

Ling 103  
 Transcription of English  
 Syllable Structure

**General American English Consonants and Glides**

	<i>labial</i>	<i>coronal</i>	<i>dorsal</i>	<i>laryngeal</i>
<i>voiceless stop</i>	p	t	k	
<i>voiced stop</i>	b	d	g	
<i>voiceless affricate</i>		č = tʃ		
<i>voiced affricate</i>		ǰ = dʒ		
<i>voiceless fricative</i>	f	θ, s, š = ʃ		
<i>voiced fricative</i>	v	ð, z, ž = ʒ		
<i>liquid sonorant</i>		l r		
<i>nasal sonorant</i>	m	n	ŋ	
<i>glide sonorant</i>	w	y = j		h

Stops, fricatives and affricates together form the class of **obstruents**, the segments in which the flow of air is obstructed enough to cause a rise in air pressure inside the oral cavity. The liquids, nasals and glides (and, technically also vowels) form the class of **sonorants**: segments in which air pressure inside and outside the mouth are about the same (air is flowing freely).

In English, all sonorants are **voiced** (vocal cords vibrate during the production of the segment). Obstruents can be **voiced** or **voiceless**.

Segments where air flows out of the *mouth* in a constant stream are **continuants**. Vowels, glides and liquids are continuants. All other sounds are **noncontinuants** (including nasals, where air flows out of the *nose*).

## General American English vowels

	<i>front</i>	<i>central/back</i>
<i>high tense</i>	i	<u>ɪ</u>
<i>high lax</i>	ɪ	<u>ʊ</u>
<i>mid tense</i>	eɪ	ɜ˞ <u>oʊ</u>
<i>mid lax</i>	ɛ	ʌ ə <u>ɔ</u>
<i>low</i>	æ	ɑ
<i>diphthongs</i>	eɪ	<u>ɔɪ</u> <u>ɔʊ</u> ɑɪ <u>aʊ</u>

The underlined vowels are **rounded**.

To indicate that a syllable has primary stress we write / ' / before it.

To indicate that a syllable has secondary stress we write / , / before it.

Stress indications on monosyllabic words are often omitted.

### Examples

/pɪt/	peat	/nɔ/	gnaw
/kjuːb/	cube	/wɪθ/	with
/dɪɡ/	dig	/jɑːd/	yard
/tʃeɪs/	chase	/sɔːd/	sword
/dʒɔːv/	Jove	/wɜ˞d/	word
/θɪŋ/	thing	/θaɪ/	thigh
/foʊn/	phone	/ðaɪ/	thy
/ðoʊz/	those	/ðəʊ/	thou
/led/	led	/paʊns/	pounce
/ræp/	rap	/hoɪst/	hoist
/mɑːm/	mom	/pɜ˞ˈtɜ˞b/	perturb
/hʌb/	hub	/'tɜ˞nɜ˞/	turner
/'kænədə/	Canada	/pʊt/	put
/bəˈnænə/	banana	/pʌt/	putt
/'pænə,mɔ/	Panama	/kɔɪl/	coil
/'meɪʒɜ˞/	measure	/'ʃaʊɜ˞/	shower

## Notes on Consonant and Glides

The letter *c* in English spelling represents either the segment /k/ as in /keɪk/ *cake* or the segment /s/ as in /peɪs/ *pace*, or, in *ch*, the segment /tʃ/ as in /tʃeɪs/ *chase*. Do *not* transcribe /c/ — this symbol represents a sound which does not occur in English!

The letters *th* in English spelling represent either /θ/ as in *thing* /θɪŋ/ or /ð/ as in *those* /ðoʊz/.

The letters *ng* in English spelling represent the segment /ŋ/ as in /bæŋ/ *bang* and sometimes the combination of segments /ŋg/ as in /fɪŋgɜː/ *finger*.

## Notes on Vowels

Conventional terms such as 'long E' or 'long I' do not reflect modern pronunciations in English but those of pre-Modern English. English has undergone a *vowel shift* which has altered the pronunciation of nearly all the vowels, so that spelling reflects older pronunciations.

