

BBN–ANG–242 Phonology

10. Morpho-phonological alternations:
allomorphs of *-s* and *-ed*,
palatalization, velar softening, spirantization

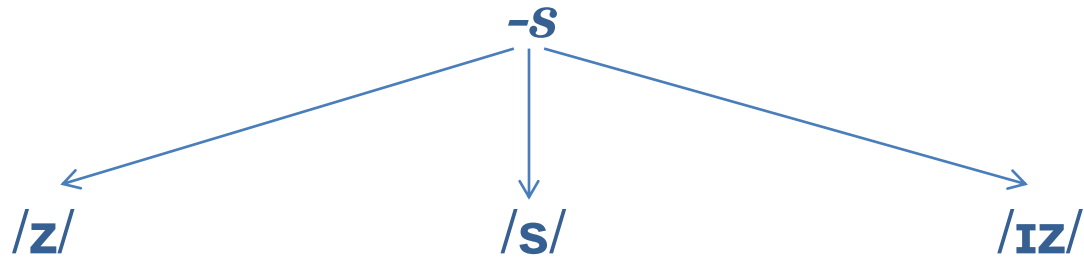
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The suffixes *-s* and *-ed*

The pronunciation of -s

(plural/possessive/3rd person singular morpheme, contracted form of *is/has*)



dads

ribs

doves

! guns !

wars

seas

days

cats

tips

months

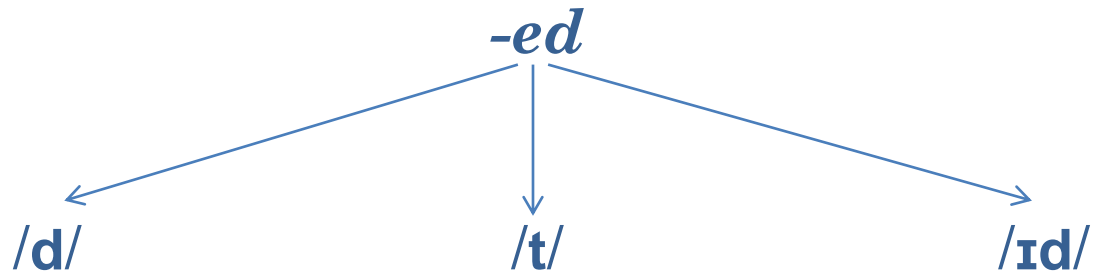
buses

wishes

garages

The pronunciation of *-ed*

(past tense/past participle morpheme)



logged
disturbed
loved
banned
bored
played

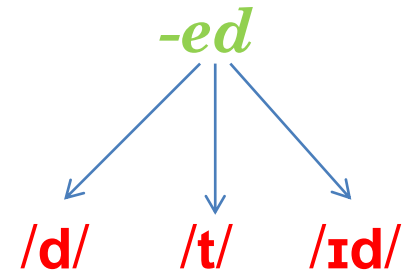
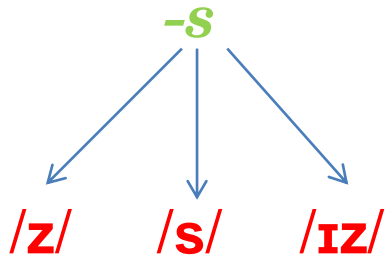
cooked
stopped
guessed

needed
hunted

/kúkt, stópt, gɛst/

*/kúgd, stóbd, gɛzd/

The pronunciation of *-s* and *-ed*



allomorphs of the same **morpheme**

progressive voicing assimilation

Pre-fortis clipping

(We've seen that in English the contrast between underlyingly voiced and voiceless (i.e. lenis and fortis) obstruents isn't necessarily realized as the voicing vs. voicelessness of the consonant. Fortis obstruents (e.g. /p, t, k, f, s/) are always voiceless, but lenis obstruents (e.g. /b, d, g, v, z/) might also become (partially or completely) devoiced if they are not between vowels or sonorant consonants – e.g. the /b/ of *Cuba* is voiced ([kjúwbə]), but *Bob* [bɔb] might sound like Hun. *pap* 'priest' [pɔp]).

So in the case of plosives in word-initial position or before stressed vowels, it is the presence vs. lack of aspiration (and not voicing) that is contrasting in aspirating languages like English – e.g. *Ben* [bɛn ~ b̥ɛn ~ pɛn] vs. *pen* [p^hɛn].)

