Theoretical Phonology: Suprasegmental Phonology Syllables

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Why do we need the *Syllable*?

- Phonological rules are expressed and interpreted in a better way if we refer to the syllable.
- The syllable explains phonotatic constraints.

Children's early utterances

[pʰə]	ball	[11 months]
[pæ]	book	[11 months]
[kə]	kitty	[11 months]
[bæ˞]	bird	[15 months]
[gɛ˞]	cow	[15 months]
[kʌ˞]	girl	[15 months]
[pæ]	baby	[16 months]
[k'akʰi]	cookie	[16 months]
[nʌmæ]	Simon	[16 months]

(examples from Roca & Johnson 1999)

Language acquisition and syllables

- Children use sequences of consonants and vowels.
- Adults use more complex structures

Japanese

kurisimasu	Christmas
tekisuto	text
kurabu	club
doresu	dress
gurasu	glass

(examples from Roca & Johnson 1999)

- Japanese use sequences of consonants and vowels.
- English use more complex structures

- Segments need to be members of a SYLLABLE if they are to be pronounced.

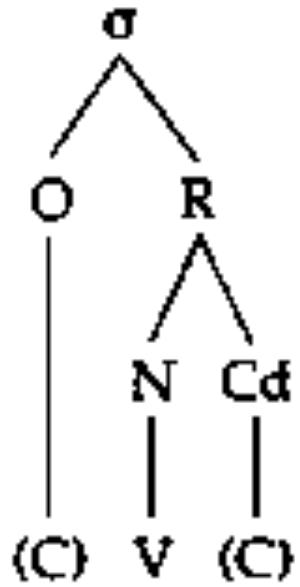
Phonotatics

- Phonotatics refer to the distribution of sounds and sound sequences at various points (initial, medial, final) in the phonological word or phrase.

- Phonotactics follow form the speakers internalised grammar.

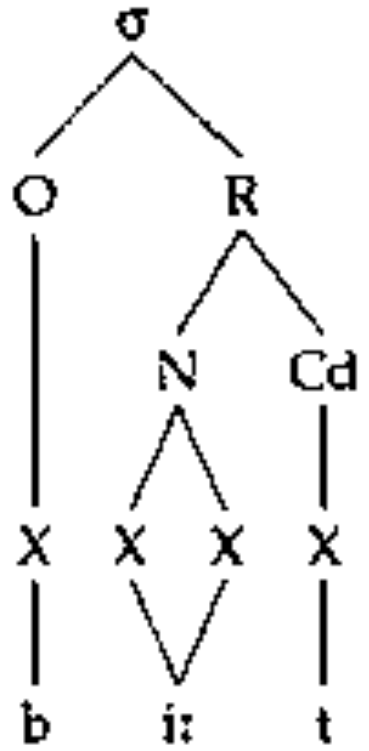
For example, French and Greek speakers know that *ps* is perfectly grammatical combination at the beginning of the phonological word whereas this combination is not permitted in English.

The Nature of Syllable



Long and Short Syllables

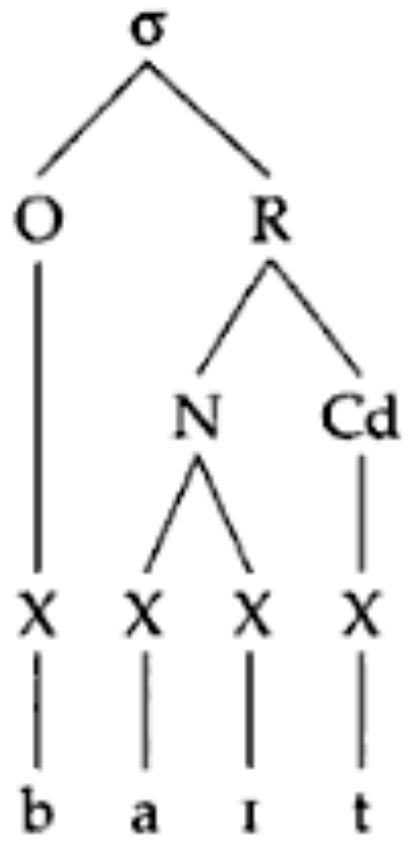
Vowel



[bead]

Long and Short Syllables

Diphthong



A diphthong is equivalent to a pair of vowels, both in the melody and in the skeleton.

