

BBN-ANG-141 Foundations of phonology

10. Phonotactic constraints

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outline

introduction

phonotactic constraints

- word edges

- sonorants

- vowel+consonant

- some consonant+vowel restrictions

language change

loanwords

sample exam questions

element combinations

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IMPOSSIBLE		

possible/impossible words, existing/nonexistent words

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IMPOSSIBLE		bnick

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- ▶ some words are filtered out (because they contain a rare string), still they do exist
- ▶ actually, *blick* is an existing, but rare word

phonotactic constraints

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 - ▶ rarely between a consonant and the following vowel, **$C \Leftrightarrow V$**

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 - ▶ sometimes between a vowel and the following consonant, $V \leftrightarrow C$
 - ▶ rarely between a consonant and the following vowel, $C \leftrightarrow V$
- ▶ usually only adjacent (=neighbouring) segments are affected

the beginning of the word

vowels

short **u**, long **u:**, and **uw** are very rare (*umlaut*; *Uhrsprache*; *oodles*, *ooze*)
but this does not seem to be systematic

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consonants

/ŋ/ does not occur

#CC type 1: SC

S = sibilants: s z ʃ (ʒ tʃ dʒ)

sp spot		
st stop		
stʃ stew		
sk Scot		
sm smock		
sn snot		
sl slot		
	ʃr shred	
sw swat		

(marginal clusters in parentheses)

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sp spot	(ʃp spiel)	
st stop		
stʃ stew	(ʃtʃ stew)	
sk Scot		
(sf sphere)		
sm smock	(ʃm schmooze)	
sn snot	(ʃn schnapps)	
sl slot	(ʃl schlep)	(zl zloty)
(sr Srinagar)	ʃr shred	
sw swat	(ʃw schwa)	(zw Zwingli)
(sj suit)		(zj Zeus)

(marginal clusters in parentheses)

#CC type 2: TR

T = nonsibilant obstruents; R = nonnasal sonorants: **r l w** (not **j**)

pl plank	pr prank	
bl black	br brack	
fl flank	fr frank	
	tr train	tw twain
	dr drill	dw dwell
	θr thrack	θw thwack
kl clack	kr crack	kw quack
gl glad	gr grad	

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bl black	br brack	(bw bwana)
fl flank	fr frank	(fw phwoar)
(vl vlog)	(vr vroom)	(vw Vuitton)
	tr train	tw twain
	dr drill	dw dwell
	θr thrack	θw thwack
kl clack	kr crack	kw quack
gl glad	gr grad	(gw guacamole)

#CC type 3: Cj

OLD	NEW
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LABIAL

pure	pjo:
beauty	bj#wtj
few	fj#w
view	vj#w
mute	mj#wt

DENTAL

Thule	θj#wl	θ#wl
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ALVEOLAR

suit	sj#wt	s#wt
Zeus	zj#ws	z#ws
Luke	lj#wk	l#wk
new	nj#w	n#w

OLD	NEW
-----	-----

ALVEOLAR

tube	tj#wb	tj#wb
dune	dj#wn	dʒ#wn

PALATAL

rule	r#wl
chew	tj#w
juice	dʒ#ws
chute	ʃ#wt
jupe	ʒ#wp

VELAR

cute	kj#wt
gue	gj#w
huge	hj#wdʒ

#CCC: sTR & sCj

spl split	spr spring		spj spew
	str strap	* stw	stj/stʃ stew
(skl sclerosis)	skr scratch	skw squad	skj skew
* sfl	(sfr sphragistic)		* sfj
			(smj smew)
			* snj
			(slj sluice)

the end of the word

vowels

short vowels do not occur, only unstressed ə

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consonants

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consonants

- ▶ h does not occur

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- ▶ h does not occur
- ▶ in nonrhotic accents r does not occur

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- ▶ in nonrhotic accents r does not occur
- ▶ whether j w occur word finally depends on the analysis of diphthongs

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- ▶ **h** does not occur
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 - ▶ if *high* **haj**, *how* **haw** contain diphthongs, **j w** do not occur word finally

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 - ▶ if *high* **haj**, *how* **haw** contain diphthongs, **j w** do not occur word finally
 - ▶ if these words are CVC, they do

