

## Phonotactics (*âm pháp*)

Cơ sở âm vị học và ngữ âm học

13/7/12

## Review: classification of segments

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- Consonants are conventionally described using the labels **voice + place + manner**
- Vowels are conventionally described using the labels **height + backness + rounding**

## Phonetic classification

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- Why classify segments at all?
- **Short answer:** because sound systems seem to pay attention to segments.

## Segment sequencing in English

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- Most CC clusters are not allowed at the beginnings of words in English
  - ▶ (e.g. \*mk-, \*dp-)
  - ▶ But...which clusters **are** allowed?
  - ▶ What about CCC clusters?

## Segment sequencing in English

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- Which vowels can occur in CV words in English?
- Which cannot?

## Segment sequencing in Vietnamese

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- How many consonants can occur at the start of a word in Vietnamese?
- Which vowels can occur in CV words in Vietnamese?
- Which cannot?

## Segment sequencing in English

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- These classes wouldn't emerge from a purely acoustic description of sounds
- But they are clearly relevant for describing languages.
- The rules governing licit (allowed) segment combinations are called **phonotactics**.

## Language-specific phonotactics

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Hungarian allows words with up to **five** consecutive vowels

[fiɔie:i]

'his son's things'

Czech allows words without any vowels at all!

[smɾt]

'death'

## Language-specific phonotactics

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Maori allows only **one** consonant at the beginning of a word...

[wahine]

‘woman’

...while Georgian allows **very** long word-initial clusters

[gvbrdgvni]

‘you tear us apart’

## Nativisation

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- How do we learn the phonotactics of a given language?
- Phonotactic rules are most visible when words are borrowed from other languages (*từ vay mượn*).
- If the borrowing doesn't conform to the phonotactics, it will be modified.

## Nativisation

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English	Japanese	gloss
[kɹi:m]	<i>kuriimu</i>	cream
[tæksi]	<i>takushii</i>	taxi
[bæθ]	<i>basu</i>	bath
[bʌs]	<i>basu</i>	bus
[θɹɪl]	<i>suriru</i>	thrill
['sɜːvɪs]	<i>saabisu</i>	service
['krɪsməs]	<i>kurisumasu</i>	Christmas

What happens to [s] and [θ]?

## Nativisation

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English	Vietnamese	gloss
[dʒemz]	[zem]	<i>James</i>
[obama]	[obama]	<i>Obama</i>
[ɪntəːnɛt]	[ɪntɛnɛt]	<i>Internet</i>
[wɪθ]	[wɪt]	<i>with</i>
[tɛnɪs]	[tɛnɪt]	<i>tennis</i>

## Nativisation

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English	Hawai'ian	gloss
biə	<i>pia</i>	beer
flaʊə	<i>palaoa</i>	flour
səʊp	<i>kopa</i>	soap
kɪlt	<i>kiliki</i>	kilt
zəʊdiak	<i>kokiaka</i>	zodiac

- What happens to the English onsets?
- What do they have in common?

## Accidental gaps

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- All language have phonotactic restrictions on possible words (*quy luật về sự phân bố của các âm đoạn*)
- But not all possible words ARE words: these are called **accidental gaps**
- As opposed to **systematic gaps**, which are 'truly impossible' words

## Gaps in Vietnamese

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Accidental or systematic gaps?

1. sãch
2. ngắch
3. spắkt
4. xás
5. nhưởng
6. khướng
7. tắt
8. khườkh
9. tiềv

Can you think of some more?

## Gaps in English

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Accidental or systematic gaps?

1. [ founəlaɪz ]
2. [ grɪkt ]
3. [ splɪk ]
4. [ ptɒp ]
5. [ ndaɪsfkləp ]
6. [ snu:l ]
7. [ tlə ]
8. [ ksɪ ]
9. [ gnɛvd ]

## Consonant clusters

<i>initial</i>	<i>medial</i>
* [ptɒp]	[laptɒp]
* [ksɪ]	[ɛksɪkjʊt]
* [ndais]	[mɜ:tʃndais]
* [tlə]	[atləs]

- Structural context is important.
- Not just “X is (not) OK” but “X is (not) OK in this context”.

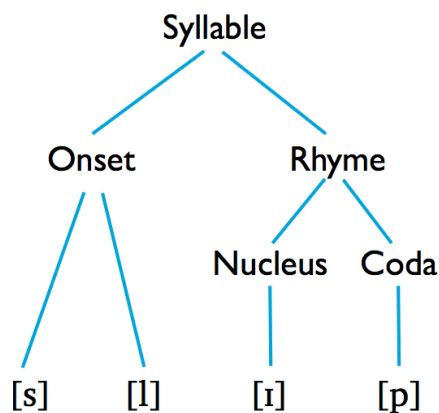
## Consonant clusters

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## Syllable structure

- Only **nucleus** is obligatory.
- Syllables without codas are **open**.



## Syllabification

The basic principle of syllabification is **onset maximisation**.

1. Find the nucleus
2. Create the longest legal word-initial onset
3. Anything left goes in the coda.

## Syllable complexity

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- The core syllable type is CV
- Every language includes CV syllables;
- They are the first syllable type acquired by children.

## Syllable complexity

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- Some languages (e.g. Polynesian languages) allow **only** CV syllables.
- Others (e.g. Germanic, Caucasian) build complex onsets, codas, and/or nuclei.
- Sounds permitted in the onset (nucleus, coda...) of one language may not be permitted in another.

## English monosyllables

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illegal

legal

bɪ	bɪ.tə	<i>bitter</i>
bɑ	bɑ.tə	<i>batter</i>
bɛ	bɛ.li	<i>belly</i>
bɒ	bɒ.di	<i>body</i>

- Here the rules make reference to **words** instead of syllables.

## Conflict resolution

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- On the one hand, speakers try to remain faithful to the original form of the word.
- On the other, they try to avoid violating the phonotactics of their language.
- **Optimality Theory** is an area of phonological research that has focused on resolving conflicts like these.

## Summary

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- **Phonotactics** is the study of licit (allowable) sound combinations in language.
- We can observe phonotactic **rules** in the nativisation of foreign vocabulary.
- Phonology operates over multiple types of structures at the levels of **segments**, **syllables** and **words**.