

# Allomorphy

**an introduction to the phonology-  
morphology interface**

# 1st class: Allomorphy – preliminaries and basic assumptions

Allomorphy – preliminaries and basic assumptions

Basic question:

What does a speaker know when s/he knows a language?

## Allomorphy – preliminaries and basic assumptions

Basic question:

What does a speaker **know** when s/he knows a language?

**Not** the same as:

- 1) What does a speaker *do* when speaking a language?
- 2) What does the speaker have to know to speak?

# Allomorphy – preliminaries and basic assumptions

[mæn]



# Allomorphy – preliminaries and basic assumptions

[mæn]

[mæn-li]

[mæn-hʊd]

[mæn-meɪd]



# Allomorphy – preliminaries and basic assumptions

[mæn]

[mæn-li]

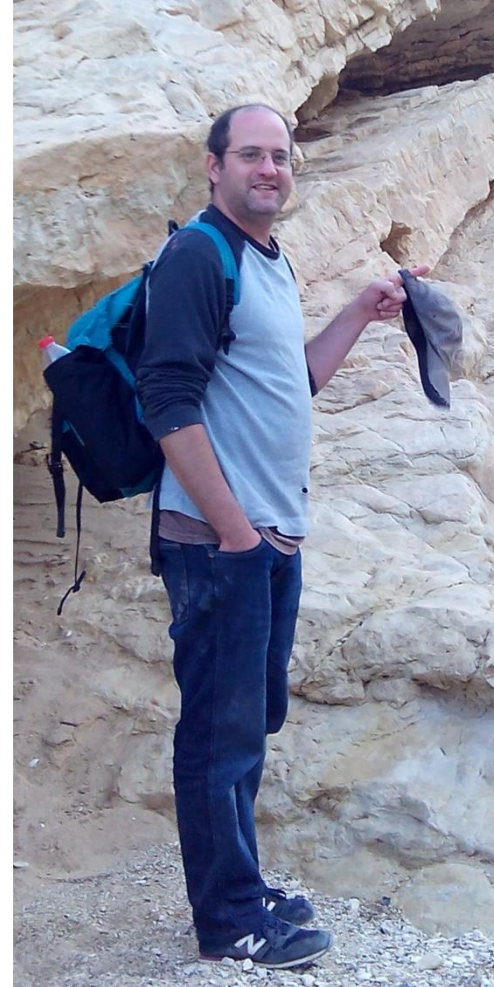
[mæn-hʊd]

[mæn-meɪd]

This concept is expressed by producing an ordered set of acoustic signals



m+æ+n



# Allomorphy – preliminaries and basic assumptions

[mæn]

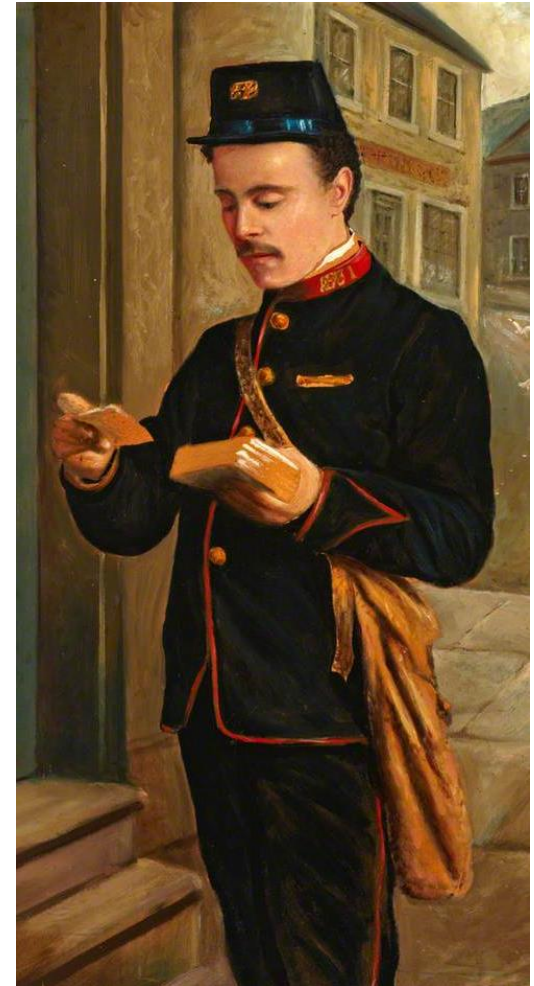
[mæn-li]

[mæn-hʊd]

[mæn-meɪd]

[pɒʊst-mæn]

Is this not the same entity?





# Allomorphy – preliminaries and basic assumptions

[mæn]

[mæn-li]

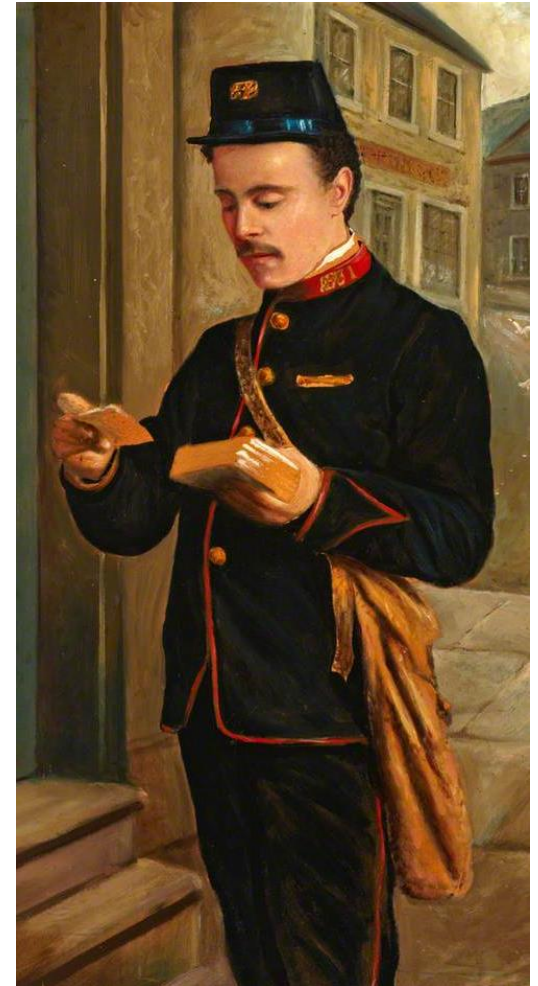
[mæn-hʊd]

[mæn-meɪd]

[pəʊst-mæn]

Is this not the same entity?

Why do we think it is?



Allomorphy – preliminaries and basic assumptions

There is a reason for this pronunciation:

[máɛn]

[máɛn-li]

[máɛn-hʊd]

[máɛn-meɪd]

[póʊst-mən]

Indeed, unstressed [æ] reduces to [ə] in English

Allomorphy – preliminaries and basic assumptions

Again, what does the speaker know?

Allomorphy – preliminaries and basic assumptions

Again, what does the speaker know?

1)  $m+\text{æ}+n$

2)  $*\text{æ}_{[-\text{stress}]}$

Is this enough?  $*[\text{pou}st\text{m}\text{ɪ}n, \text{pou}st\text{m}n]$

## Allomorphy – preliminaries and basic assumptions

Again, what does the speaker know?

1)  $m+\text{æ}+n$

2)  $*\text{æ}_{[-\text{stress}]}$                       *and*

3) Unstressed  $\text{æ} \Rightarrow [\text{ə}]$

## Allomorphy – preliminaries and basic assumptions

Again, what does the speaker know?

1)  $m+\text{æ}+n$  ← specific information

1)  $*\text{æ}_{[-\text{stress}]}$

2) Unstressed  $\text{æ} \Rightarrow [\text{ə}]$

← General  
rules

## Allomorphy – preliminaries and basic assumptions

Again, what does the speaker know?

1)  $m+\text{æ}+n$  ← specific information

1)  $*\text{æ}_{[-\text{stress}]}$

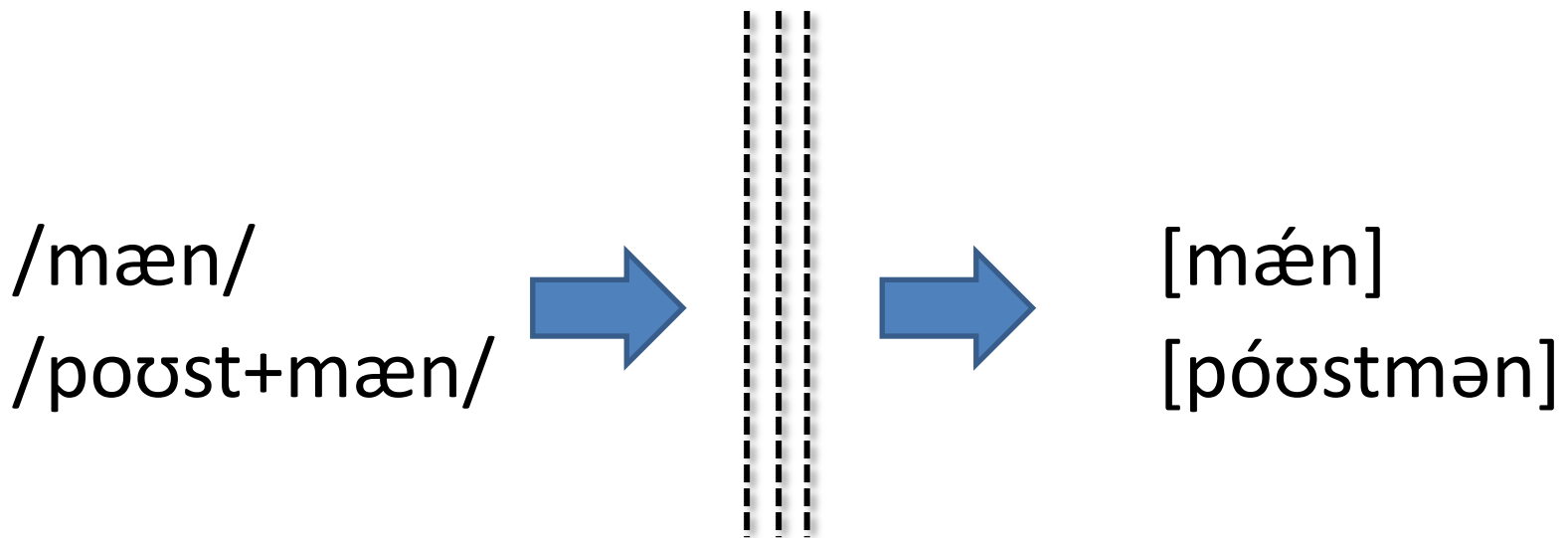
2) Unstressed  $\text{æ} \Rightarrow [\text{ə}]$