CC# type 1: NT

LABIAL	DENTAL	ALVEOLAR	PALATAL	VELAR
mp hemp		nt bent	ntʃ bench	ŋk bank
(mb corymb)		nd bend	ndʒ sponge	(ŋg langue)
mf nymph	nθ month	ns pence	(nʃ avalanche)	
* mv	* nð	nz bronze	(nʒ mélange)	

CC# type 2: IC

LABIAL	DENTAL	ALVEOLAR	PALATAL	VELAR
lp help		lt belt	ltʃ belch	lk bulk
(lb bulb)		ld held	ldʒ bulge	(lg Glenelg)
lf shelf	lθ filth	ls else	(lj Welsh)	
lv twelve	* lð	(lz Charles)	* lʒ	
lm film		(ln kiln)		* lj

CC# type 3: TT (and CCC#)

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CCC#

mpt prompt	m _p s glimpse	(l _p t sculpt)
ŋkt instinct	ŋ _k s lynx	(l _k t mulct)

nonnasal sonorants

	__V	__#	__C
h	<i>hen</i> hen, <i>inhale</i> inhejl	—	—
r	<i>run</i> rən, <i>Henry</i> henrij	—	—
l	<i>let</i> let, <i>goblet</i> goblət	<i>tell</i> tel	<i>help</i> help
j	<i>yet</i> jet, <i>onion</i> ənjən	<i>hay</i> hej	<i>voice</i> vojs
w	<i>wet</i> wet, <i>equal</i> ijkwəl	<i>how</i> haw	<i>house</i> haws

variation

- ▶ h and r only occur before a V (h is rare before an unstressed V)

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- ▶ **l** is being replaced by **w** when not before a V (in this novel variety **l** also only occurs before a V)
- ▶ if we analyse vowel + glide sequences as diphthongs then **j** and **w** also only occur before a V

some vowel+consonant restrictions

- ▶ rare vowel + rare consonant: eg ***uv**, ***uθ**, ***uð**, ***að#**, ***eð#**, etc

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- ▶ only **coronal** consonant after *aw*: *flout*, *loud*, *couch*, *gouge*, *house*, *arouse*, *south*, *Louth*, *brown*, *owl*, but **awm*, **awp*, **awk*, etc

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- ▶ only **coronal** consonant after aw: *flout, loud, couch, gouge, house, arouse, south, Louth, brown, owl*, but *awm, *awp, *awk, etc
- ▶ only **alveolar** consonant after oj: *exploit, void, voice, noise, coin, coil*, but *ojθ, *ojf, *ojtʃ, *ojp (except *coif*)

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- ▶ only **alveolar** consonant after **oj**: *exploit*, *void*, *voice*, *noise*, *coin*, *coil*, but *ojθ, *ojf, *ojtʃ, *ojp (except *coif*)
- ▶ some **long vowels** (the broad ones: a: o: ə:) may occur before two consonants (eg *task* ta:sk, *auction* o:kʃən, *excerpt* eksə:pt), others (the smooth ones: i: e: u:) may not

CCV restrictions

CV restrictions are rare

short **u** is rare and cannot be found after all Cs, eg **du** only in *Düsseldorf*

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CCV restrictions

- ▶ Cj can only be followed by **uw u: u o: ə**, cf *pubic* **pjúwbic**, *cure* **kjú:/kjó:**, *mutate* **mjutéjt**, *million* **míljən** (a rare exception: *piano* **pja:nəw**, also **pija:nəw**)

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- ▶ Cw can generally not be followed by **uw u: u**, cf *two* **tuw** (the **w** drops, but it is present in *twain*, *twelve*, *twenty*, *twice*, *between*, etc), but **swu** is okay

language change

language change modifies phonotactic constraints

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- ▶ Old English (OE) had **h** word finally and before consonants, Modern English (ModE) does not

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- ▶ as original compounds become monomorphemic, phonotactic constraints apply to them, eg *cupboard* ***pb** *kæbəd*, *Christmas* ***stm** *krisməs* (cf *chipboard* *tʃipbo:d* and *postman* *pəwstmən*, which are not (yet?) monomorphemic)

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 - ▶ E *#kn, but *knesset* may be /kn-, kən-/, E *#ʃm, but *schmalz* is /ʃm-/ (yielding “impossible” but existing words)

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