

(1.2) Stress vs. accent

- STRESS is a (predictable or unpredictable) lexical property of syllables of **words**. Some syllables of a word are stressed others are unstressed: *a.LAS.ka SAR.DINE Cl.ga.RETTE HELicopter*
- ACCENT is a property of some syllables of **utterances** (which may consist of one or more words). Accented syllables are rhythmically prominent and are potential sites of pitch change. In neutral sentences the last accent has the actual pitch change (the **tonic**, 1ry stress)

she sh**U**ddered in the **E**verlasting r**A**in

- STRESS vs. ACCENT: *Stress is a placeholder for accent:*

- only lexically stressed syllables can be accented: Enigm**A**tic w**I**ndow Atom pr**O**ton
- syllables that never bear accent are unstressed lexically: window atom proton
- some lexically stressed syllables may be unaccented: E.ver.**L**AS.ting vs. E.ver.**l**as.ting RAIN

		ACCENT	
		+	-
STRESS	+	✓	✓
	-	✗	✓

(2) Word stress:

(2.1) Degrees (one stress vs more than one stress in a word)

● Hungarian

*	*	*	*	*	*
.
matek	matekos	matekozik	matekozhatnak	matekozhatnának	átmatekozhatnának

● English

*	*	* *	* *
.
atom	atomic	atomistic	excommunicate
atəm	ətɔmɪk	atəmɪstɪk	ɛkskəmˈjʊwnɪkeɪt

Notation

spelling	átom	atómic	àtomístic	èxcommúnicate
transcription	'atəm	ə'tɔmɪk	ˌatə'mɪstɪk	ˌɛkskəm'jʊwnɪkeɪt
	átəm	ətómɪk	àtəmístik	èkskəmjúwnɪkeɪt

(2.2) Predictability (fully predictable vs. fully lexical)

Hungarian: leftmost syllable

- Macedonian: antepenultimate syllable

FULLY PREDICTABLE

&

FIXED

Polish: penultimate syllable

- classical Arabic:

FULLY PREDICTABLE

&

NOT FIXED

- Russian, Italian, Spanish

NOT (FULLY) PREDICTABLE &
(partially) LEXICAL

NOT FIXED

(2.3) Stress & quantity/syllable weight (quantity sensitivity)

- (i) syllable weight: heavy, superheavy, light (V_L =long V, D=diphthong, V_S =short V, "." = syllable boundary; open syllable ends in V, closed syllable ends in C)

HEAVY SYLLABLE: **H**LIGHT SYLLABLE: **L**

(contains a long V or diphthong or is closed)

(contains a short V and is open)

$V_L(C).$ or $D(C).$ or $V_S C(C).$				$V.$	
SUPERHEAVY (H_{SH})					
HL	<i>vi.sa</i>	<i>vi.j.zə</i>	$H_{SH}H$	<i>an.gel</i>	$\varepsilon j n . d 3 \partial l$
HH	<i>aw.ful</i>	<i>o: .fəl</i>	H_{SH}	<i>flaunt</i>	<i>flo:nt</i>
HH	<i>ban.quet</i>	<i>baŋ.kwit</i>	H_{SH}	<i>act</i>	<i>akt</i>
LL	<i>A.bba</i>			<i>a.be</i>	
LH	<i>a.crid</i>			<i>a.krid</i>	

Heavy syllables are bimoraic, light syllables are monomoraic

- (ii) A matter of analysis: two interpretations of diphthong

a. $D = V_L$ *ne.on* $nɪj . \partial n$ **HH**

b. $D = V_S C$ *ne.on* $nɪ . j \partial n$ **LH**

(iii) Quantity-sensitive systems, example: Classical Arabic

a. 'ka ta <ba> 'he wrote'
 L L

'ba la ħa <tun> 'date (nom sg)'
 L L L

b. ki 'ta: <bun> 'book (nom sg)'
 L H

ju 'ʃa: ri <ku> 'he participates'
 L H L

ma na: 'di: <lu> 'kingdom (nom sg)'
 L H H

Ignore last syllable; stress rightmost H if there is one, otherwise stress leftmost (L) syllable