← General  
rules

(the rules are not about this word, are blind to its meaning)

# Allomorphy – preliminaries and basic assumptions

## How the system works

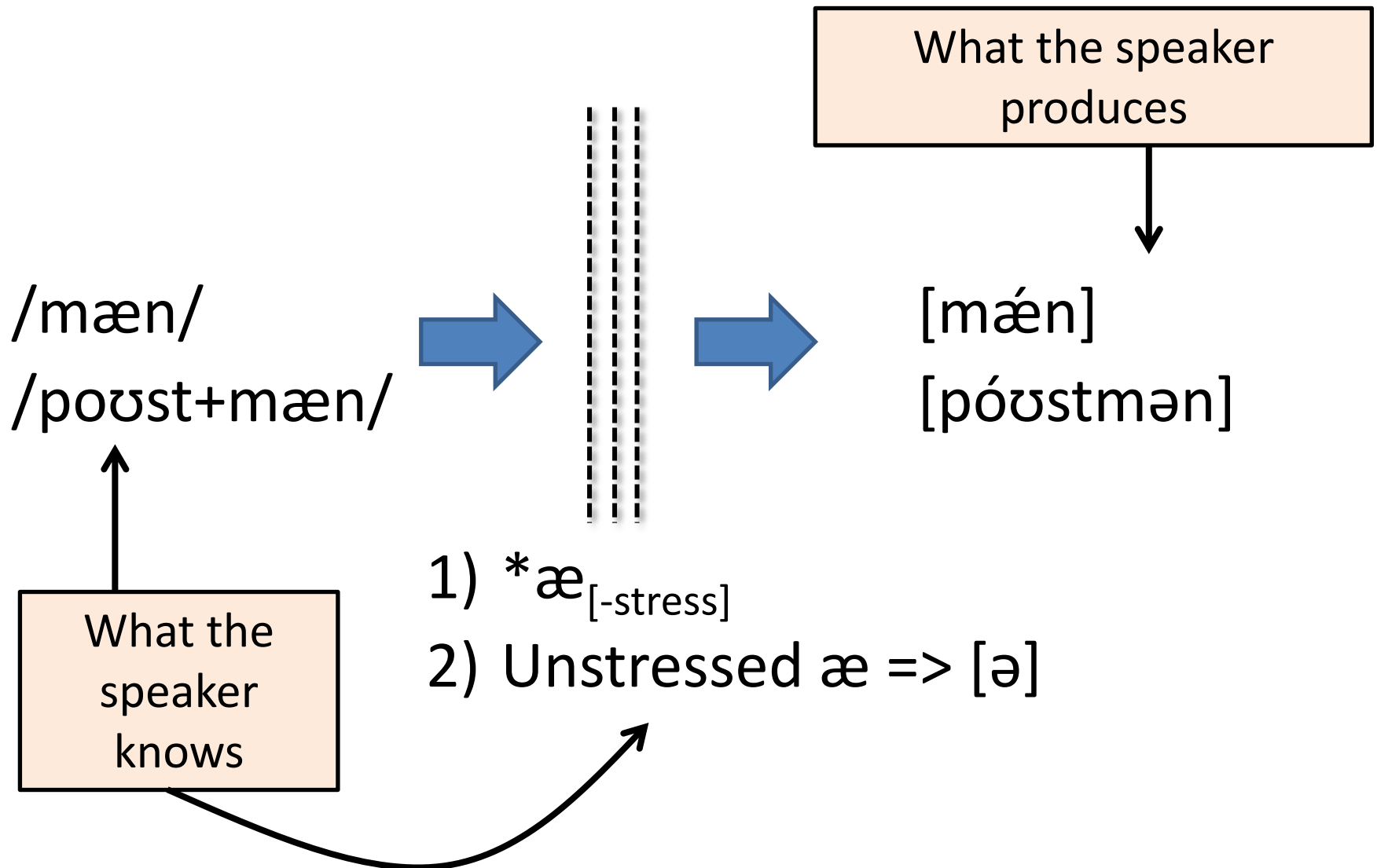


1) \*æ<sub>[-stress]</sub>

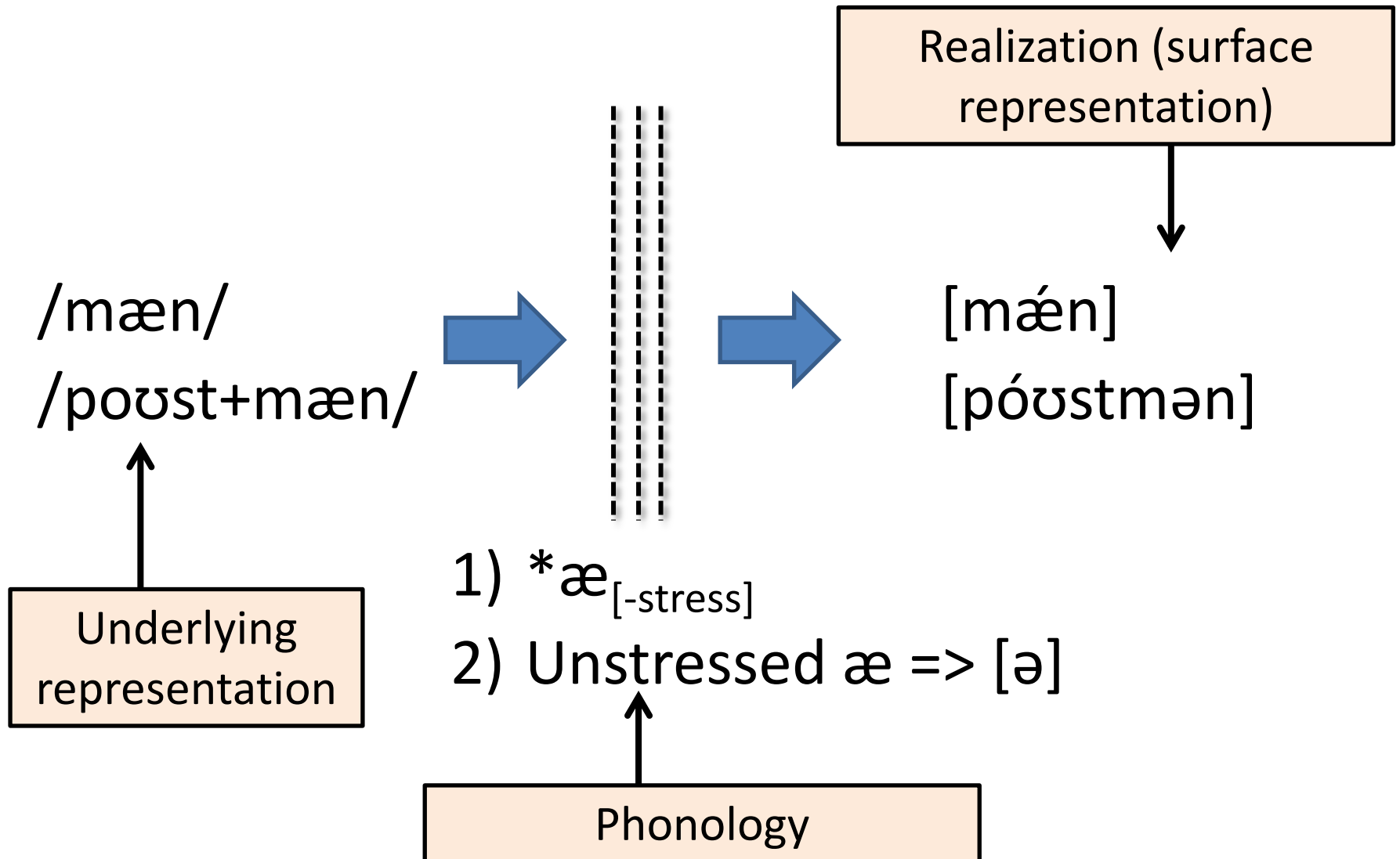
2) Unstressed æ => [ə]



