

Objectives: Test our model of the phonological grammar against...

- **Child phonology**
- **Rule “conspiracies”**

Background preparation:

(no preparation)

0. Today's plan

- Where we are
 - Key research questions in this course
 - Reconsidering rules in our model
- Child-specific phonological processes
 - Can we model them?
 - Is our model insightful?
- Rule “conspiracies”
 - Can we model them?
 - Is our model insightful?
- An alternative: Goal-based phonology

1. Key research questions in this course

Key research questions	Proposals in our model
<ul style="list-style-type: none">• How are segments and sound classes mentally represented?	<ul style="list-style-type: none">• Features
<ul style="list-style-type: none">• How do we account for morpheme alternations and complementary distribution?	<ul style="list-style-type: none">• Phonological processes take UR and produce SR• Rules are how we model phonological processes
<ul style="list-style-type: none">• Are there larger units beyond segments?	<ul style="list-style-type: none">• Syllable structure• Rules are how we model assigning segments to syllables

- Let's **test some predictions** of how rules contribute to our model

2. Child-specific phonological processes

- We assume that **children's URs**, stored in their mental lexicon, are (typically) the **same** as adults' URs
 - What is some evidence for this?

2. Child-specific phonological processes

- We assume that **children's URs** are **same** as adults'
 - **Are children's surface forms** always the same as adult surface forms?

Group discussion

- Data set: [Consonant patterns in child phonology](#), (1)
 - What systematic patterns can we find in this child's productions that differ from adults?
 - Can we represent this child's grammar using the tools of our phonological grammar model?

2. Child-specific phonological processes

Debriefing

- Data set: [Consonant patterns in child phonology](#), (1)
 - What systematic patterns can we find in this child's productions that differ from adults?
 - Can we represent this child's grammar using the tools of our phonological grammar model?
- What are the **implications** for how the child's **grammar** differs from the adult grammar?
 - Is there anything surprising about this?

2. Child-specific phonological processes

- If a child has an adult-like UR, but a different SR from adults, what do we have to conclude about the child's mental grammar **in our current model**?
 - When SR differs from UR, this means that a phonological rule has applied
 - So we have to conclude that a child's developing grammar has **more rules** than an adult's grammar — the child's grammar appears to be **more complex**
 - Comments/thoughts?

2. Child-specific phonological processes

- Note that this conclusion only follows if it is the mental grammar, rather than a motor-control (phonetic) issue, causing the child-specific SR
 - In some cases, it can be hard to tell the two possibilities apart
 - But there are other cases where it is clear that the child can produce the sound in question
 - Look at adult /s/ in (2) of the data set:
 - child turns it into [d] in onsets
 - child produces [s] itself in codas
 - = producing [s] is not itself a problem

3. Rule conspiracies

- DE: [Dutch syllables](#)
 - How many **different** phonological rules do we see here?

3. Rule conspiracies

- DE: [Dutch syllables](#)
 - How many **different** phonological rules do we see here?
- This is a complex set of rules, which don't have much in common except their environments
- Do their *outcomes* have anything in common?
 - Consider this question from the perspective of **preferred syllable structure** across languages

4. Some problems with rule-based phonology

Group discussion

- What other **problems** or **questions** or **concerns** have we been noticing about **phonological rules**?

4. Some problems with rule-based phonology

- Summary of some previous concerns
 - Our phonological model of syllable structure has restrictions that *limit* where syllable-building rules can *apply*
 - But how does this actually work? What kind of operation can *block a rule* from applying?
 - Why are (only?) syllable-building rules “persistent”?
 - Why is Nucleus Rule *always* before Coda Rule?
 - Rule ordering is generally language-specific

4. Some problems with rule-based phonology

- New concerns we uncovered today
 - It seems counterintuitive that young children should need a *more* complex grammar (*more* rules) to reach the **goal** of *simpler* surface forms
 - Why are there *conspiracies* — multiple, unrelated rules that seem to be aiming for the same **goal**?
 - And what does it mean that the **goal** is sometimes enforced and sometimes not (as in the Dutch syllables problem)?

5. Phonology with “goals” instead of rules

- An alternative model of the mental grammar has **no phonological rules**
- Instead, we can propose:
 - A universal set of **goals** that all languages share
 - A method for each language to **prioritize** conflicting goals (languages can be different)
- Under this approach, what we need to propose in analyzing a language’s phonology is not a set of rules, but a **prioritization of the universal goals**

5. Phonology with “goals” instead of rules

- The goal-based phonological model we will pursue is known as **Optimality Theory (OT)**
- Handout - [Phonology with 'goals': Optimality Theory](#)