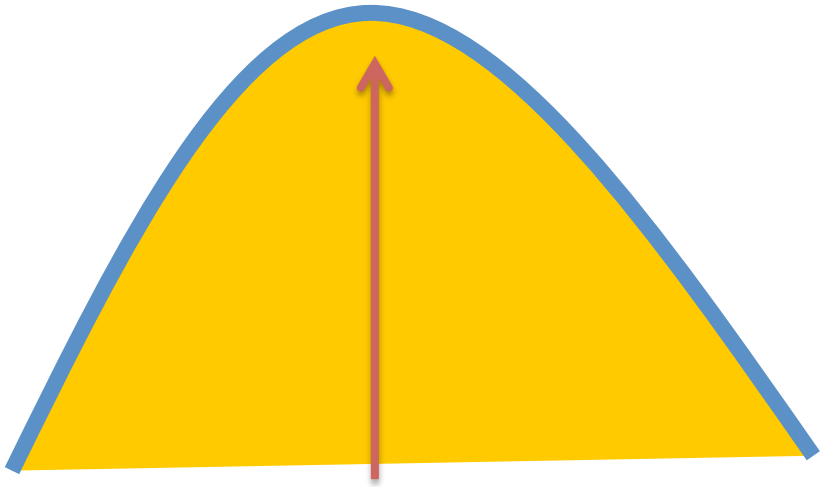
Sonority and the Syllable

Segments are arranged within the syllable in such a way that sonority goes first up and down.

Vowels have more sonority than consonants

The sonority hierarchy

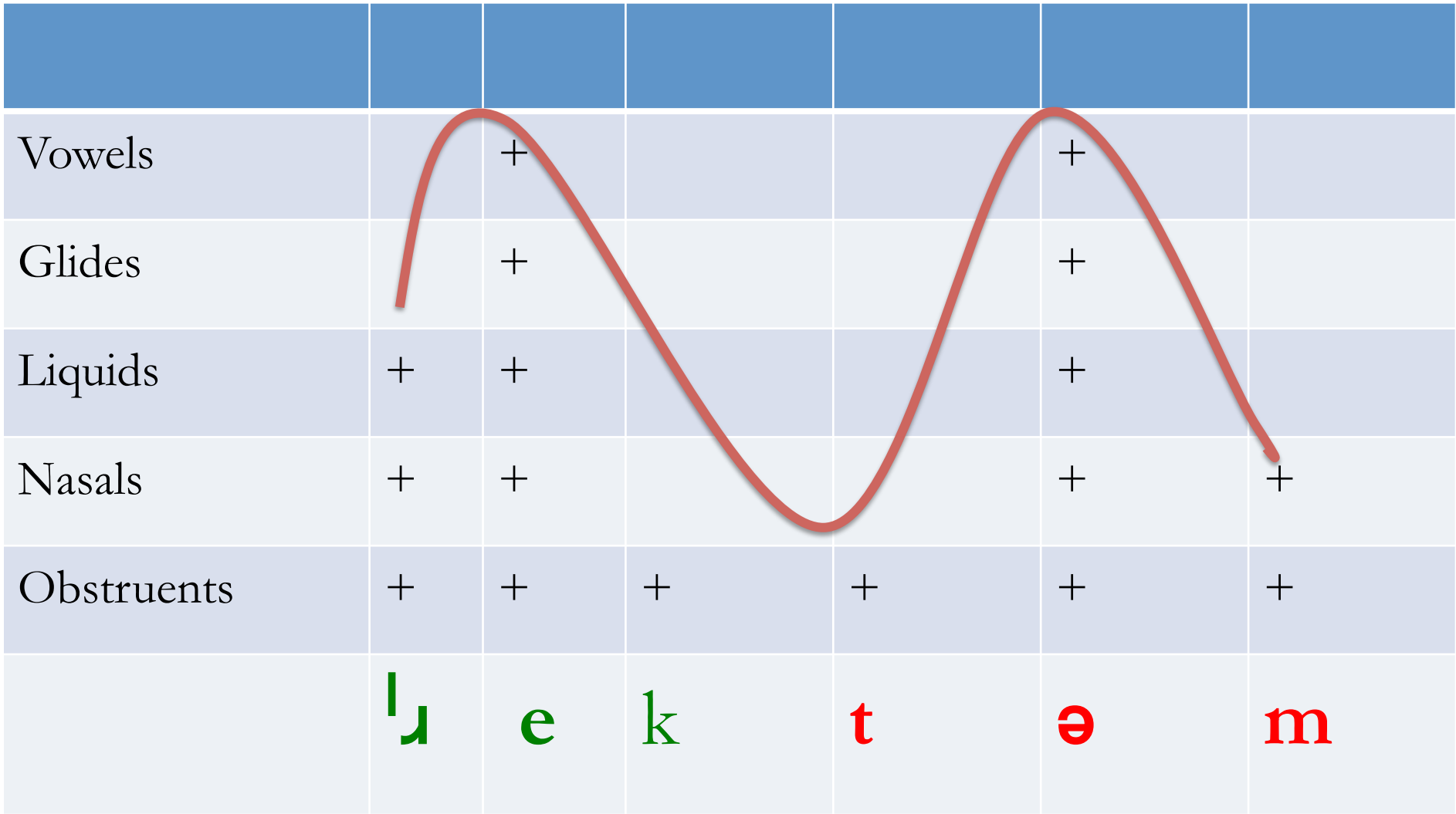
- 5 Vowels Most sonorous
- 4. Glides
- 3. Liquids
- 2. Nasals
- 1. Obstruents Least sonorous