# Allomorphy – preliminaries and basic assumptions



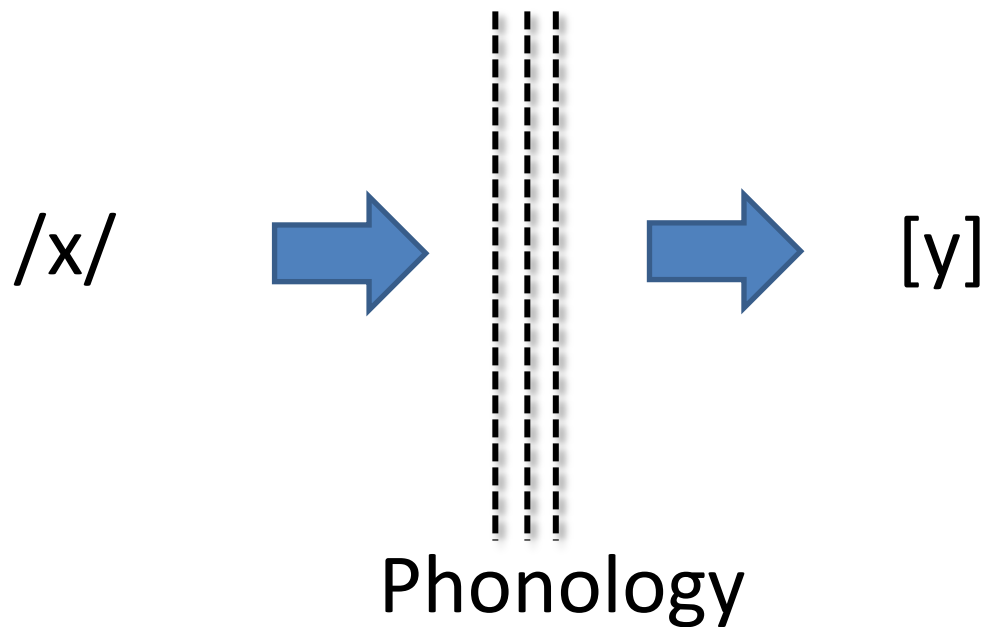
# Allomorphy – preliminaries and basic assumptions





## Allomorphy – preliminaries and basic assumptions

That may be the case for *postman* and *man*. But it does not affect the overall architecture of language. **All linguists agree** that there can be a difference between what we know or intend to produce and what we produce.



Allomorphy – preliminaries and basic assumptions

Recall:

What does a speaker **know** when s/he knows a language?

**Not** the same as:

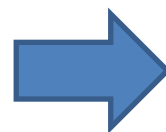
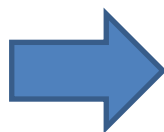
What does the speaker have to know to speak?

## Allomorphy – preliminaries and basic assumptions

Objection no 2: this architecture suggests that the system is economic: it doesn't memorize information about the realization of specific items that is already encoded as a phonological rule.

/mæn/

/poustmæn/



[máén]

[póustmən]

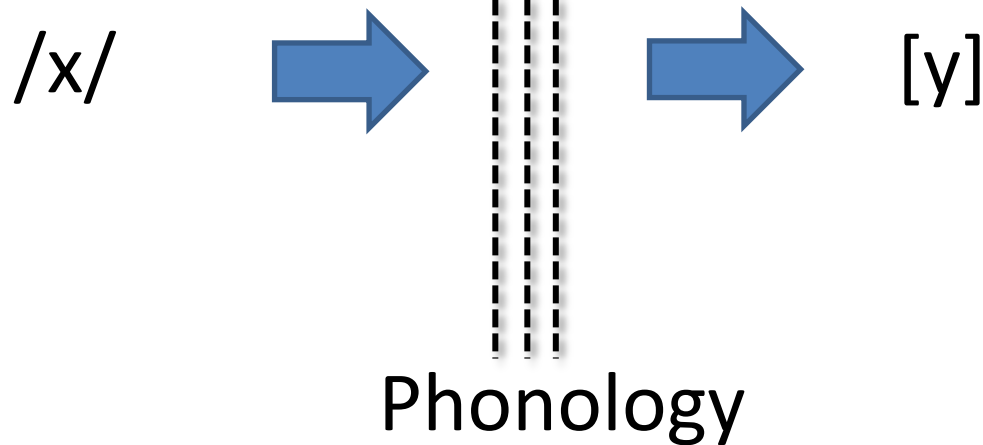
1) \*æ<sub>[-stress]</sub>

2) Unstressed æ => [ə]



## Allomorphy – preliminaries and basic assumptions

Again, it may be the case that speakers store redundant information, especially for frequent words. But again this does not affect the overall architecture of language. **All linguists agree** that some redundant information is not part of what we know.





# Allomorphy – preliminaries and basic assumptions

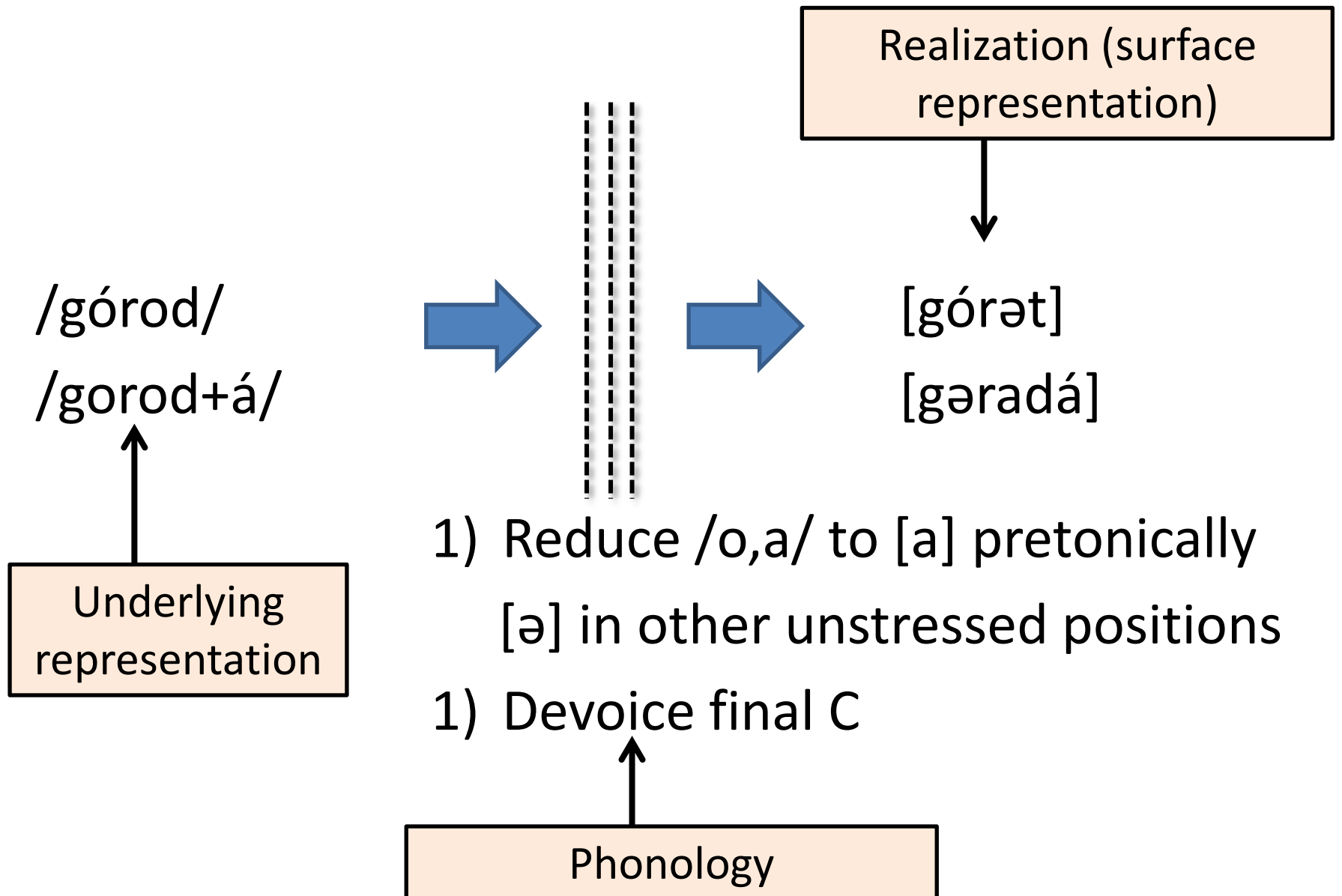
Another example, from Russian

[górət] ‘city (nom.sg.)’

[gəradá] ‘city (nom.pl)’



# Allomorphy – preliminaries and basic assumptions



Allomorphy – preliminaries and basic assumptions

## Summary of basic tools and assumptions

1) Underlying representations

≠

2) Surface representations

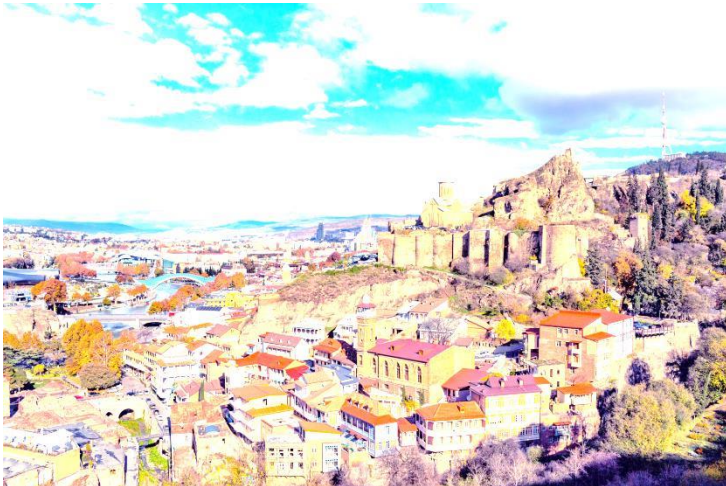
3) “Phonology”: a component which applies to the UR, possibly altering it, and results in a SR.

4) An architecture that is (to some extent) economic.

