

Today's objectives:

- **Testing feature models**
- **Describing segment classes**

Background preparation:

- Handout – Feature models
- Data set – Turkish

0. Today's objectives

After today's class, you should be able to:

- In general: Test models of segmental representation against phonology data sets to see how well they can **describe** and **predict** segment **classes**
- Specifically: Use our **feature model** to describe a phonological pattern distinguishing segment classes

0. Check-in: Preparation questions on Canvas

- Reminders: **preparation questions**
 - Due by **11am**
 - Assume you have a “Complete” (if submitted) unless the feedback tells you otherwise
 - Look at your **point score** to see your **accuracy**
 - Read the **feedback comments**
 - Anything you should review, or ask about?
- **PQ 01.23**
 - Gave a lot of people trouble!
 - Optional redo available for practice/learning

1. Warm-up: Models in scientific investigation

- What was the point about the example “imagine building an apple out of Legos”?

1. Warm-up: Models in scientific investigation

- What's the **difference** between these statements?
 - [m] is voiced / is a voiced sound
 - [m] is [+voice]

1. Warm-up: Models in scientific investigation

- What's the **difference** between these statements?
 - [m] is voiced / is a voiced sound
 - This is a fact about the world
 - [m] is [+voice]
 - This is the way that our **model** of the phonological mental grammar **represents** the above fact about the world

1. Warm-up: Models in scientific investigation

- A model is an **abstract explanatory device** designed to **account for data**
- Having a model allows us to...
 - **Describe** what we observe
 - **Predict** what else should happen
 - (Attempt to) **explain** why phenomena occur
- If our model is a **good match** with how the world works, we can make a case that properties of the world are **like** properties of our model
 - We check this by **testing hypotheses** on data

1. Warm-up: Models in scientific investigation

- When we propose a model:
 - We propose **entities** that exist in the model
 - We propose ways in which those entities **behave** or **interact**
 - We **explicitly define** those elements or entities and their behaviors, so that it is clear what the model allows, or requires, them to do
- How do these concepts relate to the assigned reading and prep questions from last class?

2. Phonological features as a model

- When we propose a model, we propose
 - **entities**
 - how they **behave** or **interact**
 - how entities and behaviors are **defined**
- How does this relate to our current model of how segments and segment classes are represented by the mental grammar?

2. Phonological features as a model

- How does this relate to our current model?
 - Entities: A set of **features**
 - Definitions: Specify what classes of segments each feature **distinguishes** between
 - Behavior/interaction: Features and combinations of features are **how the mental grammar** represents, and refers to, classes of segments

2. Phonological features as a model

- What are some kinds of **evidence** we can use to test hypotheses/predictions of our feature model?

2. Phonological features as a model

- What are some kinds of **evidence** we can use to test hypotheses/predictions of our feature model?
 - **Phonologically active classes:** Does our model make the right predictions about groups of segments that *pattern together* in languages?
 - **Contrasts:** Does our model make the right predictions about segments that are treated as *distinct mental sound categories* in languages?

2. Phonological features as a model

Group discussion

- Sign your names on the activity handout
- Write down answers for at least three of the features on the list

3. Testing the model

Group discussion | Data set: [Turkish](#)

- Hypothesis: All of these “groups” can be expressed as segment classes by our feature model
- Test the hypothesis:
 - Plural suffix forms
 - Genitive suffix forms
- How does our feature model compare with a model using the “quiz review properties”?

3. Testing the model

Debriefing | Data set: Turkish

- Test the hypothesis:
 - Plural suffix forms
 - Genitive suffix forms
- How does current model compare w/ “quiz” model?
 - Both work equally well for this Turkish data
 - How do their **predictions differ** for what segment classes can be expressed or distinguished in the languages of the world?

4. Some technical points

- How many features do we need to specify when describing a segment class?
 - Be insightful — usually this means as **few** features as possible
 - This helps us determine which features **really matter** for modeling (understanding) a given phenomenon

4. Some technical points

- How do we **write** a multi-feature specification?
 - Use one set of brackets per segment position
 - Technically the model uses the vertical format (see board), but we can use the horizontal format with commas between features:
[COR, +voi, -cont]

5. For next time

- Review our feature model
 - Make use of the resources for practicing!
 - We will practice more with features next time
- Download (print?) SC HW #1 in case of storm trouble