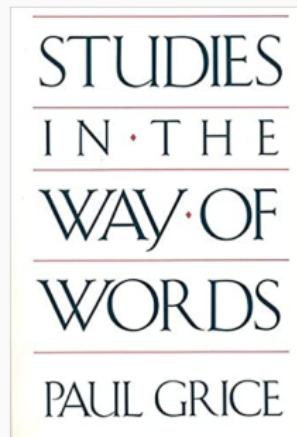
In the document body:

```
\printbibliography[OPTIONS]
```

.bib file structure

List of references, written manually or imported (e.g. from a reference manager).

```
@book{grice1989,  
    title={Studies in the Way of Words},  
    author={Grice, Paul},  
    year={1989},  
    publisher={Harvard University Press},  
    address={Cambridge}  
}
```



Paul Grice (1989). *Studies in the Way of Words*. Cambridge: Harvard University Press

Multiple authors

```
@book{wickham2023,  
  title={R for data science: import, tidy, transform,  
  visualize, and model data},  
  author={Wickham, Hadley and Çetinkaya-Rundel,  
  Mine and Grolemund, Garrett},  
  edition={2},  
  year={2023},  
  publisher={O'Reilly Media, Inc.},  
  url={https://r4ds.had.co.nz/}  
}  
  
author={Hadley Wickham and Mine Çetinkaya-Rundel  
and Garrett Grolemund}
```

Hadley Wickham, Mine Çetinkaya-Rundel, and Garrett Grolemund (2023). *R for data science: import, tidy, transform, visualize, and model data*. 2nd ed. O'Reilly Media, Inc. URL: <https://r4ds.hadley.nz/>

I want it THAT way



Don't question me why

CoSMAS I/II ≠ I/II, CoSMAS

World Health Organisation ≠ Organisation, World Health



Sometimes capitalization matters → style-dependent

```
@misc{cosmas2008,  
  Year={2008},  
  Author={{CoSMAS I/II}},  
  Title={{C}orpus {S}earch, {M}anagement and  
  {A}nalysis {S}ystem (Version 3.9)},  
  Url={http://www.ids-mannheim.de/cosmas2},  
  Urldate={2021-08-13}  
}
```

CoSMAS I/II (2008). *Corpus Search, Management and Analysis System (Version 3.9)*. URL: <http://www.ids-mannheim.de/cosmas2>
(visited on 08/13/2021)

Referencing

Command	Type	Example
<code>\cite{}</code>	bare	Grice 1989
<code>\parencite{}</code>	parenthetical	(Grice 1989)
<code>\textcite{}</code>	textual	Grice (1989)
<code>\footcite{}</code>	footnote	¹
<code>\smartcite{}</code>	context-dependent	²
<code>\citeauthor{}</code>	author list	Grice
<code>\citetitle{}</code>	(short) title	<i>Studies in the Way of Words</i>
<code>\citeyear{}</code>	year	1989
<code>\fullcite{}</code>	full reference	Paul Grice (1989). <i>Studies in the Way of Words</i> . Cambridge: Harvard University Press
<code>\nocite{}</code>	include in bibliography w/o citation	

¹Grice 1989.

²Grice 1989.

Write or import

Create from scratch

slow, tedious, but good for complicated misc. entries

[http://tug.ctan.org/info/biblatex-cheatsheet/
biblatex-cheatsheet.pdf](http://tug.ctan.org/info/biblatex-cheatsheet/biblatex-cheatsheet.pdf)

Semi-automatic entry from template

(e.g. Bibliography → Biblatex → Article in journal)

many optional fields (e.g. translator, annotator, series) and others
you still need to fill in manually

Import online

fast, convenient, but **always** contain mistakes

Life's too short to write bibliography from scratch.

How Speakers Refer: The Role of Accessibility

Jennifer E. Arnold

First published: 31 March 2010 | <https://doi.org/10.1111/j.1749-818X.2010.00193.x> | Citations: 123

[Read the full text >](#)



PDF



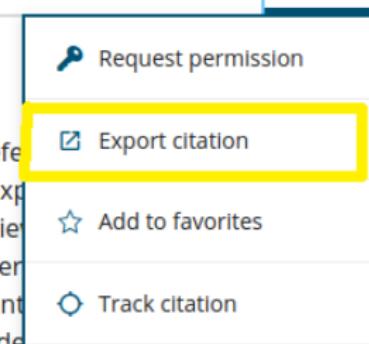
TONS



SHARE

Abstract

One of the core components of language is referentiality. Speakers have the ability to choose between expressions that are highly explicit (e.g., *Peter*) and reduced lexical forms (e.g., *he*). This paper reviews research on how speakers choose between these forms, and shows that this choice is driven by the *accessibility* or *salience* of the referent. Accessibility constraints on referentiality underlie these effects. Two classes of constraints are identified: (1) linguistic processing constraints that increase the use of implicit forms, and (2) non-linguistic processing constraints that increase the use of explicit forms. These effects together support a modified version of the traditional claim that speakers choose referential explicitness so that the listener can identify the referent, and underscore the need for accessibility to be mediated by a non-linguistic representation.



