BBN-ANG-243 Advanced Phonology: Phonological Analysis

Word Stress Part 2

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(1) Metrification = *determining where the stresses are in a word*

(2) Rightmost stress in a word (='1ry'): predictability

(2.1) The 3-syllable window

There must be a stress within the final 3-syllable window of a word: (σσσ#)

á.ni.mal ho.rí.zon kan.ga.róo

i. *apparent* counterexamples are due to morphology: #-suffixation

rá.di.a.t # ing	ám.pli.fi. # er	u.ni.lá.te.ra.l #i.sm	cá.pi.ta.l #ize
ˈrɛj.dɪj.ɛj.t#ɪŋ	ˈam.plɪ.fɑj.#ə	jʉw.nɪ.ˈla.tə.rə.l#ɪ.zm	ˈka.pɪ.tə.l#ɑjz

ii. real counterexamples (true exceptions) are rare

á.ris.to.crat	mé.lan.cho.ly	cá.ter.pi.llar
ˈa.rəs.tə.krat	ˈmɛ.ləŋ.kə.lɪj	ˈka.tə.pɪ.lə

(2.2) Stress within the 3-syllable window: two views

(2.2.1) The 'no-pattern view'

English 1ry stress is lexical, i.e. (*mostly/completely*) unpredictable. It is lexically determined for every word and it can be anywhere within the 3-syllable window independently of the phonological properties of the syllables within the window and/or the morphological features of the word (e.g. *án.i.mal* vs. *e.ná.mel*).

(2.2.2) The 'pattern-with-exceptions view'

English 1ry stress is *mostly/generally* predictable. Metrification has to take into consideration phonological properties of the syllables within the 3-syllable window, extrametricality and the morphological features of the word. The standard generative treatments are based on this view (what follows is based on the analysis of Hayes 1982)

(3) 1ry stress in polysyllabic words

(3.1) 1ry stress in polysyllabic words

(3.1.1) When the last vowel *IS NOT* a long V or a diphthong

	NOUNS			**VERBS**	
= 2 σ	#Lσ# ˈtɛ.nənt *ténant*	#Hσ# ˈpɪj.tə *Péter*	#σH# ˈvɔ.mɪt *vómit*	#σL# ˈoːl.tə *álter*	#σH_{SH}# toː.ˈment *tormént*
> 2 σ	...σLσ# ˈɔ.rɪ.dʒɪn *órigin*	...σHσ# hə.ˈrɑj.zən *horízon*	...σH# ɪ.ˈma.dʒɪn *imágine*	...σL# də'lɪvə *delíver*	...σσH_{SH}# ˈdʒɛ.njə.flɛkt *génuflect*

Generalisations:

N The ultimate syllable is not stressed. Focus on the penultimate: stress the penultimate if it is heavy, but stress the antepenultimate if the penultimate is light.
Apparent problem: #Lσ# *ténant*

V The ultimate syllable can be stressed. Focus on the ultimate: stress the ultimate if it is superheavy, but stress the penultimate if the ultimate is heavy or light.
Problem: ...σσH_{SH}# *génuflect*

(3.1.2) When the last vowel *IS* a long V or diphthong

	NOUNS	**VERBS**
= 2 σ	#σ**σ**#	#σ**σ**#
	brə.ˈkɛjd bamˈbʉwː	səˈdɛjt əˈbɛj
	brocáde *bambóo*	*sedáte* *obéy*
> 2 σ	...**σ**σσ#	...**σ**σσ#
	ˈdɑj.nə.mɑjt ˈka.bə.rɛj	ˈɒ.pə.rɛjt səˈlɪdɪfɑj
	dýnamite *cábaret*	*óperate* *solídify*

Generalisations: There is no difference between the stressing of nouns and verbs. The ultimate syllable is stressed if the word is bisyllabic and the antepenultimate syllable is stressed if the word is longer than two syllables

This can be expressed by two rules:

Long Vowel Stressing (LVS):	stress long-vowelled final syllables
Alternating Stress Rule (ASR):	σ σ ó # → ó σ σ #

where LVS must apply before ASR

Derivation:			
	UR	# *sedate* #	# *cabaret* #
	LVS	# *sedáte* #	# *cabarét* #
	ASR	–	# *cábaret* #
	SR	[səˈdɛjt]	[ˈkabərɛj]

(3.2) The noun pattern and the verb pattern can be seen as ONE stress pattern

IF we assume that (i) the *last syllable* is outside the domain of metrification for nouns and (ii) *the last consonant* is outside the domain of metrification for verbs:

- nouns and verbs differ in extrametricality not in stress pattern
- extrametricality: nouns <σ># verbs <C>#