# Allomorphy

First approximation

“The scenario under which the same unit of meaning has two or more mutually exclusive realizations”

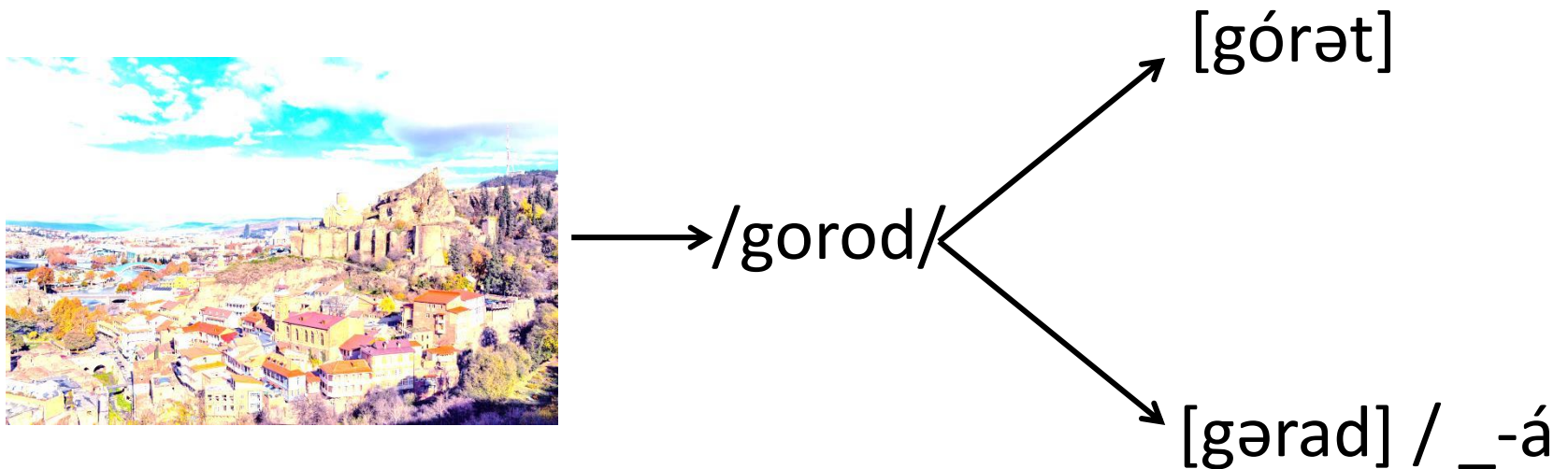


[górád]

[gərad] / \_-á

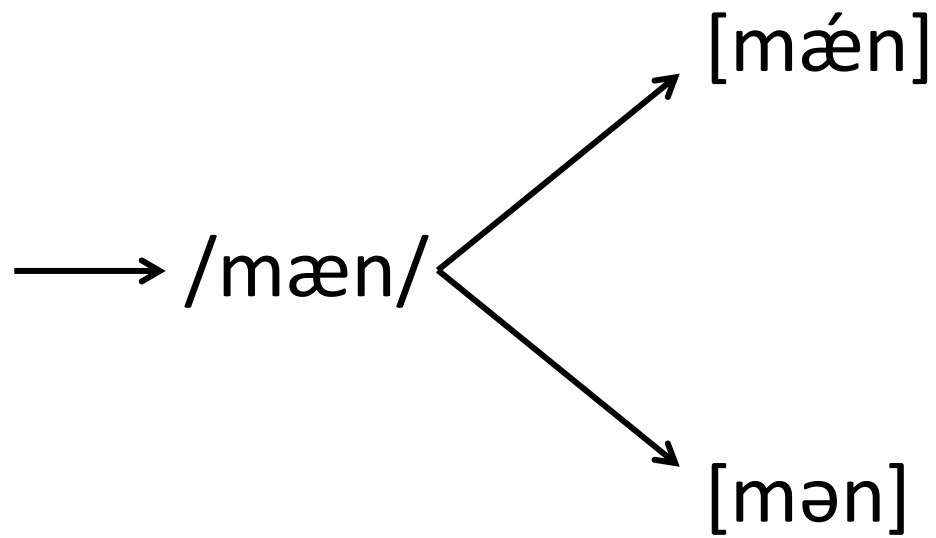
# Allomorphy

This representation “jumps a stage” in our architecture, namely the UR. Let us put it in:



# Allomorphy

Back to english



# Allomorphy

In both of these cases, the changes in the stem

1) have nothing to do with its meaning.

2) result from the sounds of the stem appearing in a different phonological configuration

3) reflect general rules of the phonology of the languages

4) Apply to single segments:

# Allomorphy

/g ó r o d/



Will be realized  
as [o] because  
stressed

Will be realized  
as [ə] because  
unstressed and  
not  
immediately  
pretonic

Will be realized  
as [t] because  
final



# Allomorphy

[ g ó r ə t ]

Will be realized  
as [o] because  
stressed

Will be realized  
as [ə] because  
unstressed and  
not  
immediately  
pretonic

Will be realized  
as [t] because  
final

# Allomorphy

/g o r o d á/

Will be realized  
as [ə] because  
unstressed and  
not  
immediately  
pretonic

Will be realized  
as [a] because  
immediately  
pretonic

Will be realized  
as [d] because  
not final

# Allomorphy

[g ə r a d á]



Will be realized as [ə] because unstressed and not immediately pretonic

Will be realized as [a] because immediately pretonic

Will be realized as [d] because not final

# Allomorphy

Now recall:

First approximation

“The scenario under which the same unit of meaning has two or more mutually exclusive realizations”

- In both cases examined, it is not the unit of meaning that has two realizations, but rather the segment.

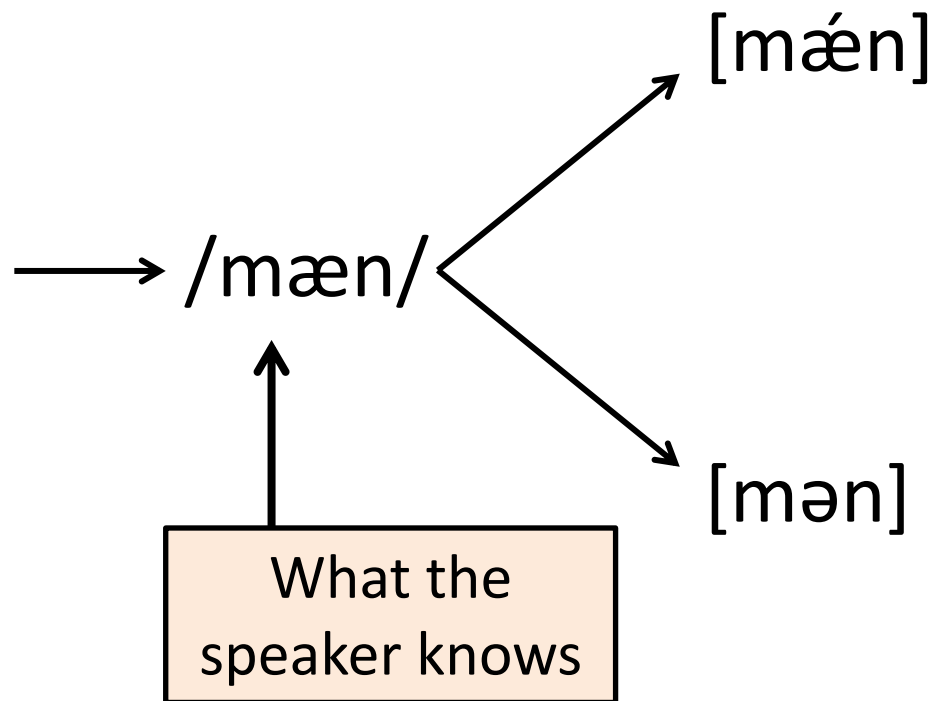
# Allomorphy

- The unit of meaning *comes to have* two realizations because one or more of its segments does, but for the unit of meaning this is **epiphenomenal**.

# Allomorphy

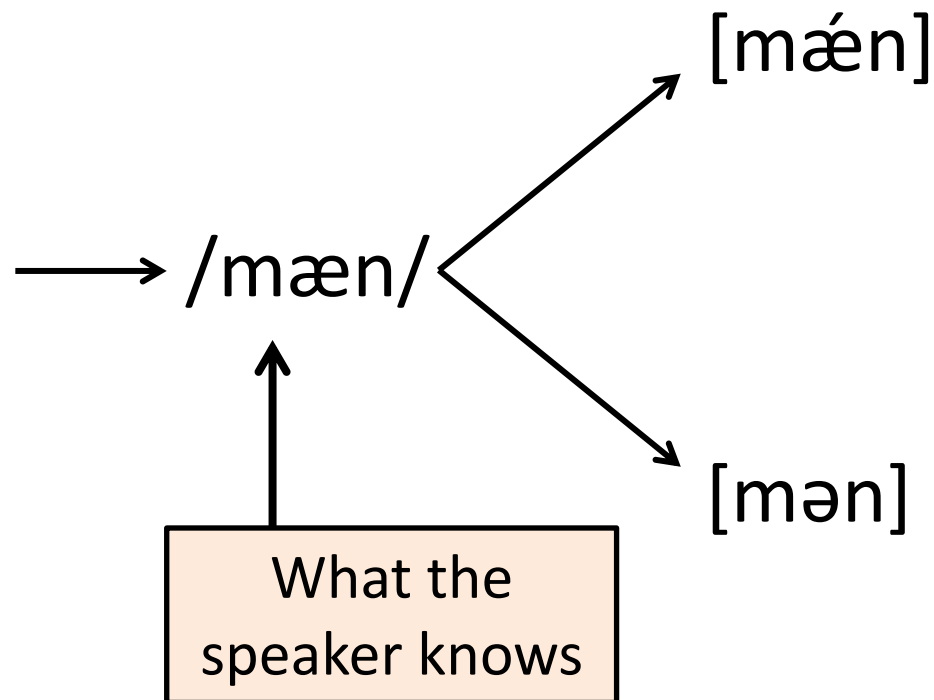
- The unit of meaning *comes to have* two realizations because one or more of its segments does, but for the unit of meaning this is **epiphenomenal**.
- Crucially, what the speaker *knows* in this case is only *one* form:

