

## **Today's objectives:**

- **Morpheme alternations – putting the pieces together**
- **Adding phonological rules to our model of the grammar**

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*Background preparation:*

- *PPs: Lamba, Dutch*

# 0. Today's plan

- Morpheme alternations and the scientific approach to phonology
- Taking a closer look at the concept of phonological process
- Formalizing phonological rules

# 1. Morpheme alternations and our model

- The process of scientific inquiry includes:
  - **Generating** and **testing hypotheses** or **theories** pertaining to the **natural world**
- One goal of this course: Make progress toward a **model** of human **phonological knowledge** that can
  - **describe** phonological data that we observe
  - **predict** what else should / should not occur
  - **explain** why languages are the way they are

# 1. Morpheme alternations and our model

- One kind of phonological data: Morphemes that change their sound shape in context
- What are some hypotheses we have tested about this phenomenon...
  - specific to particular languages?
  - in general?

# 1. Morpheme alternations and our model

- What is the general outline of our model of morpheme alternations?

Some keywords to consider:

- mental lexicon
  - morpheme
  - underlying representation
  - surface form
  - phonological process
- How can we apply this approach to Dutch and to Lamba?

# 1. Morpheme alternations and our model

*Here are the steps we take as analysts; the boxed steps are where we **propose an analysis using our model***

- 1 Isolate the **morphemes** in the data set
- 2 Identify which morphemes are **alternating**
- 3 Determine the **phonological context** in which each surface form appears
- 4 Determine the best **analysis** (UR + rule(s) combination)
- 5 Make sure your analysis is **formalized** using the tools of our phonological model

## 2. Phonological processes

- Informally speaking...
  - What phonological process applies in our analysis of Dutch?
  - What about Lamba?
- How can we use the tools of our formal model to characterize these phonological processes?
  - What is the **environment** where the process takes place?
  - What sounds does the process **apply to**?
  - What **change** does the process make?

### 3. Formalizing processes as phonological rules

- In order to incorporate phonological processes into our model of phonology, we need to make specific proposals about what the grammar does to make a process happen
- One proposal: **Phonological rules**



### 3. Formalizing processes as phonological rules

- A phonological rule takes the following form:

**target** → **change** / **environment**

- The **target** is the natural class that the rule *applies to*
  - It must be stated in terms of **features**
  - This is true even if the natural class that the rule applies to consists of only one segment!
  - Why? Because we have proposed that features are how the mental grammar refers to segments

### 3. Formalizing processes as phonological rules

- A phonological rule takes the following form:

**target** → **change** / **environment**

- The **change** is a list of **only** *those features* that are *affected*
  - We don't conceive of a rule as something that *replaces* one segment with an entirely different segment
  - We see a rule as making *adjustments* to a segment

### 3. Formalizing processes as phonological rules

- A phonological rule takes the following form:

**target** → **change** / **environment**

- The **environment** specifies *where the rule applies*
  - Use **features** to represent natural classes
  - **#** stands for word boundary where necessary
  - An **underscore** shows the **position** of the target:
    - [+nas]                       after a nasal segment
    - [-son, +cont]       before a fricative
    - [+strid]            [+lat]     between a strident and a lateral
    - # [ -cont]                      after a word-initial stop

# 3. Formalizing processes as phonological rules

## Group discussion

- Propose a rule-based analysis for the Turkish genitive morpheme
  - Apply the tools of our model
  - Make the analysis as insightful as you can!