	NOUNS			VERBS	
= 2 σ	#L<σ>#	#H<σ>#	#σL<C>#	#σL#	#σH<C>#
	ˈtɛ.<nənt>	ˈpɪj.<tə>	ˈvɔ.mɪ<t>	ˈoːl.tə	toː.ˈmen<t>
> 2 σ	...σL<σ>#	...σH<σ>#	...σL<C>#	...σL#	...σσH<C>#
	ˈɔ.rɪ.<dʒɪn>	hə.ˈrɑj.<zən>	ɪ.ˈma.dʒɪ<n>	dəˈlɪvə	ˈdʒɛ.njə.flek<t>

General Main Stress Rule (MSR): *Within the domain of metrification* stress the rightmost σ if it is H, otherwise stress the preceding σ

Derivations

UR	animal	horizon	vomit	adopt	genuflect
LVS	–	–	–	–	–
Extr	ani<mal>	hori<zon>	vomi<t>	adop<t>	genuflec<t>
MSR	áni<mal>	horí<zon>	vómi<t>	adóp<t>	genufléc<t>
ASR	–	–	–	–	génuflec<t>
SR	[ˈanɪməl]	[həˈrɑjzən]	[ˈvɔmɪt]	[əˈdɔpt]	[ˈdʒɛnjəflekt]

(4) Some problems

(4.1) Conversion (zero derivation): no change

chihuahua	[tʃɪˈwɑːwə]	Don't chihuáhua$_V$ my plátypus$_N$!
platypus	[ˈplætəpəs]	Don't plátypus$_V$ my chihuáhua$_N$!

(a) **conversion**: có<mment>$_N$; có<mment>$_V$ vs. (b) **derivation by restressing**: ré<cord>$_N$; recór<d>$_V$

Problem: (a) vs. (b) is unpredictable

(4.2) Some 'prefixes' of Latin origin in verbs: *o=, ex=, im=, con=, re=, inter=, contra=, intro=, re=*

- may not receive 1ry stress – although they receive 2ry stress regularly

o=mít	(compare *édit*)
inter=véne	(compare *óperate*)

- analysis: they are *outside* the domain of 1ry stress assignment: ~~o~~=mí<t> ~~inter~~=vé<ne>

Problem: circularity, often nothing other than stress itself identifies them

(4.3) Internal sC clusters

(i) Two syllabifications of word-internal sC clusters

(a) s.C

(b) .sC

(ii) Examples

(a)	(b)
σ. Ĥ.<σ>#	σ́. L.<σ>#
σ. V_S s. C-	σ. V_S . sC-
az.ˈbɛs.təs	ˈmɪ.nɪ.stə
asbéstos	*mínister*
Aláska	*áncestor*
Francíscan	*órchestra*
aspidístra	*índustry*
contéstant	*Prótestant*

Problem: (a) vs. (b) is unpredictable

(4.4) Syllabification of diphthongs

(i) Two interpretations of diphthong

a.	D = V_L	ne.on	**nɪj** . ən	**H**H
b.	D = V_SC	ne.on	**nɪ** . jən	**L**H

(ii) Examples

(a) σ. **Ḧ**.<σ>#

dɪ.ˈzɑj.ə

desíre

esquíre

paríah

Messíah

(b) σ́. L.<σ>#

ˈsa.tɑ.jə

sátire

émpire

sápphire

úmpire

Problem: (a) vs. (b) is unpredictable

(4.5) VANILLA nouns

Penultimate LIGHT syllable gets stress (irregularly) **ˈL<σ>#** **(a) vaní<lla>** **vs.** **(b) áni<mal>** (regular)

anténna, assássin, dilémma, gorílla, guerílla, Henriétta, Nantúckett, savánna, spaghétti, Mississíppi, Kentúcky, umbrélla, vanílla

Problem: (a) vs. (b) is unpredictable

(4.6) CARESS verbs

Final V_SC syllable gets stress (irregularly) **ˈV_s<C>#** **(a) caré<ss>** **vs.** **(b) edi<t>** (regular)

abét, abhór, addréss, asséss, begín, caréss, conféss, discúss, forgét, fulfíll, progréss, rebél, repél, impél

Problem: (a) vs. (b) is unpredictable

(4.7) Nouns stressed on their final short vowelled syllable

Final syllable gets stress although vowel is short (irregularly) **ˈV_sC#** **(a) hotél** **vs.** **(b) cá<mel>** (regular)

batón, Brasíl, canál, duét, duréss, giráffe, hotél, quartét, sedán, Sudán, Susánne

Problem: (a) vs. (b) is unpredictable

(5) Derived words: affixes and stress; the relationship between affix shape and stress placement