Consonant **Vowel** Consonant

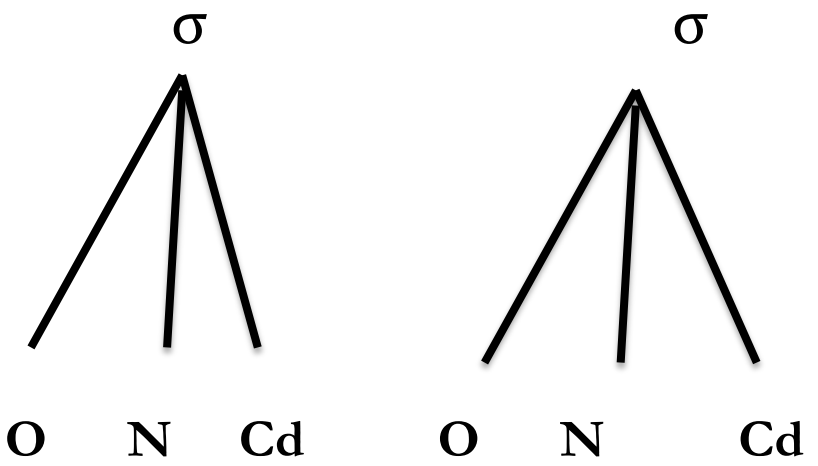
Sonority Scale for a CVC syllable

Sonority Profile



Vowels		+			+	
Glides		+			+	
Liquids	+	+			+	
Nasals	+	+			+	+
Obstruents	+	+	+	+	+	+
	ɹ	e	k	t	ə	m

Sonority Profile



ˈɹ e k . t ə m

Nucleus

- Is the only obligatory constituent of the syllable: CV VC C CVC.
- It is the tone- or stress- bearing element.
- All languages have at least one rule that assigns a vowel to the Nucleus and a consonant to the onset position.

Onsets

- The CV syllable is the CORE syllable

English Onsets: 2 consonants

	w	y	r	l	m	n	p	t	k
p	-	+	+	+	-	-	-	-	-
t	+	+	+	-	-	-	-	-	-
k	+	+	+	+	-	-	-	-	-
b	-	+	+	+	-	-	-	-	-
d	+	+	+	-	-	-	-	-	-
g	+	+	+	+	-	-	-	-	-
f		+	+	+	-	-	-	-	-
θ	+	+	+	-	-	-	-	-	-
ʃ	-	-	+	-	-	-	-	-	-
s	+	+	-	+	+	+	+	+	+

English Onsets: 3 consonants

	w	y	r	l	m	n
sp	-	+	+	+	-	-
st	-	+	+	-	-	-
sk	+	+	+	+	-	-

SONORITY SEQUENCING

The sonority profile of the syllable must rise until it peaks, and then falls.

This explains why we only find the following consonant clusters:

[pl]	[bl]	[fl]		[sl]	[kl]	[gl]		
[pɹ]	[bɹ]	[fɹ]	[θɹ]	[tɹ]	[dɹ]	[ʃɹ]	[kɹ]	[gɹ]

***[lp] *[lb] *[lf] clusters do not exist**

Minimal Sonority Distance

stop + fricative such as [ps] clusters are not allowed in English (but in Greek [psɔˈmi] is OK).

stop + nasal clusters such as [pn] are not allowed in English (but in Greek [pnɔˈi] is OK).

