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:

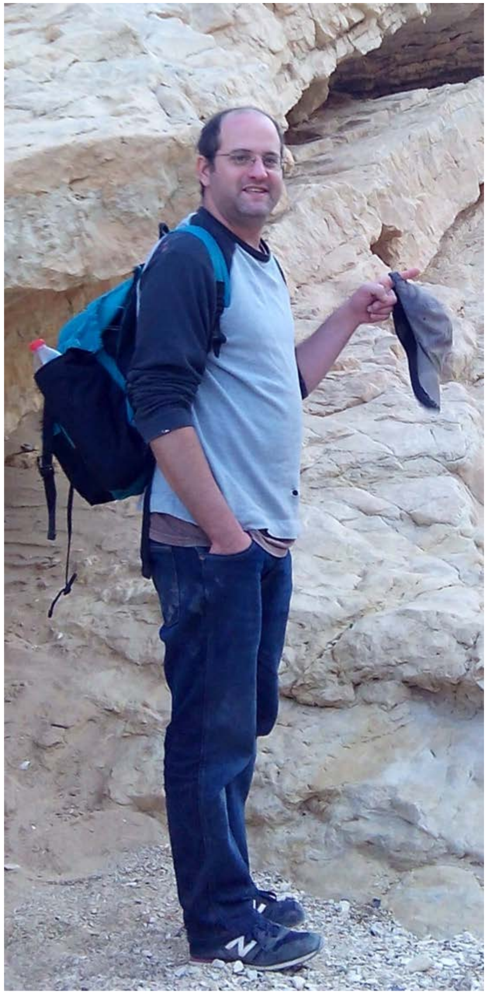
What does a speaker **know** when s/he knows a language?

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]



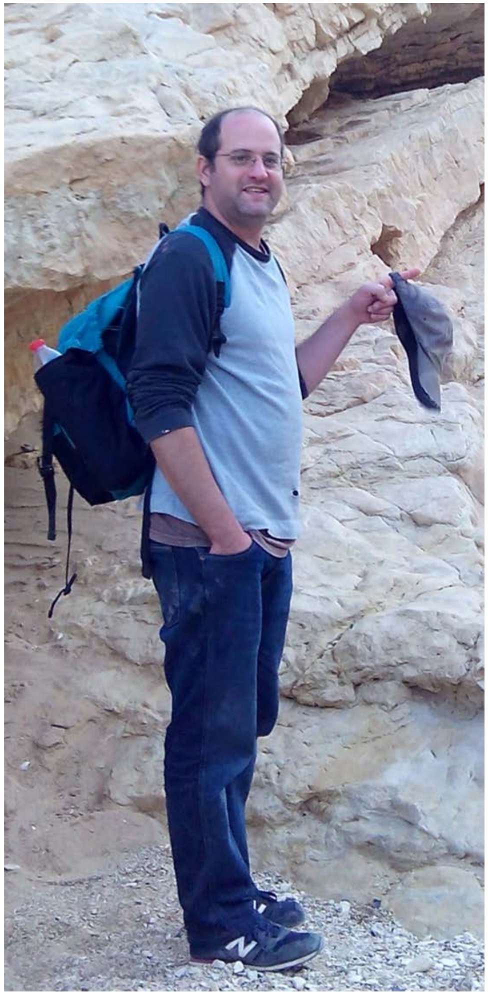
Allomorphy – preliminaries and basic assumptions

[mæn]

[mæn-li]

[mæn-hʊd]

[mæn-meɪd]



Allomorphy – preliminaries and basic assumptions

[mæn]

