LIN 405: Intro to Beamer

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Beamer

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- Why is Beamer useful?

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- ▶ Why is Beamer useful?
  - ▶ If you type your paper in LATEX you can copy and paste material directly from the paper to use in your presentation.

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  - ▶ "BEAMER is a LATEX class for creating presentations that are held using a projector."
- ▶ Why is Beamer useful?
  - ▶ If you type your paper in LATEX you can copy and paste material directly from the paper to use in your presentation.
- ▶ Today we will go over the basics of constructing a presentation using Beamer.

Outline

Basic Preamble Code

In general, you set up a Beamer presentation the same way you set up an article.

```
% Tell LaTeX the type of document you are making
\documentclass[presentation]{beamer}

% Then add any extra packages you need
\usepackage[T1]{tipa}
\usepackage{phonrule}
...
```

Themes Overview

- There are two ways to change the general layout and color theme of your presentation.
  - Manually set parameters
  - Use a pre-made theme
- You can set a layout theme using the command \usetheme{}
- You can set a color theme using the command \usecolortheme{}

List of Themes

Layout		**Color**	
AnnArbor	Hannover	albatross	structure
Antibes	Ilmenau	beaver	whale
Bergen	JuanLesPins	beetle	wolverine
Berkeley	Luebeck	crane	
Berlin	Madrid	default	
Boadilla	Malmoe	dolphin	
boxes	Marburg	dove	
CambridgeUS	Montpellier	fly	
Copenhagen	PaloAlto	lily	
Darmstadt	Pittsburgh	orchid	
default	Rochester	rose	
Dresden	Singapore	seagull	
Frankfurt	Szeged	seahorse	
Goettingen	Warsaw	sidebartab	

Useful Theme Links

- Beamer Theme Gallery
- Beamer Theme Matrix
- Another Beamer Theme Matrix
- Overleaf Beamer Reference Guide

Manual Parameter Changes

You can manually change parameters with these commands. In the first set of curly brackets you declare what beamer element you want to change. In the second set of brackets you define how it should be changed.

```
\setbeamertemplate{itemize item}[circle]
\setbeamertemplate{itemize subitem}[square]
\setbeamertemplate{itemize subsubitem}[triangle]
\setbeamercolor{itemize item}{fg=red}
\setbeamercolor{itemize subitem}{fg=yellow}
\setbeamercolor{itemize subsubitem}{fg=green}


\setbeamerfont{title}{shape=\itshape,family=\rmfamily}
\setbeamercolor{title}{fg=red!80!black,bg=red!20!white}
```

Example of new itemize parameters

- Red circle
  - Yellow square
    - Green triangle

Setting up your Title Page

- In the preamble you can once again define the title, name, date, etc...
- You can also add secondary descriptions in [].
  - These are used at the bottom of slides for certain themes.
- You can also add a title graphic in the preamble using the \titlegraphic{} command.

Example of Title Preamble

```
\title[Intro to Beamer]{LIN 405: Intro to Beamer}
\author[Nelson]{Scott Nelson}
\date[6/29/21]{June 29, 2021}
\institute[Stony Brook]{Stony Brook University}
```

Making a Title Page

▶ You can make a title page using the command `titlepage`.

▶ This is put in a frame environment which we will discuss more in depth soon.

```
\begin{frame}
    \titlepage
\end{frame}
```

Making an Outline

- ▶ Beamer also lets you use the \section{} and \subsection{} commands.
- ▶ Some themes integrate this information into their design.
- ▶ You can also use the \tableofcontents command to make an outline frame.
- ▶ You can use \tableofcontents[currentsection] or \tableofcontents[currentsubsection] to highlight the current part of your talk.

Example Current Subsection Outline

Adding a frame counter

- Having a frame/page counter is helpful for the audience.
- `\setbeamertemplate{footline}[frame number]` will add a frame counter.
- This may override the theme footline design.

Basic Frame Layout

- ▶ In Beamer, an individual slide is called a frame. You can define a frame environment using \begin{frame}...\end{frame} Syntax.
- ▶ In a second set of curly brackets you can give the frame a title.
- ▶ Everything in between will be added to the frame in some way.

```
\begin{frame}{Frame Title}
    ...
\end{frame}
```

List Environments

- ▶ Lists are made the same way as in basic LaTeX.
- ▶ For a non-numbered list use the `itemize` environment and `\item` command.
- ▶ For a numbered list use the `enumerate` environment and `\item` command.

Layering Elements

- ▶ You can also add overlay specifications to your lists.
- ▶ This breaks your frame down into different slides.
- ▶ These are put in angle brackets with a number and other information.
- ▶ \item<1-> means show this line on slide 1 and all other slides.
- ▶ \item<-3> means show this line on all slides up to slide 3.
- ▶ \item<2-4> means show this line on all slides between slides 2 and 4.