# Allomorphy



# Allomorphy

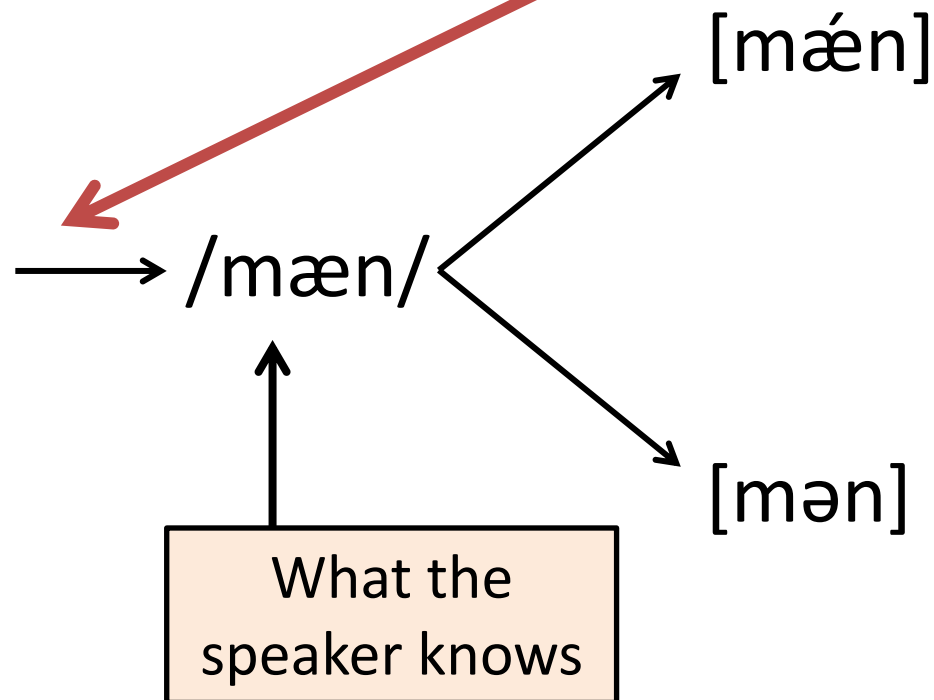
Indeed, in our architecture, the unit of meaning is never in direct relation with its realizations. For it to have two correspondents, the split must occur “earlier.”





# Allomorphy

Indeed, in our architecture, the unit of meaning is never in direct relation to its realizations. For it to have two correspondents, the split must occur “**earlier.**”



# Allomorphy?

## Argentinian Spanish 1

	singular	plural
'bear'	óso	óso <sup>h</sup>
'the bear'	elóso	lososo <sup>h</sup>
'pit'	póso	póso <sup>h</sup>
'the bear'	elpóso	lo <sup>h</sup> poso <sup>h</sup>

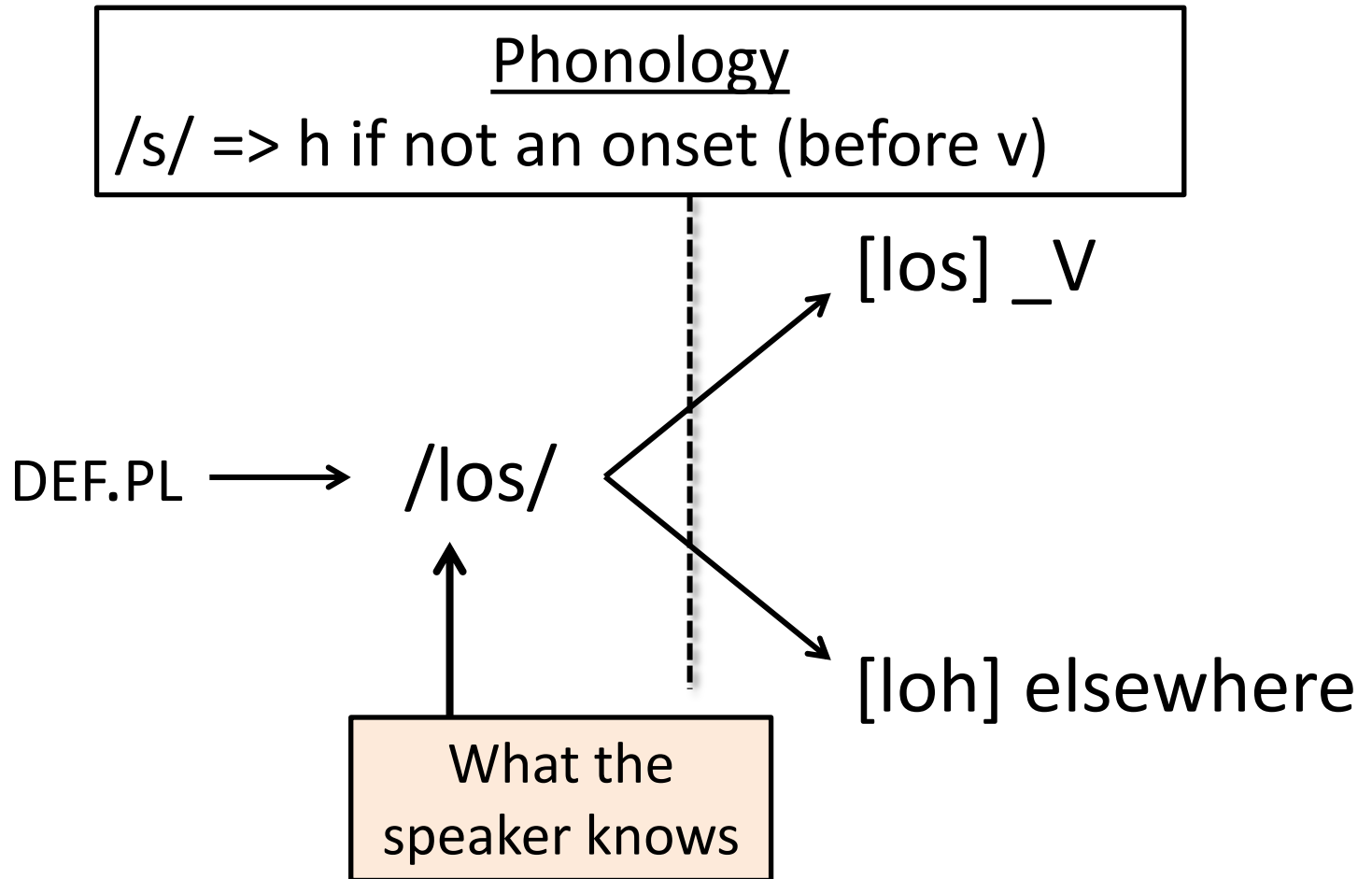
# Allomorphy?

## Argentinian Spanish 1

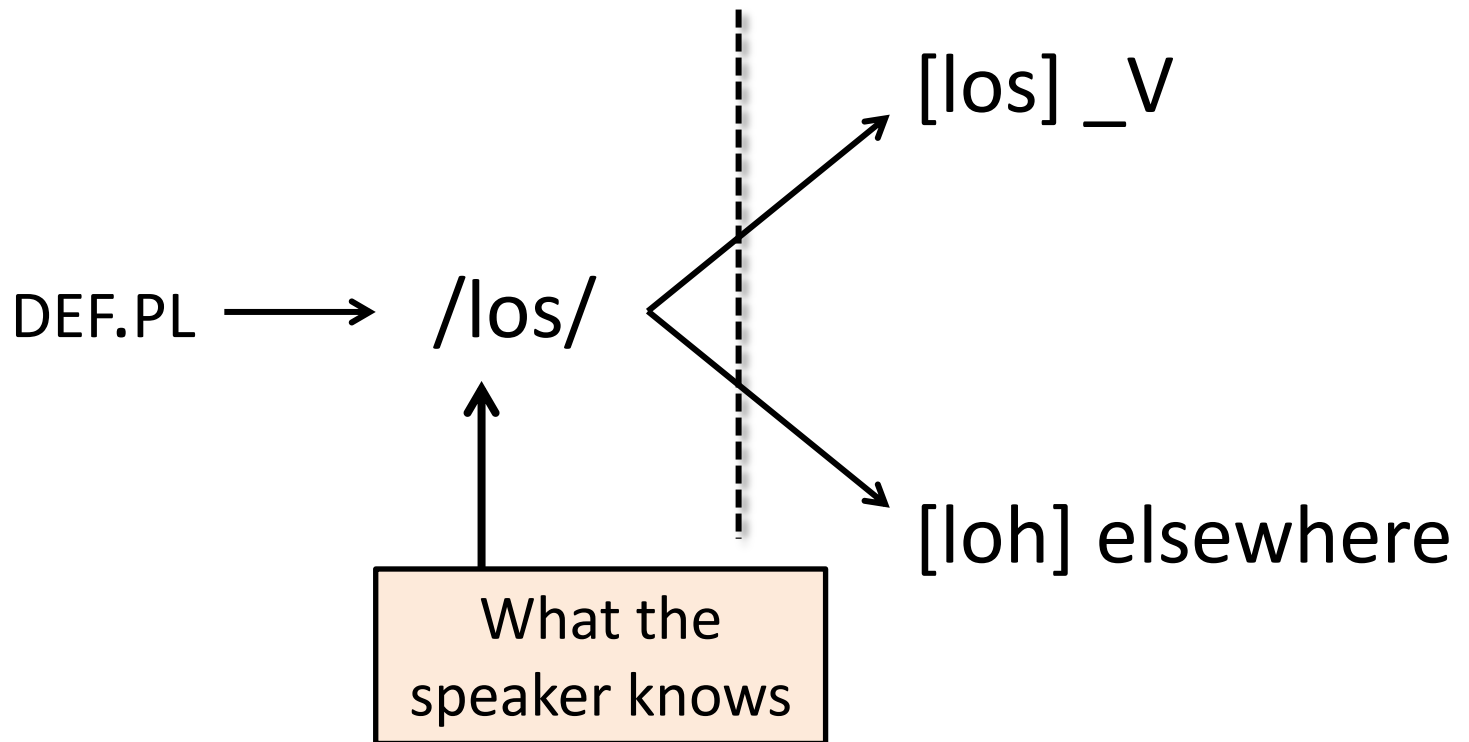
	singular	plural
'bear'	óso	óso <sup>h</sup>
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'pit'	póso	póso <sup>h</sup>
'the bear'	elpóso	lo <sup>h</sup> poso <sup>h</sup>

Argentinian Speakers find it hard to pronounce the [h] in English words like 'house' [haʊs]. Why?