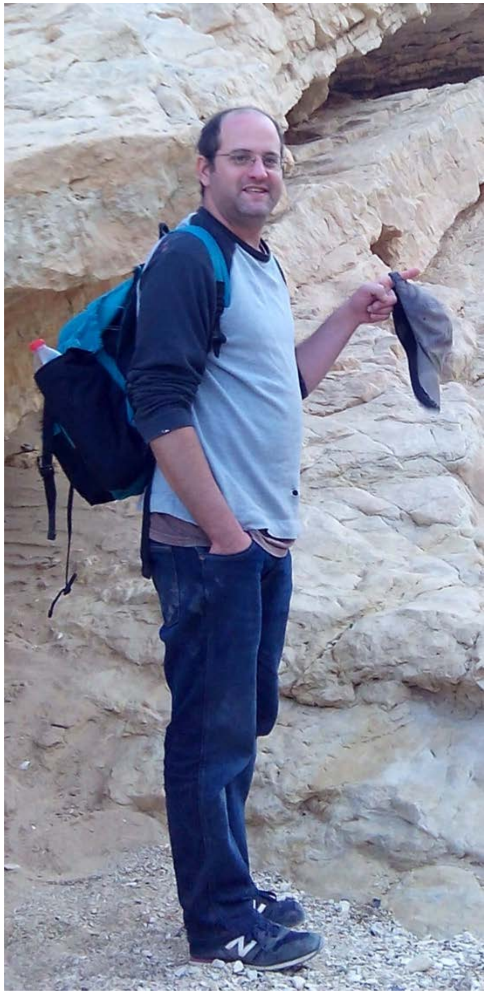
[mæn-li]

[mæn-hʊd]

[mæn-meɪd]

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

m+æ+n



Allomorphy – preliminaries and basic assumptions

[mæn]

[mæn-li]

[mæn-hʊd]

[mæn-meɪd]

[poʊst-mən]

Is this not the same entity?

Allomorphy – preliminaries and basic assumptions

There is a reason for this pronunciation:

[m**ǽ**n]

[m**ǽ**n-li]

[m**ǽ**n-hʊd]

[m**ǽ**n-meɪd]

[póʊst-m**ə**n]

Indeed, <u>unstressed [æ] reduces to [ə] in English</u>

Again, what does the speaker know?

Allomorphy – preliminaries and basic assumptions

Again, what does the speaker know?

1) m+æ+n
2) $*æ_{[\text{-stress}]}$

Is this enough? *[poʊstmɪn, poʊstmn]

Again, what does the speaker know?

1) m+æ+n
2) *$æ_{[-stress]}$ *and*
3) Unstressed æ => [ə]

Allomorphy – preliminaries and basic assumptions

Again, what does the speaker know?

1) m+æ+n ⇐ specific information

1) *æ$_{\text{[-stress]}}$
2) Unstressed æ => [ə]

⇐ General rule

Allomorphy – preliminaries and basic assumptions

Again, what does the speaker know?

1) m+æ+n ⇐ specific information

1) $*æ_{[-stress]}$
2) Unstressed æ => [ə]