Word-final obstruents might also be devoiced; however, the length of the preceding vowel(+sonorant sequence) does show whether it is lenis or fortis: before fortis obstruents the vowel(+sonorant) is clipped, i.e. shorter:

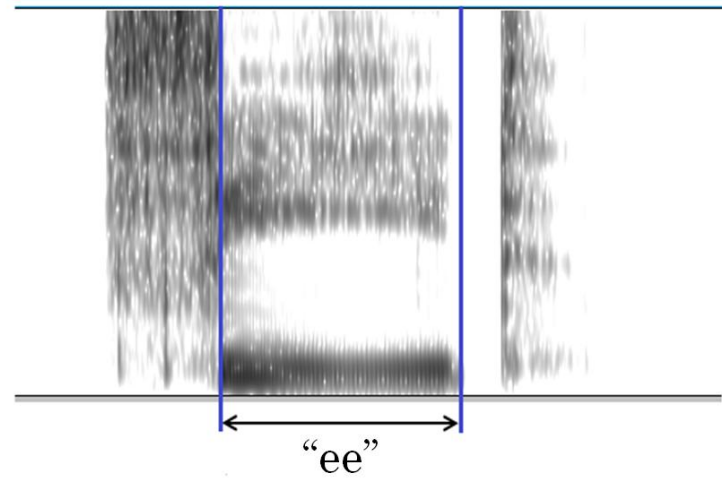
rays vs. *race* – /rɛjz/ vs. /rɛjs/ → [rɛjz ~ rɛjz̥ ~ rɛjs] vs. [rɛ̃js];

spend vs. *spent* /spɛnd/ vs. /spɛnt/ → [spɛnd ~ spɛnd̥ ~ spɛnt] vs. [spɛ̃nt].

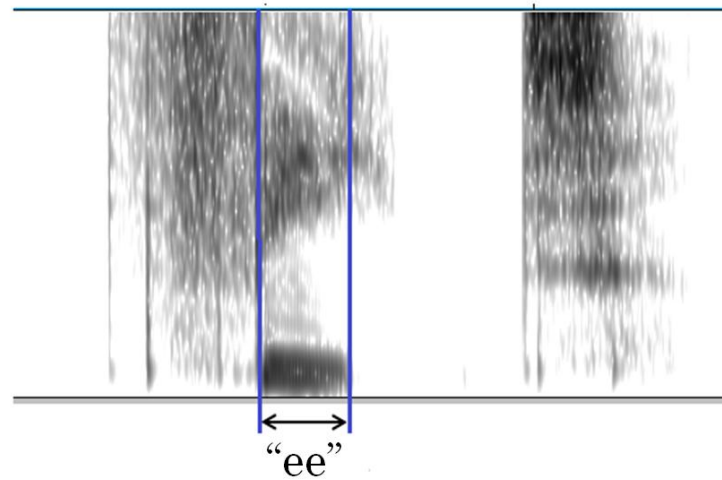
This is called **pre-fortis clipping/shortening**.

Pre-fortis clipping

feed



feet



Palatalization

Palatalization

			Place of articulation								
			bilab.	labio-dent.	dent.	alv.	post-alv.	pal.	vel.	glot.	
Manner of articulation	obstr.	stops/plosives	p b			t d			k g	[ʔ]	
		fricatives		f v	θ ð	s z	ʃ ʒ			h	
		affricates					tʃ dʒ				
	son.	nasals	m			n	ɲ		ŋ		
		approx.	liquids				l	r			
			glides	(w)					j	w	

Post-lexical palatalization (1)

What you see is what you get.

UR /wót jɥw síj ɪz wót jɥw gét/

SR [wót jɥw síj ɪz wót jɥw gét]

[wótʃ jɥw síj ɪz wótʃ jɥw gét]

t → tʃ / __#j

Post-lexical palatalization (1)

Did you send your friend your old YouTube video?

UR /dɪd jʌw sɛnd jə frɛnd jər ɔːld jʌwtjʌwb vɪdɪjəw/

SR [dɪd jʌw sɛnd jə frɛnd jər ɔːld jʌwtjʌwb vɪdɪjəw]

[dɪdʒ jʌw sɛndʒ jə frɛndʒ jər ɔːldʒ jʌwtjʌwb vɪdɪjəw]

$d \rightarrow dʒ / _\#j$

Post-lexical palatalization (1)

Bless you.

UR /blés jɥw/

SR [blés jɥw]

 [bléʃ jɥw]

s → **ʃ** / ___#j

Post-lexical palatalization (1)

Use your head.