# Not allomorphy



# Not allomorphy



What about the UR of [osoh] 'bears'?

# Some terms

- In Argentinian Spanish, the only way to get a phonetic [h] is through /s/.
- This implies that [s] and [h] cannot appear in the same environment.

=> They are in **Complementary Distribution**

# Some terms

- Remember Russian /gorod/ => [gorət]
- Can we say that the [t] and [d] are in complementary distribution?
- No: [ton] and [don] are both possible words in Russian. This is a **minimal pair**, a pair differing in only one sound. It proves the different phonemic origins of [t] and [d] in Russian.

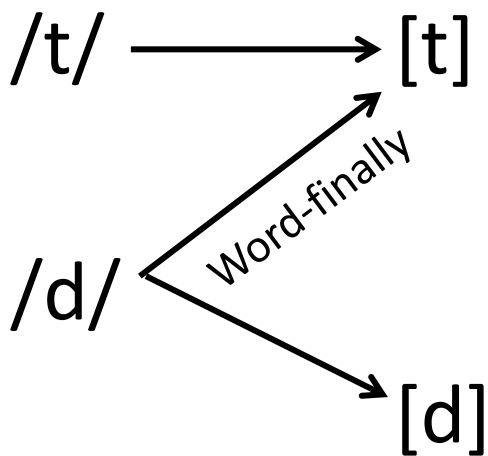
# Some terms

- Remember Russian /gorod/ => [gorət]
- What we *can* say is that the distinction between /t/ and /d/ is neutralized word-finally. This is **neutralization**.



# Some terms

## ▪ Neutralization



Allophony: two  
realizations  
corresponding to  
the same phoneme

# Allomorphy

Consider now the following case from Hebrew

	<i>singular</i>	<i>plural</i>	
'line'	pas	pas-im	Non-alternating stem
'tray'	tas	tas-im	
		but	
'tax'	mas	mis-im	Alternating stem

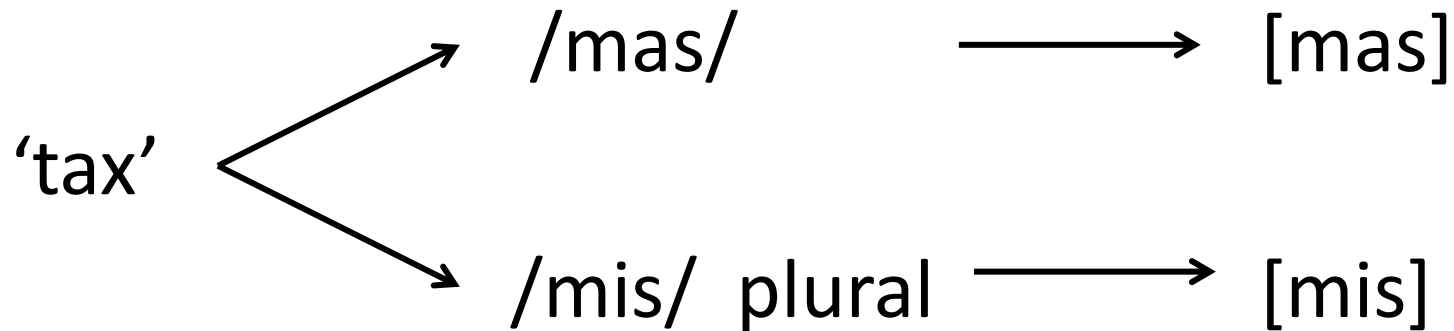
# Allomorphy

There is no phonological reason for this alternation.

Moreover, it is the only word in Hebrew to display this alternation in this environment.

# Allomorphy

In such cases, it seems inescapable and uncontroversial to assume **two underlying representations**



# Allomorphy - definition

“The scenario under which the same unit of meaning has two or more mutually exclusive underlying representations”

(underlying = lexical, stored)

# Allomorphy - definition

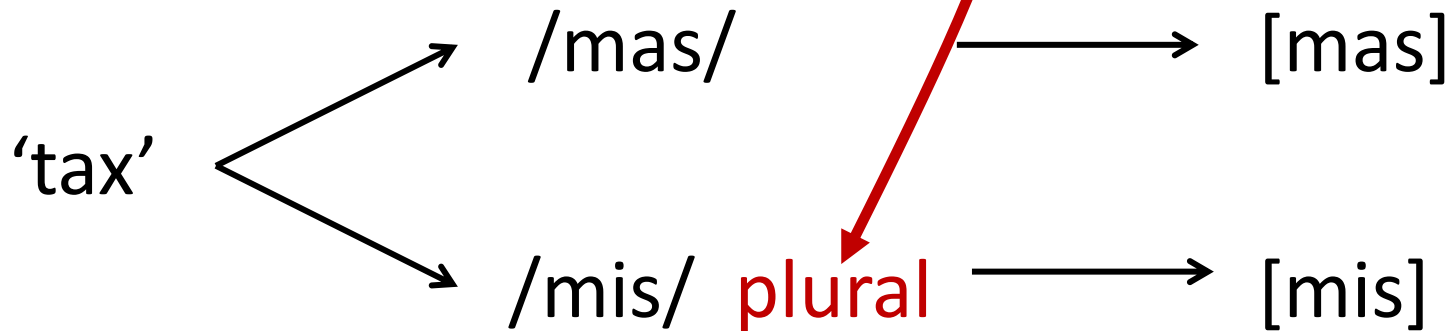
“The scenario under which the same unit of meaning has two or more mutually exclusive underlying representations”

(underlying = lexical, stored)

To be distinguished from epiphenomenal allomorphy, wherein there's only one UR.

# Conditioning

The allomorphy from Hebrew was conditioned by **grammatical information**. This is called “grammatical conditioning.”



# Conditioning

Although we will discuss such cases, our main concern will be with **Phonologically-conditioned allomorphy**.



# Phon-con Allomorphy

## Argentinian Spanish

	1sg.indic	infinitive	
'drink'	<b>tóm</b> -o	<b>tom</b> -ár	Non-alternating stem
'ring'	<b>swén</b> -o	<b>son</b> -ár	Alternating stem

# Phon-con Allomorphy

## Argentinian Spanish 2

	1sg.indic	infinitive
'drink'	<b>tóm</b> -o	<b>tom</b> -ár

Non-  
alternating  
stem

'ring'	<b>swén</b> -o	<b>son</b> -ár
--------	----------------	----------------

Alternating  
stem

Spanish phonology does not rule out either stressed [ó], as shown, or unstressed [we], as in [kwestjón].

# Phon-con Allomorphy

## Palestinian Arabic

	3msg.past	+3ms.obj
'write'	kátab	kátab- <b>o</b>
Neg.		katab- <b>ó</b> :-ʃ
'throw'	ráma	ramá- <b>ː</b>
Neg.		rama- <b>hó</b> :-ʃ

# Phon-con Allomorphy

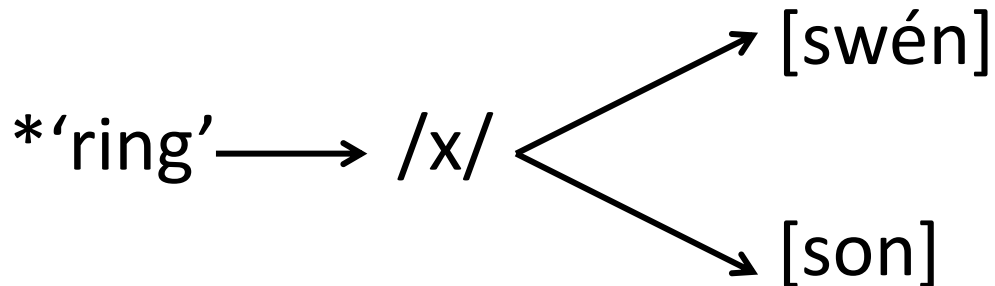
If 3ms.obj can be realized [ho:], then why not have this realization throughout? Arabic *phonology* does not rule out *katabho, katabhof, ramaho...*

	3msg.past	+3ms.obj
'write'	kátab	kátab- <b>o</b>
Neg.		katab- <b>ó:-f</b>
'throw'	ráma	ramá-:
Neg.		rama- <b>hó:-f</b>