Conventional (Spelling) Description	Phonological Representation	Example	
'long' I	aɪ	bait	<i>bite</i>
'long' E	i	bit	<i>beat</i>
'long' A	eɪ	bert	<i>bait</i>
'long' U	u or ju	mjuːzɪk tun	<i>music</i> <i>tune</i>
'long' O	oʊ	boʊn	<i>bone</i>
'short' I	ɪ	ʧɪp	<i>chip</i>
'short' E	ɛ	dɛt	<i>debt</i>
'short' A	æ	sæk	<i>sack</i>
'short' U	ʊ or ʌ	dʌk	<i>duck</i>
'short' O	ɑ or ɔ	mɑk sɔŋ	<i>mock</i> <i>song</i>

Note: Some speakers, mostly from west of the Mississippi and from Canada, do not distinguish /ɑ/ and /ɔ/.

In many instances the vowel /ə/ and the vowel /ʌ/ have nearly identical qualities. It is customary to write /ʌ/ only for stressed vowels and /ə/ only for stressless vowels:

/ˈrʌʃə/                  *Russia*  
/kəˈnʌndrəm/        *conundrum*

### **Vowels before /r/**

Standard American English has only a few vowels which can occur before /r/:

Sequence	Example
/ɑr/	/bɑr/ <i>bar</i>
/ɔr/	/bɔr/ <i>bore</i>

Some vowels simply can never occur before /r/ in most dialects of American English (some dialects allow these sequences only if the vowel and the /r/ are in separate syllables):

\*ɪr, \*ɛr, \*æɪr, \*ɔr, \*ur, \*or, \*ʌr

A non-low lax vowel (except /ɔ/) followed by /r/ in the same syllable (and, in some dialects, regardless of the syllable boundary), is usually converted to an r-colored ('rhotacized') schwa which is transcribed /ɜr/. One can think of this as the 'syllabic' version of a consonantal /r/ — the form that the segment /r/ takes when it functions as the nucleus of a syllable:

/fɜr/             *fir, fur, Fer(dinand)*

## Syllables and Syllabification

Syllable structure

Every segment of speech has a particular value of **sonority**, the relative amount of acoustic energy which will exit the mouth (or nose) when the articulators are configured to produce that segment.

Although we can measure acoustic energy physically, languages classify segments into groups based on their sonority, rather than making use of particular measured physical quantities.

**Sonority Scale** (abbreviated)

obstruents << sonorant consonants << glides << vowels

**OBSTRUENTS:** consonant sounds in which air flow is either:

a. *completely stopped* /t d p b k g tʃ dʒ/

or

b. impeded enough to create *friction noise* /f v s z θ ð ʒ/

**SONORANT CONSONANTS:**

Consonants in which air flows freely (without friction)

a. out of the mouth: /l r h/

b. out of the nose: /m n ŋ/

**HIGH VOWELS/GLIDES:** sounds in which the body of the tongue is raised in the mouth, but air is passing freely across: [j i w u]

**NONHIGH VOWELS:** sounds with the greatest sonority: air flows freely out of the mouth: [a e o u æ ε ɔ α ə ʌ]

## Meanings of the phonetic symbols

### vowels

[ɑ]	h <u>o</u> t
[eɪ]	w <u>a</u> de
[oʊ]	b <u>o</u> at
[ɜː]	b <u>ir</u> d
[æ]	b <u>a</u> t
[ɛ]	b <u>e</u> t
[ɔː]	b <u>o</u> re
[ɔɪ]	b <u>o</u> y
[ɔ]	h <u>a</u> ughty
[ə]	banan <u>a</u>
[ɪ]	b <u>i</u> t
[ʊ]	p <u>u</u> t
[aʊ]	h <u>o</u> w
[aɪ]	h <u>i</u> gh
[ʌ]	h <u>u</u> t

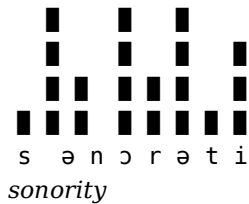
### non-vowels (glides and consonants)

