

LING-UA 1 *Language*
Phonology I, II

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Week 9 3:30PM, 3 November 2025

Logistics

- ▶ **HW 5:** Email me if grades are wonky
- ▶ **HW 6:** Due tonight @ 10PM!
- ▶ **Exam 2**
 - ▶ Tuesday, 11 Nov, 2–3:15PM (next week)
 - ▶ Same classroom as last time (A–J here, K–Z in SILV 401)
 - ▶ Bring your laptop! Exam is a Brightspace Quiz
 - ▶ You will be given IPA charts
 - ▶ **Study Guide** on Brightspace/my website
 - ▶ **Study Session** on Monday after recitation (4:45–7PM)

Questions from HW/Lecture?

Phonotactics

Phonotactic constraint = rules on where sounds can be

- ▶ English: No initial [ŋ], no final lax vowel (except [ə])
- ▶ Arabic: No initial consonant clusters, 1st & 2nd root consonants must be different
- ▶ → differ between languages

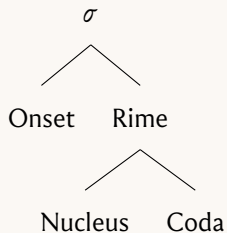
Syllables

Syllables are the minimal unit of rhythm

- ▶ Your intuition is (probably) correct on what they are, extensionally
 - ▶ “what you can clap to”
- ▶ formally, defined based on peaks & troughs of *sonority*
 - ▶ ($\approx$ relative loudness, controlling for pitch, stress, etc)
 - ▶ stop < fricative < nasal < liquid < glide < vowel

Syllables

Syllables also have internal structure:



Phonemes & Allophones

- ▶ Sounds exist at different levels of cognitive realness
 - ▶ In English, compare $t \sim d$ vs $t \sim t^h$
- ▶ **Phonemes** are the distinct sounds in the mind
 - ▶ Can be used to minimally distinguish forms: $/bæt/ \sim /bæd/$
- ▶ **Allophones** (of a phoneme) are articulatory productions of these sounds
 - ▶ $/st\Lambda n/ \rightarrow [st\Lambda n], /t\Lambda n/ \rightarrow [t^h\Lambda n]$

Phonemes & Allophones

- ▶ **Phonemes** are...

- ▶ distinguishable by minimal pairs
- ▶ not predictable based on environment
- ▶ “intuitively” distinct (mostly)
- ▶ written with slashes: /t/

- ▶ **Allophones** are...

- ▶ not distinguishable by minimal pairs
- ▶ predictable based on surrounding sounds
- ▶ “intuitively” the “same sound” (mostly)
- ▶ written with square braces: [t]

Allophones

Allophones have rules describing when they appear:

- ▶ In English, [t^h] appears word-initially; otherwise [t]
- ▶ These rules are *exclusive*
- ▶ → allophones appear in **complementary distribution** with one another
- ▶ Full morphemes with allophonic variation are **allomorphs**
[a] ~ [an]

Example

Consider the phoneme /t/ in English

- ▶ [t^h] initial and stressed: [t^hʌn]
- ▶ [ʔ] before syllabic consonant: [b^hʌʔn]
- ▶ [ɾ] intervocalically before unstressed syl: [raɪɾr]
- ▶ [Ø] finally
- ▶ [t] elsewhere (gives phoneme its name)

What drives allophony?

Articulatory realities motivate changes in sound realization

- ▶ **Coarticulation** influences how adjacent sounds are produced
- ▶ **Assimilation**: make sounds *more* similar
- ▶ **Dissimilation**: make sounds *less* similar

Example Problem: English Nasals

Word-internal clusters:

[mb]/[mp]	[ŋg]/[ŋk]	[nd]/[nt]
somber	anger	Andy
rhomboid	hunger	mendacious
amber	linger	condition
pamper	ankle	contact
whimper	sprinkle	tentative
thumper	cantankerous	sentence

Data from Rydzewski (2023)

Example Problem: English Nasals

Negative prefixes:

transitive	in+transitive [n + t]
possible	im+possible [m + p]
competent	in+competent [ŋ + k]
audible	in+audible [n + ?]

Data from Rydzewski (2023)

Example Problem: English Nasals

Evidence from fast speech

- | | | | | | |
|-----------|-------------------|-----------|-----------------------|-----------|--------------------|
| a. | ten cooks [ŋ + k] | b. | team cooking [m + k] | c. | sing Carol [ŋ + k] |
| | ten boys [m + b] | | team building [m + b] | | sing boys [ŋ + b] |
| | ten dogs [n + d] | | team dancing [m + d] | | sing twice [ŋ + t] |

Data from Rydzewski (2023)

Example Problem: English Nasal

- ▶ What, in general, seems to happen to nasal place?
- ▶ How many nasal phonemes does English have? What are they?
- ▶ How is /n/ realized in English?

References

Rydzewski, Paweł. 2023. Positional faithfulness and nasal assimilation in English. *Studia Linguistica Universitatis Iagellonicae Cracoviensis* 140. 267–285.
<https://doi.org/10.4467/20834624s1.23.014.18636>.