# Phon-con Allomorphy

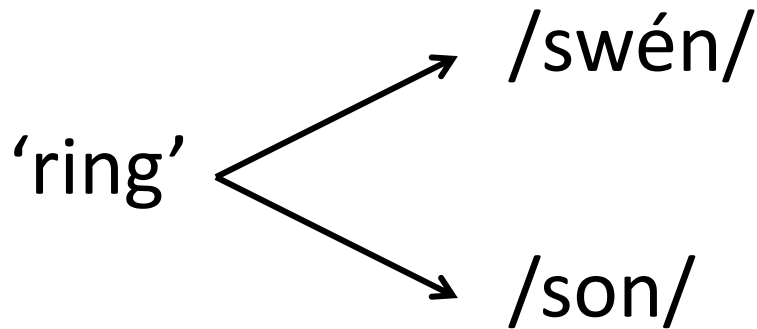
The phonology of these languages does not automatically provide the two realizations;

A priori, there is no /x/ such that it can be fed into the phonological filter of Spanish and make the following correct:



# Phon-con Allomorphy

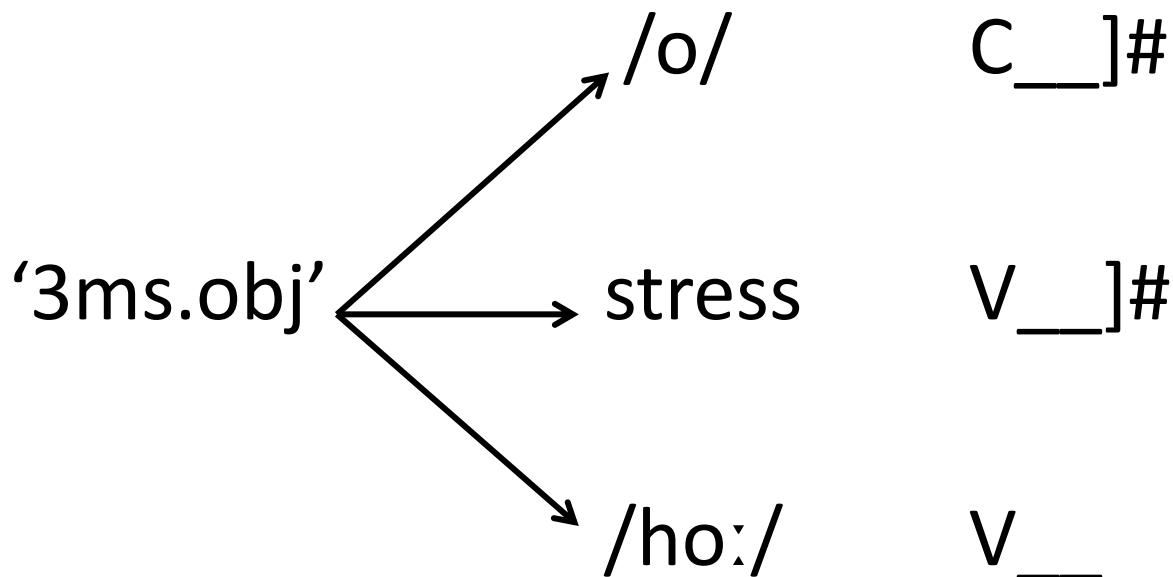
Again, it seems more correct to assume **two underlying representations**



Stress, a phonological entity, determines which allomorph will be selected.

# Phon-con Allomorphy

Palestinian



Again, the phonological environment determines which allomorph will be selected.

# Phonological Optimization

Hiatus (a sequence of two tautosyllabic vowels) is allowed in French:

[neã]            ‘nothingness’

[zeã]            ‘immense’

[neõ]            ‘neon’

[zeoloji]        ‘geology’



# Phonological Optimization

Such hiatus is sometimes created by the concatenation of prefix+base

[pχe-okype]	‘worried’
[pχe-ãgaze]	‘pre-committed’
[pχe-buʃe]	‘pre-capped’
[pχe-nazalize]	‘pre-nasalized’

# Phonological Optimization

But after some prefixes, a consonant surfaces if and only if hiatus will result from prefix+stem:

[dez-okype]

‘vacated’

[dez-ãgaze]

‘uncommitted’

[de-bufe]

‘uncapped’

[de-nazalize]

‘denasalized’

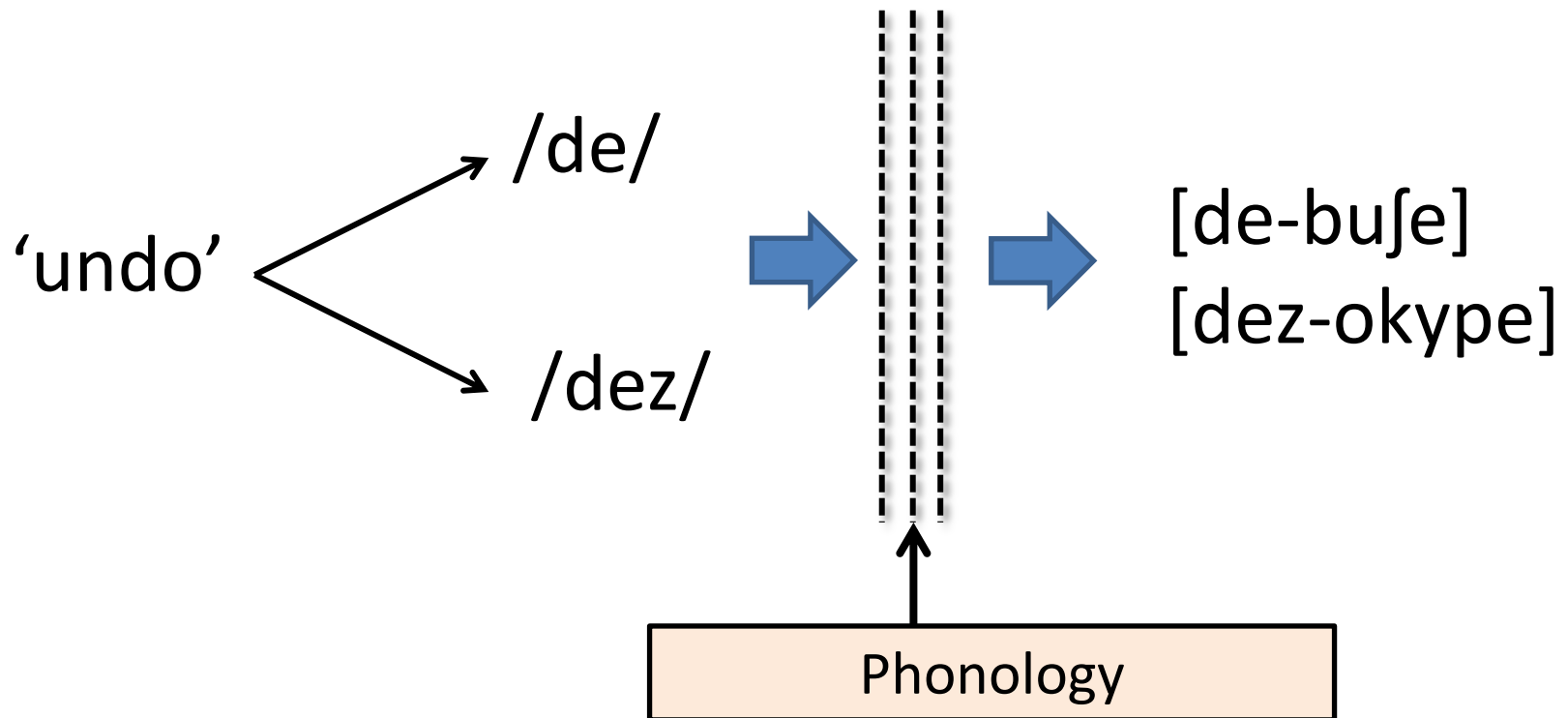
# Phonological Optimization

The choice of [dez] over [de] before a vowel prevents hiatus and makes the form better phonologically. It is **phonologically-optimizing**.

But the possibility of preventing hiatus, and the specific strategy to prevent it, are specific to this prefix.