(iv) Quantity-insensitive systems, example: Hungarian

paripa 'L L L Barbara 'H L L

karácsony 'L H L Melinda 'L H L

Abigél 'L L H Aladár 'L L H

(not the same as the pattern of Hungarian metrical verse: taka^rá el a ^bérci te^tót)

(2.4) Stress & the domain of stress assignment (extrametricality)

In a stress system with *extrametricality* some peripheral parts of the word are systematically outside the domain of metrification, e.g. last syllable in Classical Arabic:

a. 'ka ta <ba> 'he wrote'
 L L

'ba la ħa <tun> 'date (nom sg)'
 L L L

b. ki 'ta: <bun> 'book (nom sg)'
 L H

ju 'ʃa: ri <ku> 'he participates'
 L H L

ma na: 'di: <lu> 'kingdom (nom sg)'
 L H H

(2.5) Stress & vowel quality (vowel reduction: full vs. reduced vowels)

In a stress system with *Vowel Reduction* unstressed syllables have a limited set of vowels (called 'reduced vowels'), i.e. fewer vowel contrasts, compared to stressed syllables (e.g. Catalan, Russian).

(2.5.1) Vowel reduction in English

In English vowel quality and stress are *interdependent*, there are two sets of vowels: full vs. reduced.

(i) stressed syllables have full vowels and

(ii) there is a strong tendency for reduced vowels to occur in unstressed syllables (= vowel reduction).

parámeter

[pə'ramətə]

Jàpanése

[,dʒapə'nɪz]

Therefore: a reduced vowel can alternate with *any* full one

á t o m ~ a t ó m i c

a	ə	ə	ɔ
F	R	R	F

a c á d e m y ~ à c a d é m i c

ə	a	ə	a	ɛ
R	F	R	F	F

é d i t ~ e d í t i o n

ɛ	ə	ɪ	ɪ
F	R	R	F

However: while stressed syllables *must* have full vowels, unstressed syllables can have full vowels too.