Example Frame with layered points

```
\begin{frame}{Example Frame with layered points}
\begin{enumerate}
    \item<1-> The first point will be on all slides.
    \item<2-3> The second point will only be on slides 2 an
    \item<3-> The third point will show up starting at sli
    \item<-4> The fourth point will be on all slides up unt
    \item<5> The fifth point will only be on slide 5.
    \item<1,3-4,6> The sixth point will be on slides 1, 3,
\end{enumerate}
\end{frame}
```

Example Frame with layered points

1. The first point will be on all slides.

4. The fourth point will be on all slides up until slide 4 then disappear.

6. The sixth point will be on slides 1, 3, 4, and 6 only.

Example Frame with layered points

1. The first point will be on all slides.
2. The second point will only be on slides 2 and 3.

4. The fourth point will be on all slides up until slide 4 then disappear.

Example Frame with layered points

1. The first point will be on all slides.
2. The second point will only be on slides 2 and 3.
3. The third point will show up starting at slide 3 and stay.
4. The fourth point will be on all slides up until slide 4 then disappear.

6. The sixth point will be on slides 1, 3, 4, and 6 only.

Example Frame with layered points

1. The first point will be on all slides.

3. The third point will show up starting at slide 3 and stay.
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Example Frame with layered points

1. The first point will be on all slides.

3. The third point will show up starting at slide 3 and stay.

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Example Frame with layered points

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Alert

- Beamer also has what is called "alert" text. It looks like this.
- You can layer this effect with your lists by adding `alert@n` in the angle brackets for a line in your list.
- `\item<alert@3>` would make it so that item is shown in alert text on slide 3.
- `\item<2-|alert@4>` would make it so that item shows up starting on the second slide and is shown in alert text on slide 4.

Example of layered alert text

- ▶ This first point will turn red on slide 3.

Example of layered alert text

- ▶ This first point will turn red on slide 3.
- ▶ This second point will turn red on slide 4.

Example of layered alert text

▶ This first point will turn red on slide 3.

▶ This second point will turn red on slide 4.

▶ This third point will never turn red.

Example of layered alert text

- This first point will turn red on slide 3.
- This second point will turn red on slide 4.
- This third point will never turn red.
- This fourth point will never turn red.

Basic Figure Placement

- Adding figures to a Beamer presentation is done the same way as in a basic article.
- One difference is that you do not have to load a special package.
- \includegraphics[width=0.3\textwidth]{levels.jpg}
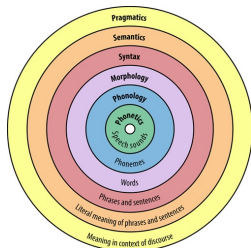
Multiple Columns

- You can also divide the frame up into multiple columns using the columns environment.
- Within this environment you then have to use the column environment and then specify the width of the column.
- Each column then is its own mini frame that can include whatever you want (list, figure, etc...)
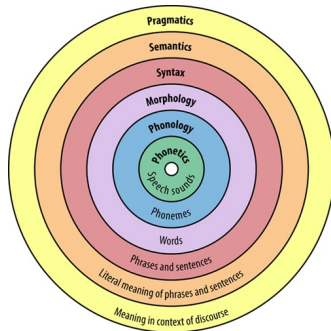
On Slide

- ▶ What if you want to layer images or other non-list items?
- ▶ You can use the command \onslide<> to do so.
- ▶ The syntax within the angle brackets is the same as for lists.
- ▶ \onslide<2->\includegraphics{levels.jpg} would include the image only from the second slide on.

On Slide

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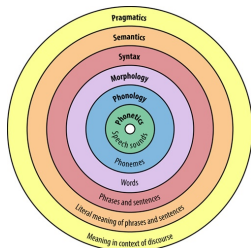
Tables

- Tables are also typeset the same way as in basic LaTeX.
- You can use the \onslide<> command to uncover a table by column if you load the colortbl package.

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   Name
   Scott
   Liam
   Arwen

Tables

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Name	Favorite color
Scott	green
Liam	orange
Arwen	yellow

Tables

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- You can use the \onslide<> command to uncover a table by column if you load the colortbl package.

Name	Favorite color	Interests
Scott	green	sound, biking, my dog
Liam	orange	music, video games, animals
Arwen	yellow	tabletop games, cats

Adding References

- ▶ References are also done the same way as in a normal article file.
- ▶ Load reference package (e.g. `natbib`).
- ▶ Then use `\cite` commands.
- ▶ Add a References frame and use `\bibliographystyle{}` and then `\bibliography{}`.
- ▶ E.g., Nelson and Durvasula (2021) argue that the generalization of lexically-guided perceptual learning is aided by type variation in the training stimuli. Therefore, previously null results may be reinterpreted as a byproduct of insufficient variation to trigger generalization.

References

Nelson, S. and Durvasula, K. (2021). Lexically-guided perceptual learning does generalize to new phonetic contexts. *Journal of Phonetics*, 84:101019.

Beamer References

- The Beamer Manual has more detailed information on how to customize your slides.
- There is also a Overleaf Beamer Tutorial that covers the basics.
- I'm always available to help as well!