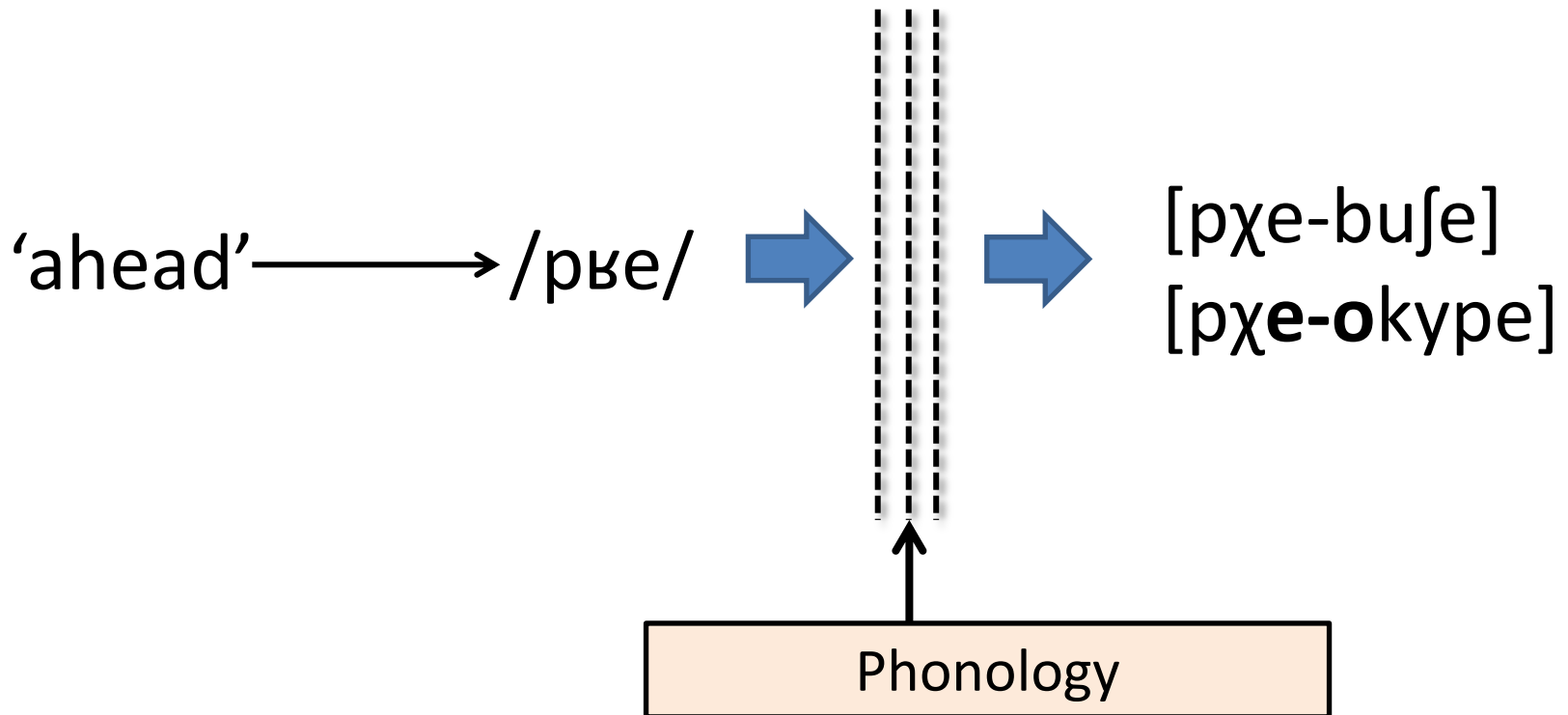
# Phonological Optimization

For these reasons, many phonologists assume the following architecture



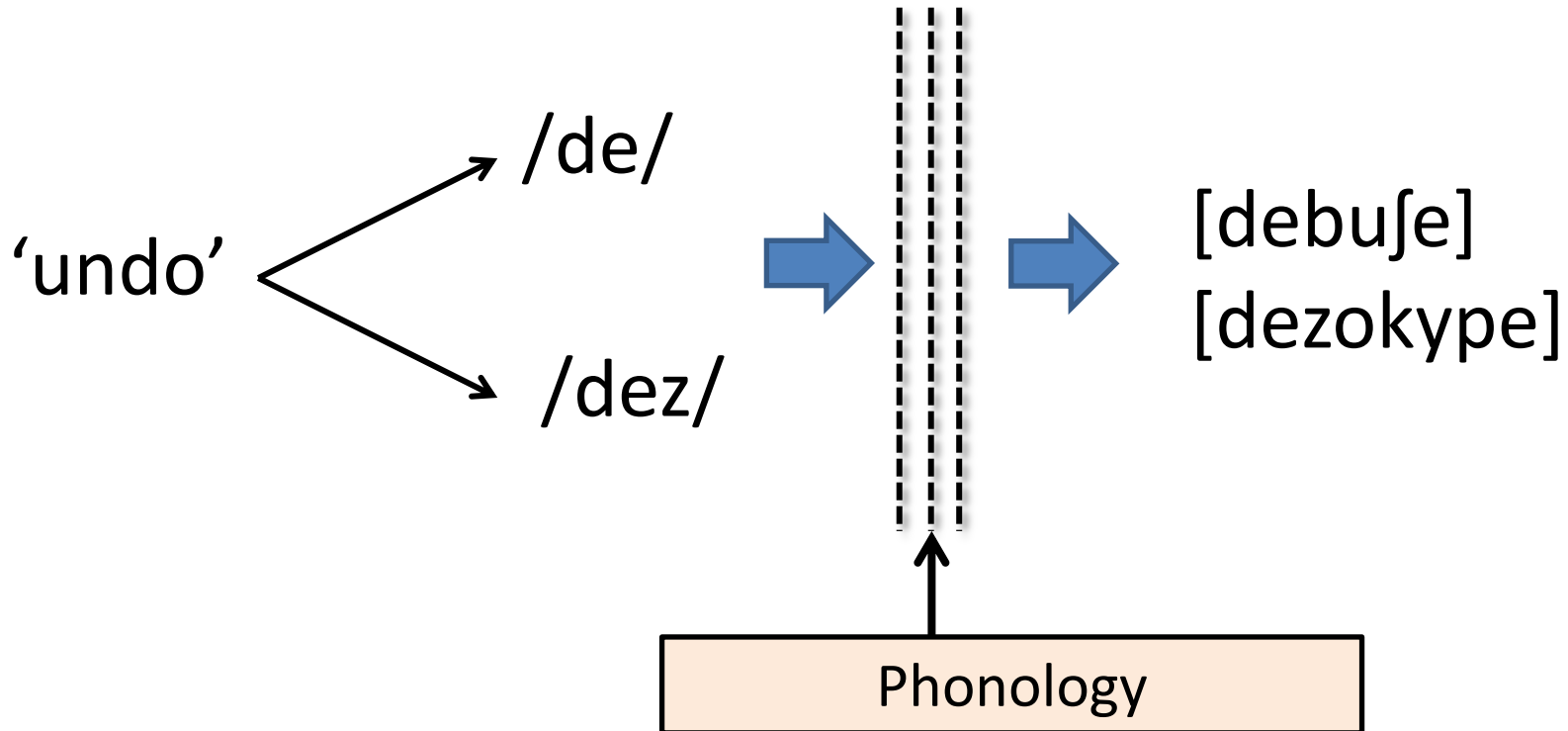
# Phonological Optimization

This contrasts with the situation in other prefixes, where there aren't two allomorphs



# Phonological Optimization

Phonology here is doing something quite different from what we saw before: it not only makes a UR conform to the rules of the language, but also selects between URS



# Conditioning and optimization

But other phonologists argue against this view, for two main reasons:

- 1) It mixes levels, in that phonology is no longer interpretive.

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- 1) It mixes levels, in that phonology is no longer interpretive.
- 2) Many cases of phonological conditioning are not optimizing...

More on this in the next class. For now -

# Summary of 1st class

- All phonological approaches must have at least two levels of linguistic reality.
- In realization, there are at least three: concept, UR, and SR
- When one UR is split into two SR, it is **epiphenomenal allomorphy** – in fact only phonology is at work.

# Summary of 1st class

- Allomorphy is one concept being split into two URs.
- Allomorphy can be conditioned by the phonological environment or by the grammatical environment (everything else)
- Within phonologically-conditioned allomorphy, there are optimizing and non-optimizing cases.

# Summary of 1st class

- There is a debate whether optimizing cases are the result of the application of phonology or not.

# In the next classes

- How is allomorph selection in the phonology formalized?
- The autosegmental alternative.
- What is so problematic about allomorph selection in the phonology?
- The limits of allomorphy.

# In the next classes

- Allomorphy and the architecture of grammar.
- Are all allomorphies equal? Weak and strong suppletions
- Is allomorphy really that bad? Paradigm Uniformity

Etc.

# Exercise 1

## Cree (USA, Canada)

### A) [p], [b]

1. [pahki] "en partie"
2. [nissosa:p] "douze"
3. [tamispi:] "quand"
4. [paskwa:w] "prairie"
5. [asaba:p] "fil"
6. [wa:bame:w] "il le voit"
7. [na:be:w] "homme"
8. [a:bihta:w] "moitié"
9. [nibimohtan] "je marche"
10. [si:si:bak] "canards"

### B) [t], [d]

1. [tahki] "toujours"
2. [miht[et] "beaucoup"
3. [nisto] "trois"
4. [tagosin] "il arrive"
5. [mi:bit] "dent"
6. [me:dawe:w] "il joue"
7. [kodak] "un autre"
8. [adim] "chien"
9. [adihk] "caribou"
10. [iskode:w] "feu"

# Exercise 2

## Coréen

[l], [r]

- |             |            |
|-------------|------------|
| 1. [tal]    | "lune"     |
| 2. [talda]  | "doux"     |
| 3. [ɔlmana] | "combien"  |
| 4. [sul]    | "vin"      |
| 5. [solhwa] | "légende"  |
| 6. [kirim]  | "dessin"   |
| 7. [ke:ri]  | "distance" |
| 8. [noraj]  | "chanson"  |
| 9. [irure]  | "étendues" |
| 10. [saram] | "personne" |



# Exercise 3

## Slovaque

[f], [v], [w]

- |              |               |                  |              |
|--------------|---------------|------------------|--------------|
| 1. [vatra]   | "feu de camp" | 11. [farba]      | "peinture"   |
| 2. [splaw]   | "vanne"       | 12. [nafta]      | "gaz"        |
| 3. [kriwka]  | "courbe"      | 13. [fa:dni]     | "monotone"   |
| 4. [krava]   | "vache"       | 14. [nafu:kani:] | "vaniteux"   |
| 5. [tʃervi]  | "larves"      | 15. [filozof]    | "philosophe" |
| 6. [na:zow]  | "titre"       |                  |              |
| 7. [vjera]   | "foi"         |                  |              |
| 8. [vedro]   | "seau"        |                  |              |
| 9. [stowka]  | "centaine"    |                  |              |
| 10. [ʃewtʃa] | "jeune fille" |                  |              |

# Exercise 4

## Yiddish [oj, o]

	unsuffixed	suffixed	
a. Nouns	sod	sojdəs	'secret (sg-pl)'
	tov	tojvəm	'good (sg-pl)'
	of	ojfəs	'chicken (sg-pl)'
	bod	bodṅ	'bath (sg-pl)'
	mojd	mojdṅ	'young woman'
b. Verbs	lojf	lojfṅ	'run (1sg-pl)'
	ojsbod	ojsbodṅ	'wash'