UR /júwz jə héd/

SR [júwz jə héd]

 [júwʒ jə héd]

z → **ʒ** / ___#j

Post-lexical palatalization (1)

$$\left\{ \begin{array}{l} t \rightarrow tʃ \\ d \rightarrow dʒ \\ s \rightarrow ʃ \\ z \rightarrow ʒ \end{array} \right\} / _ \# j$$

- applies across word boundaries
- optional

Post-lexical palatalization (2)

Other instances of post-lexical palatalization:

		RP		CUBE
YouTube	[júwtjɥwb]	~	[júwtʃɥwb]	[júwtʃɥwb]
Tuesday	[tjúwzdɛj]	~	[tʃjúwzdɛj]	[tʃjúwzdɛj]
duty	[djúwtɪj]	~	[dʒjúwtɪj]	[dʒjúwtɪj]
reduce	[rɪdjúws]	~	[rɪdʒjúws]	[rɪdʒjúws]

Post-lexical palatalization (2)

$$\left\{ \begin{array}{l} tj \rightarrow tʃ \\ dj \rightarrow dʒ \end{array} \right\}$$

- applies within words
- optional in RP, obligatory in CUBE

Lexical palatalization

/t/ ~ /tʃ/

/d/ ~ /dʒ/

/s/ ~ /ʃ/

/z/ ~ /ʒ/

suggest ~ suggestion grade ~ gradual

express ~ expression

revise ~ revision

$\left\{ \begin{array}{l} t \rightarrow tʃ \\ d \rightarrow dʒ \\ s \rightarrow ʃ \\ z \rightarrow ʒ \end{array} \right\} / \text{ before certain suffixes}$

typical suffixes: -ion, -ian, -ial, -ious, -ual

- applies within words
- obligatory

Lexical palatalization

Is there palatalization in the following cases?

discussion /dɪskʌʃn/

morpheme alternation: /dɪskʌs/ ~ /dɪskʌʃ/ → yes

mission /mɪʃn/

no alternation, no recoverability → no

Persia /pɛ:ʒə/

no alternation, no recoverability → no

Velar softening

Velar softening

typical suffixes: -ise/-ize, -ity, -ic(al), -ian, -y_N

critic	/krítɪk/	+ -ize	→	/krítɪsəɪz/
romantic	/rəwmántɪk/	+ -ize	→	/rəwmántɪsəɪz/
italic	/ɪtálɪk/	+ -ize	→	/ɪtálɪsəɪz/
metric	/métrɪk/	+ -ize	→	/métrɪsəɪz/
electric	/ɪléktrɪk/	+ -ity	→	/ɪléktrísətɪj/
ethnic	/éθnɪk/	+ -ity	→	/ɛθnísətɪj/
egocentric	/íjgəwséntrɪk/	+ -ity	→	/íjgəwsentrísətɪj/
syllabic	/sɪlábɪk/	+ -ity	→	/sɪlabísətɪj/

Velar softening

typical suffixes: -ise/-ize, -ity, -ic(al), -ian, -y_N

pedagogue /pédəgɔg/ + -y → /pédəgɔdʒɪj/

analogous /ənələgəs/ + -y → /ənələdʒɪj/

Velar softening

			Place of articulation								
			bilab.	labio-dent.	dent.	alv.	post-alv.	pal.	vel.	glot.	
Manner of articulation	obstr.	stops/plosives	p b			t d			k g	[ʔ]	
		fricatives		f v	θ ð	s z	ʃ ʒ			h	
		affricates					tʃ dʒ				
	son.	nasals	m			n			ŋ		
		approx.	liquids				l	r			
			glides	(w)					j	w	

$\left\{ \begin{array}{l} k \rightarrow s \\ g \rightarrow dʒ \end{array} \right\} / \text{before certain suffixes}$

typical suffixes: -ise/-ize, -ity, -ic(al), -ian, -y_N

[k] and [g]: “hard” sounds

sibilants (e.g. [s] and [dʒ]): “soft” sounds → **velar softening**

Velar softening

Is there velar softening in the following cases?

ethnicity /εθní~~s~~ətɪj/

morpheme alternation: /έθνικ/ ~ /εθní~~s~~/ → yes

Tracy /tréj~~s~~ɪj/

no alternation, no recoverability → no

city /sí~~t~~ɪj/

no alternation, no recoverability → no

Spirantization

Spirantization

typical suffixes: -ion, -ian, -ial, -ious, -y_N

president	/prézidənt/	+ -y	→	/prézidənsɪj/
democrat	/démokrat/	+ -y	→	/dɪmókɾəsɪj/
aristocrat	/áristokrat/	+ -y	→	/áristókɾəsɪj/
divide	/divájd/	+ -ible	→	/divízəbəl/

Spirantization

			Place of articulation							
			bilab.	labio-dent.	dent.	alv.	post-alv.	pal.	vel.	glot.
Manner of articulation	obstr.	stops/plosives	p b			t d			k g	[ʔ]
		fricatives		f v	θ ð	s z	ʃ ʒ			h
		affricates					tʃ dʒ			
	son.	nasals	m			n			ŋ	
		approx.	liquids				l	r		
		glides	(w)					j	w	