⇐ General rules

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

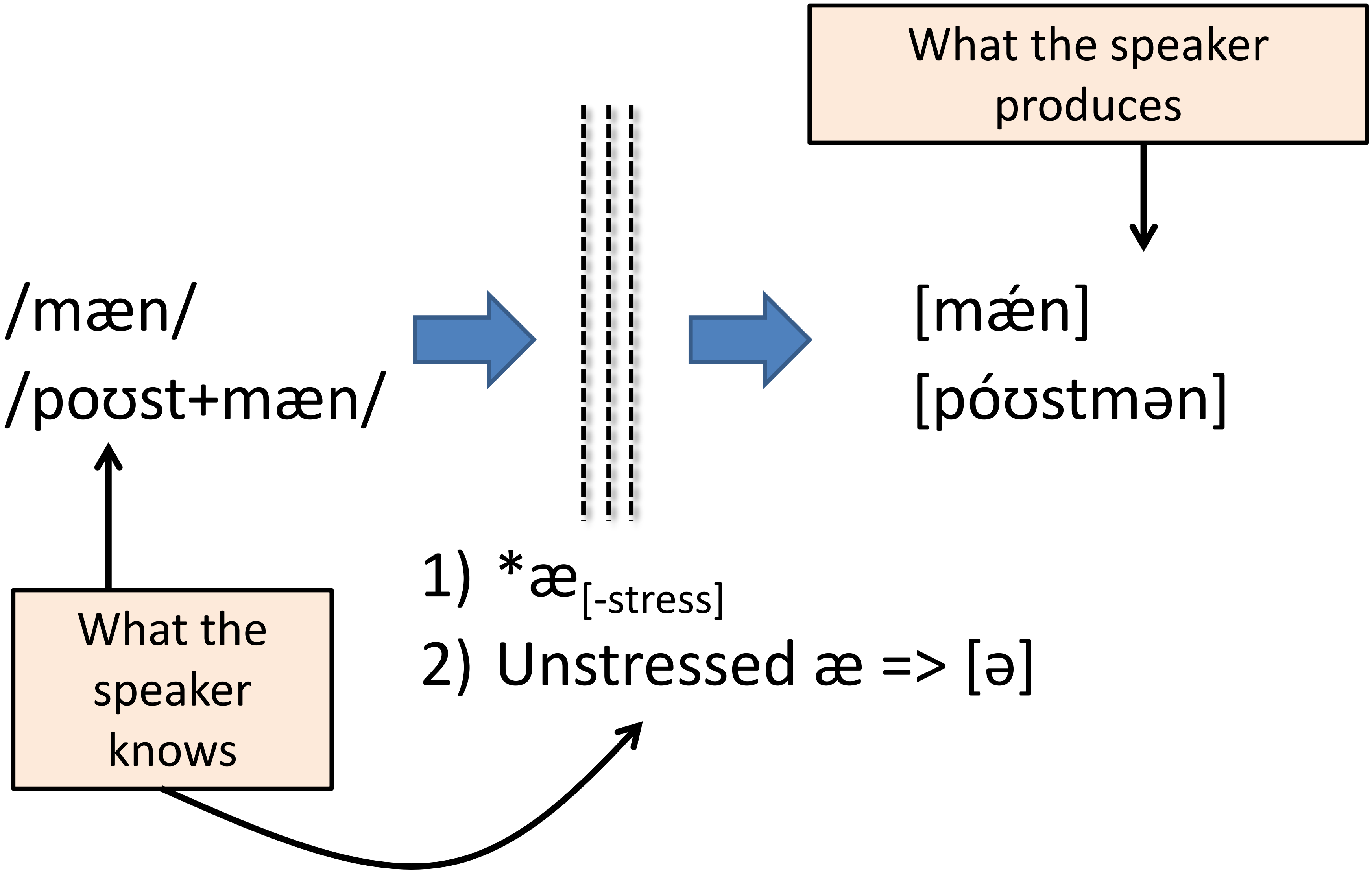
How the system works

/mæn/ → [mǽn]

/poʊst+mæn/ → [póʊstmən]

1) *$\text{æ}_{[\text{-stress}]}$
2) Unstressed æ => [ə]

Allomorphy – preliminaries and basic assumptions



Allomorphy – preliminaries and basic assumptions

Realization (surface representation)

/mæn/

/poʊst+mæn/

[mǽn]

[póʊstmən]

1) *$\text{æ}_{[\text{-stress}]}$

2) Unstressed æ => [ə]

Underlying representation

Phonology

Allomorphy – preliminaries and basic assumptions

Objection no 1: maybe *postman* does not really include *man*, or that its pronunciation is already part of the knowledge of the speaker:

/mæn/ → [mǽn]

/poʊstmən/ → [póʊstmən]

1) *$æ_{[-stress]}$

2) Unstressed æ => [ə]