October

ɔk'təwbə

ambassador

am'basədə

róbot

'rəwbɔt

órgasm

'o:gazəm

variation

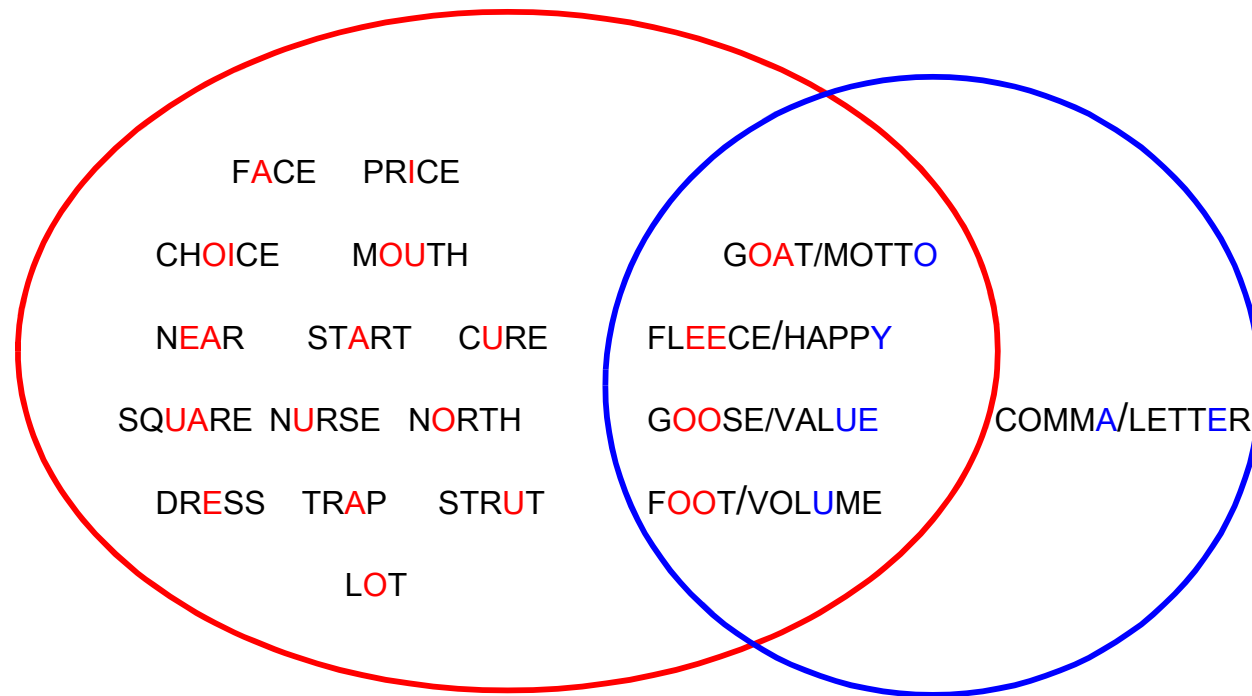
direct

dʒ'rekt % dɪ'rekt

% də'rekt

(2.5.2) FULL vs. REDUCED:

Overlap between full and reduced vowels



NB: If we analyse the vowel of STRUT [ʌ] and the vowel of COMMA/LETTER [ə] as stressed vs unstressed allophones of the same vowel phoneme /ə/, then the reduced vowels are a subset of the full ones

(2.6) Degrees of stress in English words

- when we study word stress, we study one-word sentences
- traditional: 1ry, 2ry, 3ry, 0

1ry & 2ry = stressed = may receive accent

3ry & 0 = unstressed = may not receive accent

(NB: some define stress differently and consider 3ry a stressed syllable)

(2.7) Unstressed syllables with full vowels: “TERTIARY stress”

Full vowelised syllables that never receive an accent in an utterance

(2.7.1) Notation

2 0 1 0 3
 èxcommúnicate
 ,ɛkskə'mjʊwnɪkɛjt

“3ry stress” is not indicated explicitly in transcription: full vowel without stress mark

(2.7.2) Indeterminacy

Since there is an overlap between full vowels & reduced vowels, *sometimes* it is not possible to tell if a syllable has a full vowel or a reduced vowel, i.e. whether it is “3ry stressed” or unstressed

vomit ['vɒmɪt] 1 0 or 1 3

F ?

ambush ['ambʊʃ] 1 0 or 1 3

F ?

(format ['fɔːmæt] 1 3)

F F

(2.8) The predictability of “tertiary stress”

(2.8.1) Post-tonic unstressed vowels: reduced vs. 3ry?

Unpredictable: it is mainly (mainly) lexical

lexical/arbitrary

*fórm*at [ˈfo:ma^t]
*párad*ise [ˈparəd^ɪjs]

*clí*mate [ˈklaɪmə^t]
*chá*racter [ˈkærəktə^ə]

morphological

*gráduate*_V [ˈgrædʒu^əɪt]

*gráduate*_N [ˈgrædʒu^ət]

(2.8.2) Pre-tonic unstressed vowels: reduced vs. 3ry?

