

Phonotactics (*âm pháp*)

Cơ sở âm vị học và ngữ âm học

13/7/12

Review: classification of segments

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

Phonetic classification

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

Segment sequencing in English

- 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

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

Segment sequencing in Vietnamese

- 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

- 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

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

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

- 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

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
['kɹɪs,məs]	<i>kurisumasu</i>	Christmas

What happens to [s] and [θ]?

Nativisation

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

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

- 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

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

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”.

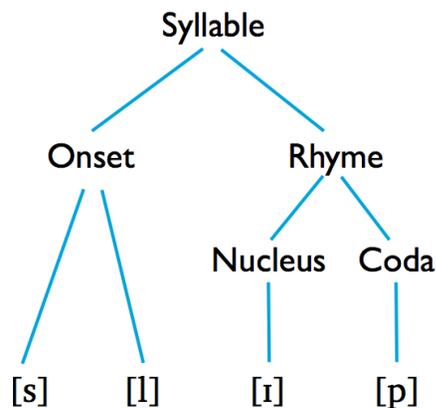
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Syllable structure

- 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

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

Syllable complexity

- 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

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

- 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

- **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**.