$\left\{ \begin{array}{l} t \rightarrow s \\ d \rightarrow z \end{array} \right\}$ / before certain suffixes

typical suffixes: -ion, -ian, -ial, -ious, -y_N

fricatives (i.e. [s] and [z]) = spirants → **spirantization**

Spirantization

Is there spirantization in the following cases?

urgency /é:dʒənsɪj/

morpheme alternation: /é:dʒənt/ ~ /é:dʒəns/ → yes

fancy /fánsɪj/

no alternation, no recoverability → no

In sum...

Morpho-phonological alternations

phonemic difference – morpheme alternations

1. suggest /sədʒést/ – suggestion /sədʒéstʃən/
2. critic /krítɪk/ – criticize /krítɪsɪz/
3. president /prézɪdənt/ – presidency /prézɪdənsɪj/

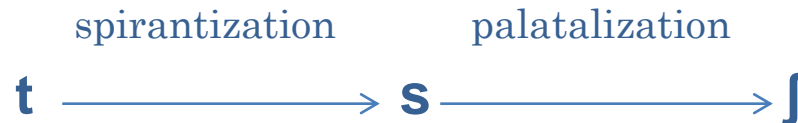
1. **palatalization**
2. **velar softening**
3. **spirantization**

Finally, combining what we've learned...

Morpho-phonological alternations

Which sound changes can you identify in the following case?

presidential /**prézi**dénʃəl/

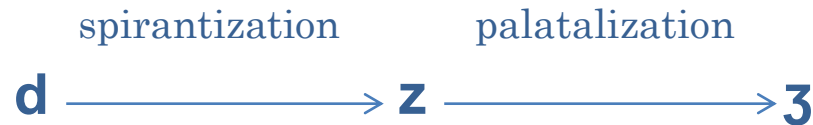


Finally, combining what we've learned...

Morpho-phonological alternations

Which sound changes can you identify in the following case?

decision /**d**ɪsɪʒən/

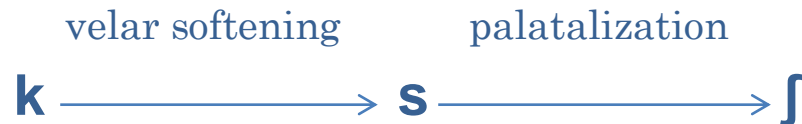


Finally, combining what we've learned...

Morpho-phonological alternations

Which sound changes can you identify in the following case?

electrician /ɪléktrɪʃn/



Strong (#) vs. weak (+) boundary suffixes

How can we justify the classification of suffixes into the following categories?

typical strong boundary suffixes:

#able, #(e)d, #ful, #ing, #less, #ment, #ness, #(e)s, etc.

typical weak boundary suffixes:

+ic, +ian, +ion, +ible, +ify, +ity, +ual, etc.

	#	+
stupid /stjúw <p>ɪ</p> d/	stupid#ness /stjúw <p>ɪ</p> d#nəs/	stupid+ity /stjúw <p>ɪ</p> d+ətɪj/
discuss /dɪskɹ̩s/	discuss#ing /dɪskɹ̩s#ɪŋ/	discuss+ion /dɪskɹ̩j+n/
grade /gréjd/	grad#able /gréjd#əbəl/	grad+ual /grádʒ+uəl/

Different types of mistakes

The following cases exemplify words pronounced/transcribed incorrectly. These mistakes are, in fact, quite different from each other. Try to explain simply what the differences lie in. Which of the mistakes do you think is/are more serious? Which one(s) has/have to do with phonology?

- *that* pronounced [dét]
- *that* transcribed as /dét/
- *a pint* /pínt/ *of beer*
- *climb* /klájmb/

Terms to check

morphemes (*morféma, szóelem*) – **allomorph** (*allomorf, alakváltozat*)

morpho-phonological alternations (*morfofonológiai alternációk/változások*)

suffix (*szuffixum, toldalék*)

strong vs. weak morpheme boundary (*erős vs. gyenge morfémahatár*)

palatalization (*palatalizáció, jésülés*)

post-lexical and lexical palatalization (*posztlexikális és lexikális palatalizáció*)

velar softening (*veláris puhulás*)

spirant = fricative (*spiráns = frikatíva, réshang*)

spirantization (*spirantizálódás, réshangúsodás*)

Recommended reading

Ádám Nádasy: *Background to English Pronunciation (Phonetics, Phonology, Spelling)*, **pp. 62–70**