Minimal Sonority Distance: you need a certain minimum of sonority difference between the segments of complex syllabic constituents (onsets or codas)

stop + liquid such as [pl] in play is OK!

Codas

captain	[ˈkæptɪn]
active	[ˈæktɪv]
septic	[ˈsɛptɪk]
rustic	[ˈrʌstɪk]
kaftan	[ˈkæftæn]
rectum	[ˈɹɛktəm]

- helm CVCC
- help CVCC
- elf VCC
- triumph CCVVCCC
- hemp CVCC

Rime

Words rime when they end in the same Nucleus and Coda:

Such as in

debt | fret | jet | met | net | nett | pet | ret | stet | threat | vet | whet | yet | abet | barbette | barrette | beget | brunet | brunette | cadet | cassette | cornet | corvette | duet | forget | gazette | georgette | octet | pipette | preset |

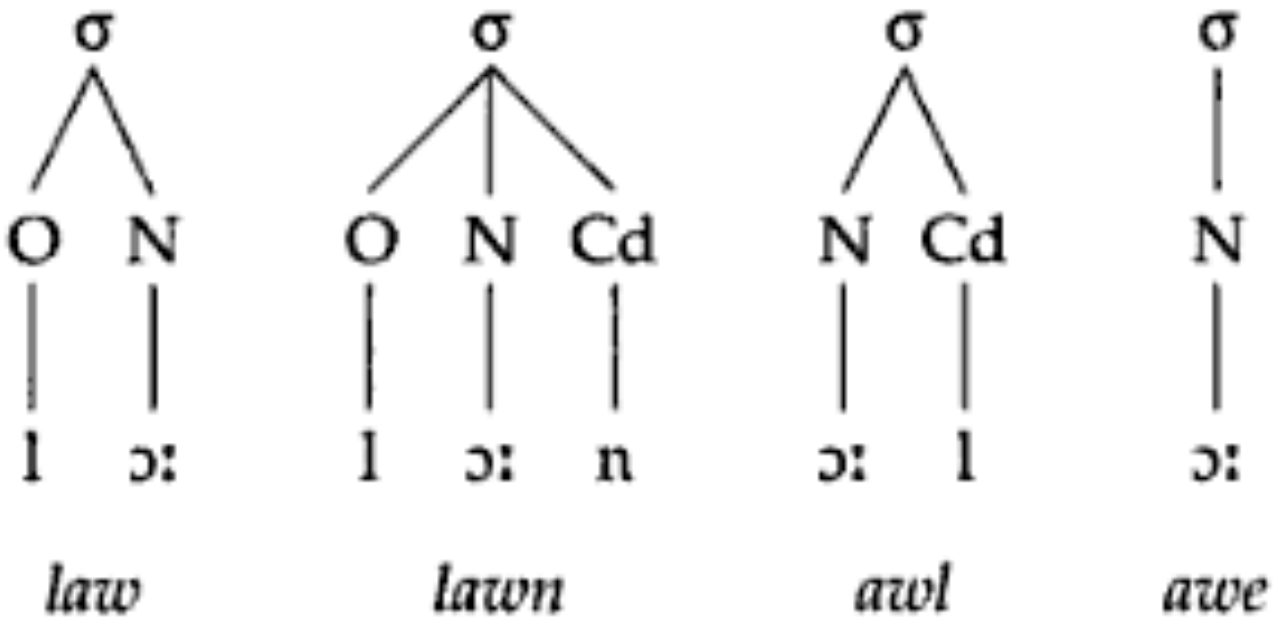
Basic Syllable Typology

ON onset & nucleus

ONCd onset, nucleus & coda

NCd nucleus & coda

N nucleus



From Roca & Johnson, (1999:246)

- The presence of a more complex type in any one language pressupposes the presence of its simple counter-part(s)
- Syllable-related historical change tends to go in the direction of greater syllable simplicity.
- In languages with a rich range of syllable patterns, simpler syllables are more frequent, both statistically, in the inventory, and dynamically, in actual language use.

Syllables and languages

CV only	Senufo (W. Africa)	Hua (Papua New Guinea)
CV, V	Maori (New Zealand)	Cayuvana (Bolivia)
CV, CVC	Klamath (N. America)	Arabic (Middle East, N. Africa)
CV, V, CVC, VC	French, Finnish, Spanish, English	

Resyllabification

- ton ikociri → nikociri
- tin estia → nistça

Complex Onsets

- How do we represent words such as plot, blot, flag, clock, trap etc. ?