Today's topics:

- **Phonetics review, part 1**
- **Phonology as science**

Background preparation (in progress):

- Phonetics review handout
- See also review links from Daily Syllabus page

0. Today's objectives

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

- Begin using **IPA symbols** to **transcribe** the segments (speech sounds) of English

- Begin using **sound properties** to **describe** similarities and differences between segments

- Make an **argument** that the phonological (mental) grammar is sensitive to **sound properties**

- Explain the goals of research in phonology from the perspective of **natural scientific investigation**

0. Course information

- **Checking in** on course structure and technology

    - Any questions or problems with website or Canvas?

- **New** to the class?

    - See course web site (from "Pages" in Canvas)
        - Daily syllabus page and Schedule page
        - Course info & policies document (syllabus)

1. Warm-up and context

- What is the fundamental **difference** between **phonetics** and **phonology**?

- **Phonetics:** **physical** aspects of speech sounds

- **Phonology:** **mental** / **cognitive** aspects of speech sounds — **mental grammar**!

  - How are speech sounds mentally **represented**?
  - What mental **principles** or **patterns** govern the ways sounds are combined into larger units?

1. Warm-up and context

- Phonology aims to understand phenomena such as:
    - Sound **patterns** we observe in languages
    - **Native-speaker behavior** (judgments, productivity)
    - **Transfer** effects ("foreign accent")
    - Children's **acquisition** of phonology

1. Warm-up and context

- In order to look for patterns in sounds or patterns in speaker behavior, we need to **begin** by knowing:

  - What **sounds** (common) IPA **symbols** stand for
  - The **physical properties** of sounds

- Can you look at a set of sounds and quickly see...

  - what properties they **share**?
  - what properties **distinguish** them?

1. Warm-up and context

- The single most useful thing you can do now to set yourself up for success in this course is to know this information well so you can use it QUICKLY

  - Today's discussion is a chance to practice!
  - We will review Ling 101 phonetics concepts systematically next time

2. Tongue twisters, analyzed

Group activity

- Each group:
  - Write down a "hard" tongue twister
  - Work together to transcribe it in IPA
    - *Don't look things up* — try to remember!
    - If you aren't sure of the right IPA symbols, use a "?" or make a guess

  - **Which parts** of your tongue twister (sounds or sound combinations) make it so hard to say?

2. Tongue twisters, analyzed

Group activity

- Each group:
  - Write your transcription on the blackboard / whiteboards

Check-in

- Each group:

  - Which parts of your tongue twister (sounds or sound combinations) make it so hard to say?

- As a class:

  - Can we **form hypotheses** about what factor(s) make a tongue twister hard?

2. Tongue twisters, analyzed

- What makes tongue twisters hard?

  One key factor:

  - **Similar sounds** (near each other, or in an alternating or quasi-alternating pattern)

- **But what makes two speech sounds "similar"?**

2. Tongue twisters, analyzed

Group activity

- Each group:
  - Identify one or more sets of **similar sounds** in your tongue twister that cause difficulty
  - Use **sound properties** ("voiced", etc.) to describe what the sounds in each set have in common
    - *Don't look things up* — try to remember!

3. A mental grammar for speech sounds

- The tongue-twister activity shows us that:
  - There is a **mental** aspect to speech sound patterns (tongue twisters can be "brain twisters")
    → A role for **mental grammar**

  - We need to look at the **properties** of individual speech sounds to understand their patterns
    → The mental grammar is **sensitive** to not just speech sounds, but their **properties**

4. Phonology as natural science

- This course has the Natural Scientific Investigation focus capacity
  - Why do you think a course in phonology meets the criteria for NATSCI?

4. Phonology as natural science

- Excerpts from NATSCI Learning Outcomes

  1. ... use scientific knowledge, logic, and imagination to **construct and justify scientific claims** about **naturally occurring phenomena** ...

     What are the "naturally occurring phenomena"?

4. Phonology as natural science

- Excerpts from NATSCI Learning Outcomes

  2. Analyze and apply **processes of scientific inquiry** … These include

     - generating and testing **hypotheses** or **theories** pertaining to the **natural world**

     - building and justifying **arguments** and **explanations**

     - **communicating** and **defending** conclusions

What hypotheses have we generated or tested in today's discussion?

4. Phonology as natural science

- Excerpts from NATSCI Learning Outcomes

  4. Identify, assess, and make informed decisions about **ethical issues** at the intersections of the natural sciences and society

  To consider on your own (for now): What are some ethical issues that arise in phonology, or in linguistics research more generally?

  - We will discuss several ethics issues during the semester

4. Phonology as natural science

- Next class: We will talk about what it means to build a **model** of **data** in the process of scientific inquiry

  - So far: Our **data** includes phonetic properties of speech sounds

  - A core question in phonology: How can we build a **model** of the speaker's **mental grammar** of speech sounds?

5. For next time

- On Monday, we will review LING 101 phonetic symbols and sound properties
  - Review the assigned handout carefully to prepare

- The first preparation questions assignment in Canvas is **PQ 01.12**, due **M Jan 12 by 11am**
  - Course info reminder: What are prep questions?