(5.1) Stress-neutral suffixes: strong-boundary suffixes, which do not change the stress-pattern of their bases

féver féverish édit éditing

- analysis: they are *outside* the domain of metrification fé<ver>#~~ish~~ édi<t>#~~ing~~

(5.2) Stress-placing suffixes: weak-boundary suffixes, which may change the stress-pattern of their bases

- analysis: they are *inside* the domain of 1ry stress assignment = metrified together with their bases:

sán+i<ty>

- (sometimes) there is a connection between the shape of a weak boundary suffix and the position of stress assigned by it

Problem: given the above assumption about the metrification of weak boundary suffixes we would expect words containing them to behave like monomorphemic words (=no internal boundary). This is not always the case:

σL<σ> (noun) sá.ni.ty ✓ but no.ve. létte ✗ compare: ánimal

(a) pre-stressed 1: primary stress falls on the syllable preceding the suffix.

Shape

(i) -Lσ *-uble, -ity, -ety, -erie, -ion, -ular, -logy, -meter, -graphy, -poly, -tomy, -pathy, -thesis, -gamy*

- these suffixes follow the noun pattern and stress placement follows from their shape

abíli<ty> confórmi<ty>

(ii) -H *-ic, -ish*$_{V/N}$

- these suffixes follow the verb pattern and stress placement follows from their shape

anatómi<c> militarísti<c>

(b) pre-stressed 1/2 1ry stress falls on the syllable preceding the suffix if it is H, but on the 2nd syllable preceding the suffix if the syllable preceding the suffix is L.

Shape

(i) *-σ* *-age, -al, -ous, -ive, -ant, -ance, -ent, -ence*

- these suffixes follow the noun pattern and stress placement follows from their shape

medíci<nal> parén<tal>

(ii) *-σσ* *-ative, -ature, -ible, -ery, -ary, ory*

- 1ry stress placement does not follow from the shape of these suffixes.
fí.gu.rative de.món.strative

(c) Pre-stressed 2 1ry stress falls stress on 2nd syllable preceding the suffix (if possible)

Suffix shape

-(C)V:(C) -ateV, -ize, -ite, -ene, -ine, -cide, -oir, -ose, -tude, -(i)fy

- These suffixes place 1ry stress by Long Vowel Stressing (+ the Alternating stress Rule)
  rádiate, sedáte

(d) auto-stressed: 1ry stress falls on the suffix itself

Auto-stressed suffixes are exceptional and 1ry stress placement does not follow from their shape

Shape

(i) -(C)VV(C) *-ade, -ese, -ique* [iːk], *-ee* [iː]

lemonáde

(ii) -VCC *-esque*

picturésque

(iii) -VC *-esce, -ette*

novelétte

1ry stress is

- calculated R>L from # boundary
- weight-sensitive
- non-iterative (MSR applies only once)
- not stress preserving
- partially unpredictable: many exceptions

(6) Reliability

(6.1) "Exceptions" (see (4) above)

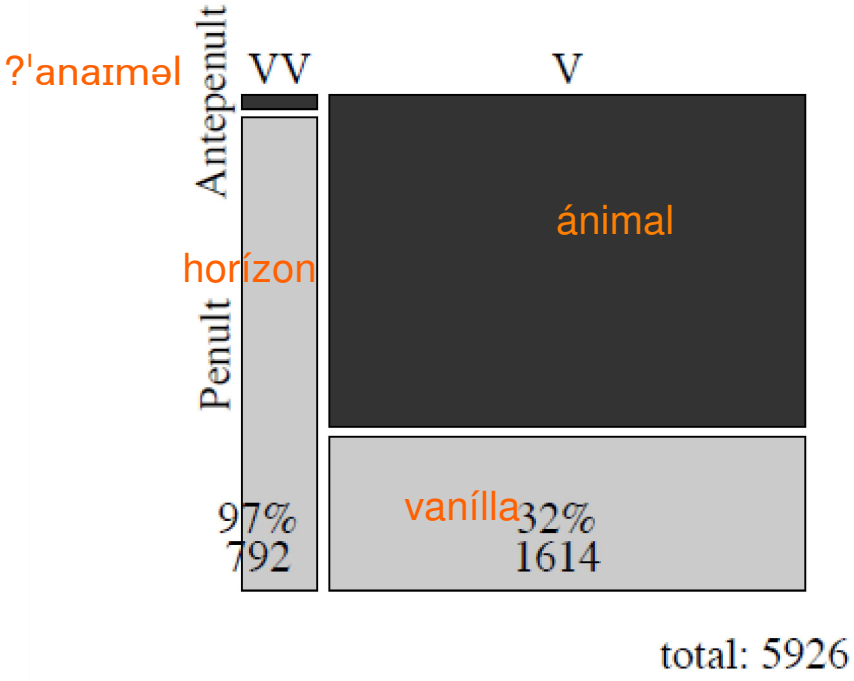
(6.1.1) When the last vowel *IS NOT* a long V or a diphthong