(a) word-initial #__ pretonic syllables: INITIAL HEAVY SYLLABLE TENDENCY

(i)	light initial syllable		heavy initial syllable
	<i>A.mérica</i>	*a.'mɛ- ə.'mɛ-	<i>Mon.tána</i> mɒn.'tɑ-
	<i>a.trócious</i>	*a.'trəw- ə.'trəw-	<i>Oc.tóber</i> ɔk.'təw-
	<i>ba.nána</i>	*ba.'nɑ:nə bə.'nɑ:nə	<i>bac.téria</i> bak.'tɪ:rɪjə
	<i>ce.rámic</i>	*sɛ.'rɑmɪk sə.'rɑmɪk	<i>cog.nítion</i> kɒg.'nɪʃən
(ii)	Long V / diphthong		<i>vo.cátion</i> vəw.'keɪʃən
			<i>ci.tátion</i> səɪ.'teɪʃən
			<i>au.théntic</i> ɔ:.'θɛntɪk
			<i>au.dítion</i> ɔ:d.'ɪʃən
⊗	<i>No.vémbər</i>	nəw.'vɛ- nə.'vɛ-	
	<i>con.trást_v</i>	*kɒn.'trɑ:st kən.'trɑ:st	

(b) **word-internal pretonic syllables:** FULL VOWEL PRESERVATION *TENDENCY* in heavy syllables

H	<i>cómpensate</i> 'kɒmpɛnsɛjt	<i>còmpensátion</i> ,kɒm.pɛn.'sɛjʃən
	<i>condéense</i> kən'dɛns	<i>còndensátion</i> ,kɒn.dɛn.'sɛjʃən
(L	<i>mechánic</i> mɪ'kɑnik	<i>mèchanístic</i> ,mɛ.kə.'nɪstɪk)

FULL VOWEL PRESERVATION: vowel quality of the base is inherited in a pretonic heavy syllable

<i>impórt</i>	ɪm'pɔ:t	<i>ìmportátion</i>	,ɪmpɔ:tɛjʃən
<i>auténtic</i>	ɔ:t'ɛntɪk	<i>àuthentícity</i>	,ɔ:tɛn'tɪsətɪj
<i>detést</i>	dɛ'tɛst	<i>dètestátion</i>	,dɪjtɛs'tɛjʃən
<i>excíte</i>	ɪk'sɑjt	<i>èxcitátion</i>	,ɛksɑj'tɛjʃən

☹ But not always (lexical conditioning)

<i>infórm</i>	ɪn'fɔ:m	<i>informátion</i>	,ɪnfə'mɛjʃən	variation often occurs
<i>consúlt</i>	kən'sʌlt	<i>cónsultátion</i>	,kɒnsəl'tɛjʃən	
<i>confírm</i>	kən'fɔ:m	<i>confirmation</i>	,kɒnfə'mɛjʃən	

FULL VOWEL PRESERVATION: full vowel tends NOT occur in this position in a derived word when there is a lack of a corresponding (stressed) full vowel in some related word: ?*cònt[ɛ]mplátion (cónt[ə]mplate, *cont[ɛ]mpl...)

(2.9) Stressed syllables & “tertiary stress”

a *stressed* syllable in a word may be a

(i) rhythmically stressed/strong (=accented) syllable in a sentence

or

(ii) may also lose its rhythmical prominence (its accent) under certain conditions (Rhythm Rule).

but (iii) an unstressed syllable cannot be upgraded to become accented for rhythmic reasons even *if it has a full vowel* (= is 3ry).

<p>èverlásting evə'lɑ:stɪŋ</p>	<p>The rain is everlasting</p>	<p>[EverlAsting]</p>		<p>Rhythm Rule</p>
	<p>She shivered in the everlasting rain</p>	<p>[Everlasting] rAIn</p>		
<p>Octóber ɔk'təwbə</p>	<p>It rains in October</p>	<p>[ɔctOber]</p>		<p>*Rhythm Rule</p>
	<p>She shivered in the October rain</p>	<p>[ɔctOber] rAIn</p>		
		<p>*[ɔctOber] rAIn</p>		

(2.9.1) Distribution: 3ry stress vs. 2ry stress

(i) Rightmost stress in a word = primary (1ry) non-rightmost stress(es) = secondary (2ry)

Let us assume we know where the rightmost (1ry) stress is.

