Today's objectives:

- **Choosing URs**
- **Generalizing rules**

Background preparation:

- *Data set – Turkish (focus on the genitive)*
- *Data set – Tohono O'odham*

0. Today's plan

- Checking in: Our phonological model
- Practice with URs and rules: Turkish
- Generalizing rules: Turkish, Tohono O'odham

1. Checking in: Our phonological model

Group discussion

- What kind of **evidence** makes the **strongest** case in favor of including a particular feature in our phonological model?

1. Checking in: Our phonological model

- What kind of **evidence** makes the **strongest** case in favor of including a particular feature in our phonological model?
  (a) The phonetic definition of the feature
  (b) Something else…?
- Some points to consider for this question
  - What kinds of phonological **data** are features intended to describe/predict/explain?
  - How does the grammar **model** "use" features?
  - How do we **evaluate** the success of a model?

1. Checking in: Our phonological model

- From the "Phono Features: Basic Model" handout:

  "The most important criterion is that the property in question be needed to account for some aspect of **phonological behavior** in our data: for example, it is needed to define a phonologically active class, or it is explicitly changed in a phonological process."

- *For more on features:*
  Each of the phonology **books** on reserve for our course presents and discusses a feature model, but they all differ slightly in the details (use with caution)

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

- What are some points to keep in mind when specifying…
  - target?
  - change?
  - environment?

1. Checking in: Our phonological model

- Under what circumstances do we propose a phonological rule in our grammar model?

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- Under what circumstances do we propose a phonological rule in our grammar model?
  - When a surface form is **different** from its UR
  - This shows that the grammar is causing a **phonological process** to occur
  - We model a phonological process as a **rule**
- Some examples:
  - To account for a changing segment in an **alternating morpheme**
  - To account for **allophones** of a phoneme

2. Practice with rules: Morpheme alternations

Review: Choosing the best UR + rule(s) combination

- If Hypothesis 1 (UR=/▬/) is correct:
  - The grammar changes /▬/ to [▰] in ◯
- If Hypothesis 2 (UR=/▰/) is correct:
  - The grammar changes /▰/ to [▬] in ◯
- We need to check:
  - Does either option make better **predictions**?
  - Does either option get expressed more **insightfully** in the model?

2. Practice with rules: Morpheme alternations

Group discussion

- Data set – Turkish
  - Each group will model a **different hypothesis** for the **UR** of the **genitive** suffix
  - Write **rules**, using features, that produce the **other surface forms** of the genitive suffix in the relevant **environments**
  - Make your analysis as **simple** and **insightful** as you can (use features minimally!)
  - Finished early? Try to extend your analysis to the **plural**

2. Practice with rules: Morpheme alternations

Debriefing

- Data set – Turkish
  - Key point in developing these potential analyses: Are you "translating" from segments to feature sets, or are you *thinking in terms of features?*
  - How do the morpheme alternations in this data set provide **evidence** that the phonological grammar makes use of **features**, rather than treating segments as "atoms"?

2. Practice with rules: Morpheme alternations

Debriefing

- Data set – Turkish
  - **Evidence** that the phonological grammar makes use of **features**?
    - **Generalize**! Two rules needed, not three
    - Relationship between genitive and plural alternations
    - (Match between rule environment and rule change? *Does* the model capture this?)

2. Practice with rules: Morpheme alternations

Debriefing

- Data set – Turkish
  - Is it possible to make a case that one UR choice for the genitive suffix is preferable to the others?

3. Practice with rules: Allophones

- When the distribution of two sounds [X] and [Y] in a particular language is **predictable** …

  …we propose that the **grammar** determines whether [X] or [Y] appears in any given surface form

  - [X] and [Y] differ phonetically and featurally
  - But they belong to the **same phoneme** (mental/cognitive sound category)

Phoneme /(?)/ (← How do we decide this?)

Allophones [X] [Y]

3. Practice with rules: Allophones

- What is the connection, in our **model** of phonological grammars, between:
  - phonemes with multiple allophones
  - morphemes that alternate

3. Practice with rules: Allophones

- What is the connection, in our **model** of phonological grammars, between:
  - phonemes with multiple allophones
  - morphemes that alternate
- In both cases, some **phonological process** in the grammar is changing certain sound representations in certain environments
  - How do we model a phonological process?

3. Practice with rules: Allophones

- Once we have identified a phoneme with multiple allophones, how do we write a phonological rule?

3. Practice with rules: Allophones

- Once we have identified a phoneme with multiple allophones, how do we write a phonological rule?
- Similar principles for morpheme alternations!
  - Compare hypotheses for the UR (phoneme label)
  - Does either option make better **predictions**?
  - Does either option get expressed more **insightfully** in the model?
  - The environment of one allophone is sometimes best described as '**elsewhere**', if it can't be stated as a single segment class

3. Practice with rules: Allophones

Group discussion

- Try it for Tohono O'odham | [t̪ d̪ t͡ʃ d͡ʒ]
- Review:
  - What are the relevant environments?
  - Which segments are paired as allophones of the same phoneme?
- Now try: Propose (a) rule(s) for this phenomenon
  - What is the best UR choice, and why?
  - What rule(s) do we propose in our final analysis?

4. Allophones and alternating morphemes

General discussion

- Given a data set showing either
  - allophones in predictable distribution
  - morpheme alternations

  Which is *stronger* evidence for the existence of a phonological process in the grammar? Why?

4. Allophones and alternating morphemes

- Can a single data set show both predictable distribution and alternating morphemes?
  - What do we expect, if a phonological process is maximally general?
  - Try it for Lamba | [ʃ s]

4. Allophones and alternating morphemes

- Can a single data set show both predictable distribution and alternating morphemes?
  - What do we expect, if a phonological process is maximally general?
- If a rule in the phonological grammar refers only to surrounding phonological environments…
  - we predict sounds in predictable / complementary / allophonic distribution
  - we predict morpheme alternations when word-building creates the relevant environment

4. Allophones and alternating morphemes

- A term you saw in the Odden reading: **neutralization**
  - What does this mean?
  - Where have we seen examples?

4. Allophones and alternating morphemes

- A term you saw in the Odden reading: **neutralization**
  - Two sounds are separate phonemes
  - But: In at least one environment, the two sounds have allophones that are identical

/X/	/Y/	
|	/\	
[X]	[X]	[Y]

  - Can we see neutralization when morphemes alternate? When allophones are predictable?

5. Upcoming

- This is the end of our focus on…
  - modeling segments and classes
  - modeling morphemes
- **WU #1** (Th Oct 3)
  - Data set will be posted before Th class — have a look, get started, bring questions!
- Next time: Scientific ethics and the concept of "native speaker" in linguistics
  - Who will read which article?