[t d p b k f v s l r h m n w] all have their 'expected' value (the usual one in spelling)

[tʃ] = [tʃ]	<u>ch</u> urch
[dʒ] = [dʒ]	ju <u>dg</u> e
[θ]	<u>th</u> aw
[ð]	<u>th</u> ough
[ʃ] = [ʃ]	<u>sh</u> ow
[ʒ] = [ʒ]	plea <u>g</u> ure
[ŋ]	han <u>g</u>
[j] = [j]	ya <u>rd</u>

Where two symbols are shown as equivalent the one on the left is in the *American* transcription system and the one on the right is in the *International Phonetics Association* (or IPA) transcription system.

Each syllable consists of a single peak or maximum of **sonority** as shown in a **sonority cline**:



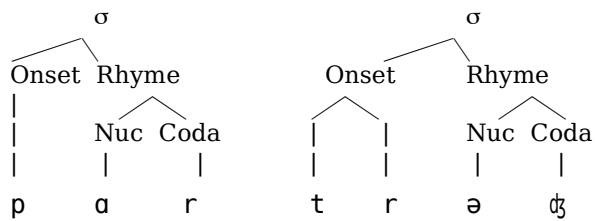
non-high vowel  
high vowel or glide  
sonorant consonant  
obstruent

there are as many syllables as peaks

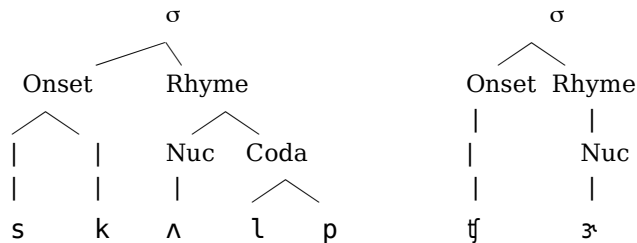
## Internal Structure of the Syllable

- Each syllable consists of three parts:
  - a. **ONSET:** segments preceding sonority peak
  - b. **NUCLEUS:** segments in the sonority peak
  - c. **CODA:** segments following the sonority peak
- The nucleus & the coda together are called the **RHYME** (or **RIME**)

*/ˈpɑːtrɪdʒ/ partridge*



*/ˈskʌlpɜː/ sculpture*



A syllable which has a coda is called **closed**.

A syllable which has no coda is called **open**.

A syllable which has no onset is called **onsetless**.

If a constituent contains more than one segment it is called **complex**.

## Basic Syllabification Rules

1. **Nucleus Rule.**

Assign nucleus to each sonority peak.

2. **Onset Rule.**

Adjoin an unsyllabified segment to a following nucleus if any.

3. **Complex Onset Rule.**

Adjoin an unsyllabified segment *a* to following onset segment *b*, provided that *a* is less sonorous than *b*. Continue doing this with as many segments as possible.

*Note:* English has a special rule which allows /s/ to be adjoined to a following /p t k f/ even though there is no rise in sonority. Spanish does not have this exception.

4. **Coda Rule.**

Adjoin an unsyllabified segment to a preceding nucleus, if any.

5. **Complex Coda Rule.**

Adjoin an unsyllabified segment *a* to a preceding coda segment *b*, provided that *a* is less sonorous than *b*. Continue doing this with as many segments as possible.

p a r t r ə ɔ̃	s k ʌ l p ʃ ɜ̃	start
p{a}r t r{ə} ɔ̃	s k{ʌ} l p ʃ{ɜ̃}	nuclei
{p a}r t{r ə} ɔ̃	s{k ʌ} l p {ʃ ɜ̃}	onsets
{p a}r {t r ə} ɔ̃	{s k ʌ} l p {ʃ ɜ̃}	complex onsets
{p a r}{t r ə} ɔ̃	{s k ʌ l}p {ʃ ɜ̃}	codas
{p a r}{t r ə} ɔ̃	{s k ʌ l p}{ʃ ɜ̃}	complex codas