(ii) Distribution

Two-syllable words # F <u>STR</u> #	Rhythm Rule ✓	F (full V) = 2ry
<i>sàrdíne</i> ,sɑ:'dɪjn	<i>sàrdine sándwich</i> ,sɑ:dɪjn 'sanwɪdʒ	
<i>dírécť</i> ,dɑj'rɛkt	<i>direct débit</i> ,dɑj'rɛkt 'dɛbɪt	
<i>cartóon</i> ,kɑ:'təwn	<i>càrtoon nétworķ</i> ,kɑ:təwn 'nɛtwɜ:k	

Three-syllable words # F <u>STR 0</u> #	Rhythm Rule ✗	F = 3ry
<i>Octóber</i> ɔk'təwbə	<i>Octòber ráin</i> ɔk,təwbə 'reɪn	
<i>Titánic</i> tɑj'tanɪk	<i>Titànic's bánd</i> tɑj,tanɪks 'bænd	
<i>salvátion</i> sal'veɪʃən	<i>Salvàtion Ármy</i> sal,vɛɪʃən 'ɑ:mi	

	position			after 1ry stress
	2 σ before 1ry stress	1 σ before 1ry stress		
		# F STR #	# F STR 0 #	
2ry stress	<u>à</u> cadémic	<u>sà</u> rdíne	-	-
“3ry stress” = unstressed with full V	-	-	<u>O</u> ctóber	<u>ró</u> bot

(2.10) Difference between stresses: 1ry vs. 2ry – pitch change

2 1
Academic.

2 2 1
Peter's an academic.

2 2 2 1
Peter's an academic for good.

*The distinction between 1ry & 2ry stress is a **predictable** phrase/sentence level distinction (they are both stressed at the word level and accented in the utterance: 1ry = tonic). At the level of words 1/2ry stress is **the same kind of stress** (as opposed to 3ry & 0 syllables, which are unstressed).*

At phrase/sentence level, in neutral sentences the rightmost accent is the tonic (=1ry).

Thus: in isolated words (=one-word sentences) the last stress is 1ry, the other stresses are 2ry.

(3) Predictability of stresses in a word

(3.1) Non-rightmost stress ('2ry') is predictable when the place of the rightmost stress ('1ry') is known

(3.2) The phonotactics of '2ry' stress in English words (constraints)

NO 2^{RY} AFTER 1^{RY}: *#...1...2...# (by definition, see (3.1))

gráduate_v ['gradʒuweɪt] > 1 0 3 NOT *1 0 2

a. **NO STRESS CLASH** * #...STR STR...# (= *#...21...#; *#...22...#)

except in bisyllabic words	sàrdíne	Rhythm Rule:	sàrdine tín	*sardine tín
	prìncéss		Prìncess Ánn	*Princèss Ánn

b. **EARLY STRESS** *#00; *#30; *#03 exceptionless

(3.3) Relationship between the stressing of derived words and their bases

STRESS PRESERVATION The derived word has to preserve the place of the stresses of its base.

	base	derived word
✓	STR {chá racter}	STR {chá racter} + ístic
✓	STR {o rí ginal}	STR {o rì ginál} + ity
✗	STR {Ja pán}	STR {Jà pan} + ése

STRESS PRESERVATION is an inherently violable constraint: it applies as long as NO STRESS CLASH and EARLY STRESS are not violated = it is more important to obey NO STRESS CLASH and EARLY STRESS than STRESS PRESERVATION

a. ranking NO STRESS CLASH, EARLY STRESS >> STRESS PRESERVATION

- Long underived words with a stress later than the 3rd from the beginning of the word: 2ry stress is unpredictable: either one or two syllables are skipped

Àpalàchicóla (*Apàlachicóla)
1σ 1σ

but

Wìnnipésáukee (*Winnìpesáukee)
2σ

2ry stress is

- calculated from the location of 1ry stress
- weight insensitive
- iterative (a word can have more than one)
- stress preserving (if possible)
- partially unpredictable: long underived words