# Linguistics 288b

Phonology 5

Allomorphy

- Morphemes, like phonemes, are not always realized in the same way in all contexts.
- We talk about allomorphs just as we talk about allophones.
- But the factors that determine the distribution of allophones are purely phonological; the conditioning of allomorphy is determined by a wider range of factors.


Allomorphy

- Allomorphy is typically governed by one of three kinds of conditioning:
  - **Phonological conditioning**
  - **Grammatical conditioning**
 - **Lexical conditioning**

Phonological conditioning

- The choice of an allomorph for a particular morpheme is determined by the local phonological context.
- E.g. English plural

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Allomorphy

- <u>English plural</u>: an illustration of phonologically-conditioned allomorphy.

plural /z/:
[kæt s]
[dɑg z] → Allomorphs of plural /z/
[bʌ s əz]

Grammatical conditioning

- The choice of allomorph is determined by the grammatical environment in which the morpheme occurs.

Grammatical conditioning

- Mid-vowel laxing in Portuguese nouns

Singular	Plural
olho [oʎu] 'eye'	olhos [ɔʎuz] 'eyes'
ovo [ovu] 'egg'	ovos [ɔvuz] 'eggs'
povo [povu] 'people'	povos [pɔvuz] 'peoples'

Portuguese nouns

- The tenseness of the vowel in the root is determined by whether the plural affix is attached or not.

Grammatical conditioning

- German adjectives:
  - **ein gross-er Wagen 'a big car (masculine)'**
  - **ein gross-er Fisch 'a big fish (masculine)'**
  - **ein gross-es Haus 'a big house (neuter)'**
  - **ein gross-es Tier 'a big animal (neuter)'**
  - **eine gross-e Feder 'a big feather (feminine)'**
  - **eine gross-e Schlange 'a big snake (feminine)'**

German adjectives

- The suffix on the adjective is not determined by the phonetic shape of the base or of the next word, nor is it determined by the particular lexeme following, but rather by the grammatical gender class that lexeme belongs to.

Lexical conditioning

- The choice of the allomorph is determined by the presence of a specific lexical item (i.e. determined by the choice of the word to be marked).
  - **e.g. English plural (again)**

Lexical conditioning: English plural

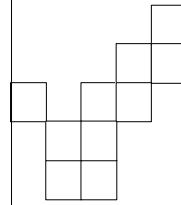| dog		dogs
cat		cats
ox	oxen	?oxes
tooth	teeth	*tooths

English plural

- There are distinct (i.e. not phonologically related) allomorphs of plural that are required by certain lexical items.
- Notice that phonologically conditioned allomorphy operates on specific bundles of phonological material, while grammatical and lexical conditioning may relate forms that are totally unrelated from a phonological perspective (e.g. suppletion).

Morphophonemics

The study of the interface between phonology and morphology

English plural revisited

dog	dogs	[dɑgz]
cat	cats	[kæts]
rose	roses	[rowzəz]
tree	trees	[trijz]

English plural revisited

1. [s] after non-strident voiceless segments
   - /kæt **+ z/ = [**kæts]
   - /kæp **+ z/ = [**kæps]
2. [z] after non-strident voiced segments
   - /**dɑg + z/ = [dɑgz]**
   - /**bij + z/ = [bijz]**
3. [əz] after strident segments
   - /**bʌs + z/= [bʌsəz]**

English plural

- NB: these are not rules but **descriptions** of the environments in which [s], [z] and [əz] are found.
- Three allomorphs of plural: [s] [z] [əz].
- Which should we pick as the underlying representation?
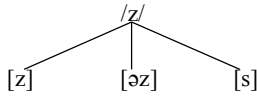
English plural

- [əz] is the most restricted, since it only occurs after stridents. Therefore we expect this to be a form derived by rule.
- In the case of the other two, it is less clear.

English plural

- Since [z] has the widest distribution, we posit that /z/ is the underlying form.
- How do we get from the underlying form to the different allomorphs?

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        /z/
      /  |  \
   [z]  [əz]  [s]
```

English plural

- The description results from the application of **two rules**.

1. Schwa-epenthesis

- in segments:

ø → [ə] / [s z ʃ ʒ tʃ dʒ] __ [z]

- in words: [ə] is epenthesized between stridents and [z]

e.g. /bʌ sz/   →   [bʌ səz]

strident   epenthetic [ə]

2. /z/-devoicing

(or assimilation of voice)

- in segments:

/z/ → [s] / [p t k f θ] __

- in words: /z/ becomes [s] after voiceless consonants

/z/-devoicing

NB: /z/-devoicing is **assimilation** of [-vce]

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  /p/        /z/    →       [ps]
   |          ‖
[-voice]   [+voice]
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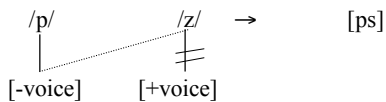
English plural

- Question: which process comes first?
- Does it matter?

Sample derivation

UR:	/kæt/+/z/	/dɑg/+/z/	/rowz/+/z/	/hɔrs/+/z/
ə-insertion	n/a	n/a	rowzəz	hɔrsəz
devoicing	kæts	n/a	n/a	n/a
Output:	[kʰæts]	/dɑgz/	[rowzəz]	[hɔrsəz]

Sample derivation

UR:	/kæt/+/z/	/dɑg/+/z/	/rowz/+/z/	/hɔrs/+/z/
devoicing	kæts	n/a	n/a	hɔrss
ə-insertion	n/a	n/a	rowzəz	hɔrsəs
Output:	[kʰæts]	/dɑgz/	[rowzəz]	([hɔrsəs])

English plural

- What if we pick /s/ as the underlying form?
- In the case of this process, it is possible to derive the correct outputs whichever UR we choose to start with.
- We use slightly different rules, but the results are the same.

> Does this mean it never matters which underlying representation we pick?

Samoan

Intrans V	Trans V	Gloss	Nominal
inu	inumia	'drink'	inumaŋa
taŋi	taŋisia	'weep'	taŋisaŋa
sila	silafia	'see'	silafaŋa
sio	siomia	'surround'	siomaŋa

Samoan

- What would you hypothesize as the underlying form for the suffix that derives a transitive verb?
- What about the suffix that derives a nominal form of the verb?

Samoan

How do we explain the apparent similarity between the initial consonants of the transitive and nominal suffixes?

Intrans V	Trans V	Gloss	Nominal
inu	inu-mia	'drink'	inu-maŋa
taŋi	taŋi-sia	'weep'	taŋi-saŋa
sila	sila-fia	'love'	sila-faŋa

How do we explain the different initial consonants of the transitive suffix?

Samoan

- The most straightforward analysis is to assume that there is a final consonant in the root morpheme.
- We get a uniform treatment of the affixes if we suppose that the consonants are part of the root, not part of the suffixes.
- We also explain why the same consonant occurs with both suffixes for a given root.

Samoan

Intrans V	Trans V	Nominal
inum	-ia	-aŋa
taŋis	We can postulate a phonological rule that deletes a word-final C: $C \rightarrow \emptyset \; / \; \_\_\#$	
silaf		
siom		