Doi-to-bib

DOI = (persistent) Digital Object Identifier

<https://www.doi2bib.org/>



doi2bib – give us a DOI
and we will do our best to get you the BibTeX entry

[get BibTeX](#)

```
@article{Arnold2010,
  doi = {10.1111/j.1749-818X.2010.00193.x},
  url = {https://doi.org/10.1111/j.1749-818X.2010.00193.x},
  year = {2010},
  month = mar,
  publisher = {Wiley},
  volume = {4},
  number = {4},
  pages = {187--203},
  author = {Jennifer E. Arnold},
  title = {How Speakers Refer: The Role of Accessibility},
  journal = {Language and Linguistics Compass}
}
```

<https://doi.org/10.1111/j.1749-818X.2010.00193.x>

[Copy Bib to Clipboard](#) [Copy URL to Clipboard](#)

Google Scholar

scholar.google.com

The screenshot shows a Google Scholar search results page. The search query 'Arnold 2010 How Speakers Refer' is entered in the search bar. The results are filtered by 'Artikel' (Articles). The first result is a paper titled 'How speakers refer: The role of accessibility' by JE Arnold, published in 'Language and Linguistics Compass' in 2010. The result card includes the author's name, the journal title, a brief abstract, and citation details in three formats: MLA, APA, and ISO 690. Below the citation details, there are download links for BibTeX, EndNote, RefMan, and RefWorks, with 'BibTeX' highlighted by a yellow box. The sidebar on the left provides filtering options for time period, relevance, date, language, and document type.

≡ Google Scholar

Arnold 2010 How Speakers Refer

Artikel

Beliebige Zeit

JE Arnold - Language and Linguistics Compass

One of the core components of language is referential expression, between expressions that are highly explicit (eg., lexical forms (eg., he)). This paper reviews claims about the accessibility or salience of the referent, and the potential effects. Two classes of constraint are examined: (a) those that have been identified as the determinant of referential choice, and (b) those that have been identified as the determinant of referential choice.

Nach Relevanz sortieren

Nach Datum sortieren

Beliebige Sprache

Seiten auf Deutsch

Alle Typen

Übersichtsarbeiten

How speakers refer: The role of accessibility [PDF] wiley.com

Arnold, Jennifer E. "How speakers refer: The role of accessibility." *Language and Linguistics Compass* 4.4 (2010): 187-203.

Arnold, J. E. (2010). How speakers refer: The role of accessibility. *Language and Linguistics Compass*, 4(4), 187-203.

ARNOLD, Jennifer E. How speakers refer: The role of accessibility. *Language and Linguistics Compass*, 2010, 4. Jg., Nr. 4, S. 187-203.

BibTeX EndNote RefMan RefWorks

Bibliography in style

Depends on journal, advisor, personal preference, day, mood, etc.

Formats references in text and in bibliography (cf. [examples on Overleaf](#)).

```
\usepackage[style=authoryear]{biblatex}
```

Style	Output
numeric	[1] Paul Grice. <i>Studies in the Way of Words</i> . Cambridge: Harvard University Press, 1989.
alphabetic	[Gri89] Paul Grice. <i>Studies in the Way of Words</i> . Cambridge: Harvard University Press, 1989.
reading	Grice: Studies in the Way of Words grice1989 Paul Grice. <i>Studies in the Way of Words</i> . Cambridge: Harvard University Press, 1989.
authoryear	Grice, Paul (1989). <i>Studies in the Way of Words</i> . Cambridge: Harvard University Press.

Get yourself sorted

Depends on journal, advisor, personal preference, day, mood, etc.

Sort the bibliography entries.

```
\usepackage[sorting=nyt, style=authoryear]{biblatex}
```

Sorting	Output
nty	name, title, year
nyt	name, year, title
ynt	year, name, title
ydnt	year (descending order), name, title
none	no sorting

Compilation



1. \LaTeX basic file info
2. \LaTeX labels, references, citations, indices, toc, etc.
3. BibTeX input citations, bibliography
4. \LaTeX adjust based on BibTeX



2. and 3. can be swapped.

If you skip 3. or don't have a reference in the **bib** file, then the reference will show up as **arnold2011** or **??**, be omitted in the bibliography, and \TeX will complain “There were undefined references.”

Print bibliography

In document body using the command \printbibliography

References

-  Arnold, Jennifer E (2010). "How speakers refer: The role of accessibility." In: *Language and Linguistics Compass* 4.4, pp. 187–203.
-  Bott, Oliver (2008a). "Doing it again and again may be difficult, but it depends on what you are doing." In: *Proceedings of the 27th west coast conference on formal linguistics*. Somerville MA: Cascadilla Proceeding Project, pp. 63–71.
-  — (2008b). "The processing domain of aspectual interpretation." In: *Studies in the composition and decomposition of event predicates*. Springer, pp. 195–229.

-  CoSMAS I/II (2008). *Corpus Search, Management and Analysis System (Version 3.9)*. URL:
<http://www.ids-mannheim.de/cosmas2> (visited on 08/13/2021).
-  Grice, Paul (1989). *Studies in the Way of Words*. Cambridge: Harvard University Press.
-  Wickham, Hadley, Mine Çetinkaya-Rundel, and Garrett Grolemund (2023). *R for data science: import, tidy, transform, visualize, and model data*. 2nd ed. O'Reilly Media, Inc. URL:
<https://r4ds.hadley.nz/>.

Summary

- ✓ large project management
- ✓ including custom styles
- ✓ including PDF files
- ✓ basic Bib(La)TeX
- ✓ citation types
- ✓ bibliography styles
- reference managers, looking up literature, text editors

Questions?

Homework assignment

Homework assignment due June 28th at 15:30

- ❸ Complete assignment 10 (→ ILIAS)