Phonology has no effect

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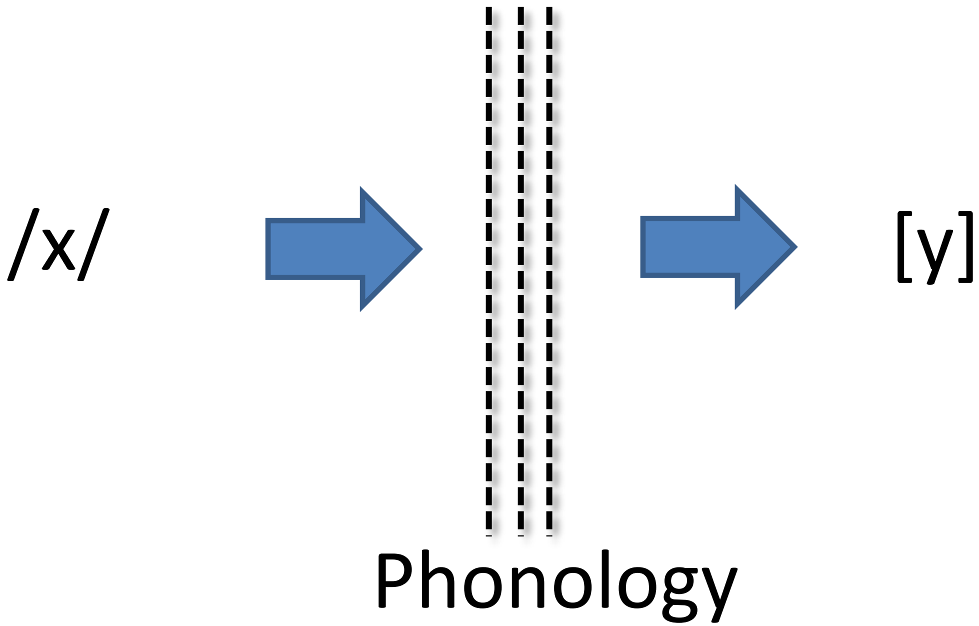
That may be the case for *postman* and *man*. But it does not affect the overall architecture of language. **All linguists agree** that there can be a difference between what we know or intend to produce and what we produce.



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/ → → [mǽn]

/poʊstmæn/ → → [póʊstmən]

1) $*æ_{[-stress]}$
2) Unstressed æ => [ə]

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/ → [mǽn]

/poʊstmæn/ → [póʊstmən]

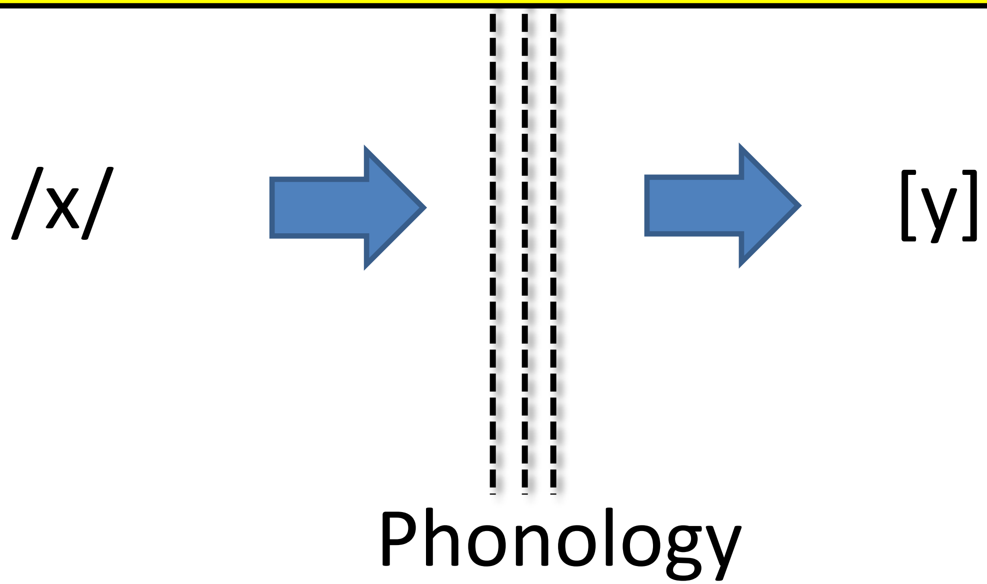
1) *æ$_{\text{[-stress]}}$

2) Unstressed æ => [ə]

... indeed, this is all the speaker **must** know. But this is not our goal! Our question is what the speaker really knows!