	NOUNS			VERBS	
= 2 σ	#L̲σ#	#H̲σ#	#σ̲H#	#σ̲L#	#σS̲#
	ˈtɛ.nənt *ténant*	ˈpɪj.tə *Péter*	ˈvɔ.mɪt *vómit*	ˈoːl.tə *álter*	toː.ˈmɛnt *tormént*
	sə.ˈmɛnt *cemént*	həw.ˈtɛl *hotél*	rɪgˈrɛt regrét	–	ˈkɔ.ment *cómment*
> 2 σ	...σ̲Lσ#	...σH̲σ#	...σ̲H#	...σ̲L#	...σ̲σS#
	ˈɔ.rɪ.dʒɪn *órigin*	hə.ˈraj.zən *horízon*	ɪ.ˈma.dʒɪn *imágine*	dəˈlɪvə *delíver*	ˈdʒɛ.njə.flɛkt *génuflect*
	vəˈnɪlə *vanílla*	ˈka.rək.tə *cháracter*	?	ˈma.sə.kə *mássacre*	ˌkɔm.prə.ˈhɛnd *comprehénd*

(6.1.2) When the last vowel *IS* a long V or diphthong

	NOUNS	VERBS
= 2 σ	#σ**σ**#	#σ**σ**#
	brə.ˈkɛjd *brocáde*	sə.ˈdɛjt *sedáte*
	ˈrabɑj rábbi	ˈman.dɛjt *mándate*
> 2 σ	...**σ**σσ#	...**σ**σσ#
	ˈdɑj.nə.mɑjt *dýnamite*	ˈɔ.pə.rɛjt *óperate*
	ˌkaŋ.gə.ˈrʉw kàngaróo	ˌvɔ.lən.ˈtɪː vòluntéer
	ə.ˈlʌm.nɑj alúmni	

Figure 4.1. The effect of vowel length of the penultimate syllable on main stress placement: All words three syllables long and longer, both morphologically complex and morphologically simple words. χ^2=1255.02

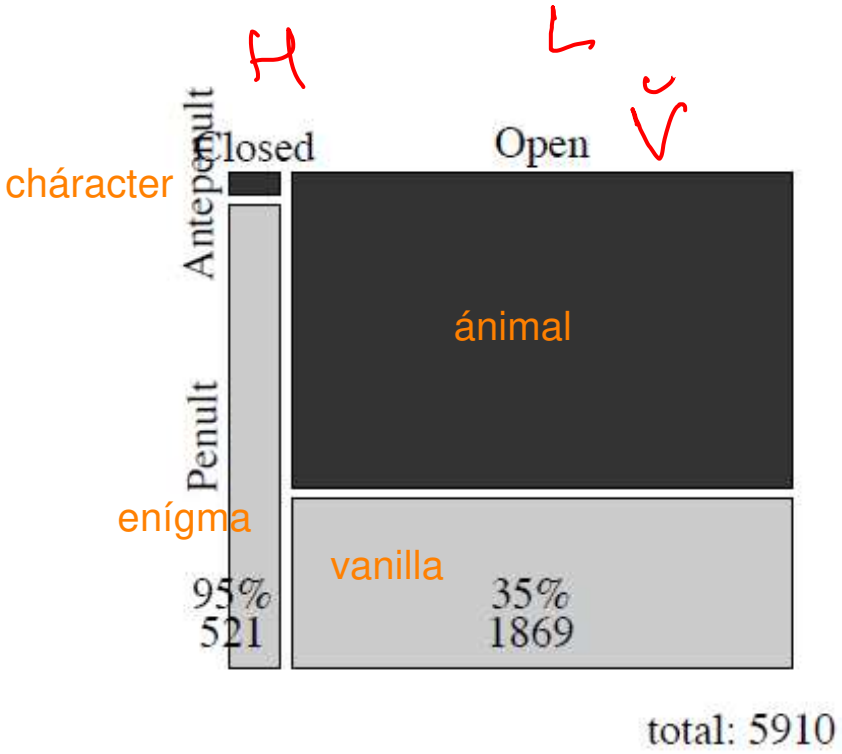


σ́ σ̄ σ #

more reliable than

σ́ σ̆ σ #

Figure 4.2. The effect of a closed penultimate syllable on main stress placement: Only consonants which cannot legally be syllabified as onset to the final vowel are counted as coda consonants. All words three syllables long and longer, both morphologically simple and complex are included. χ^2=745.99



cháracter

ánimal

enígma

vanilla