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

[g**ó**r**ə**t] ‘city (nom.sg.)’

[g**ə**r**ad**á] ‘city (nom.pl)’

Allomorphy – preliminaries and basic assumptions

Realization (surface representation)

/górad/

/gorad+á/

[górat]

[gəradá]

Underlying representation

1) Reduce /o,a/ to [a] pretonically
   [ə] in other unstressed positions

1) Devoice final C

Phonology

Summary of basic tools and assumptions

1) Underlying representations

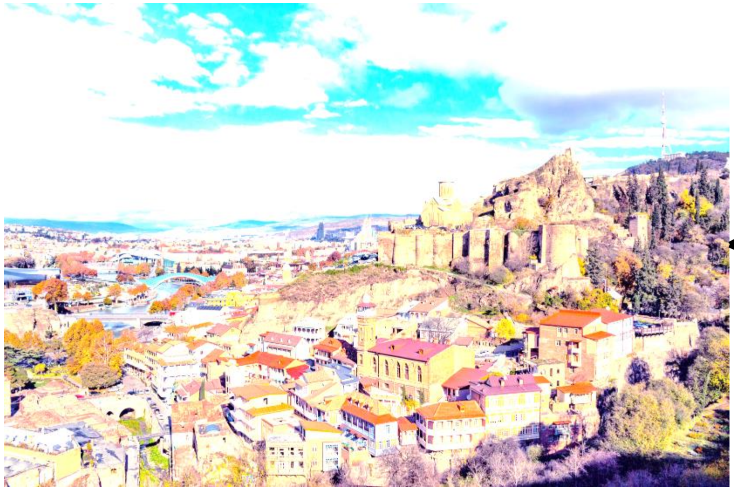
   ≠

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"

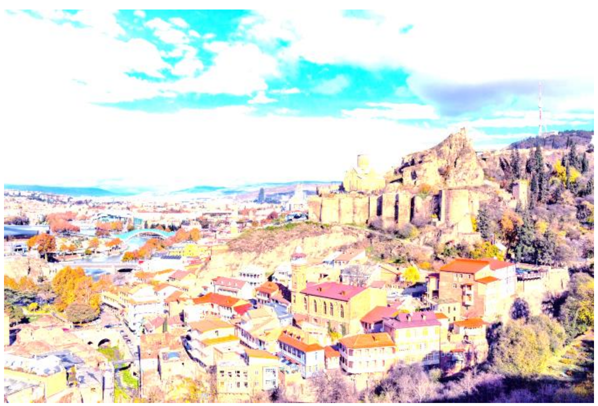


[górət]

[gərad] / _-á

Allomorphy

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



→ /gorad/ → [górət]

/gorad/ → [gərad] / _-á

Allomorphy

Back to english

→ /mæn/

[mán]

[mən]

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 a 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 o 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 has one, but this is **epiphenomenal**.

Allomorphy

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

- Crucially, what the speaker *knows* in this case is only *one* form:

Allomorphy

/mæn/

[mán]

[mən]

What the speaker knows

Allomorphy

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

/mæn/ → [mán]

/mæn/ → [mən]

What the speaker knows

Allomorphy

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

/mæn/

[mán]

[mən]

What the speaker knows

Allomorphy

Consider now the following case from Hebrew

	singular	*plural*	
'line'	pas	pas-im	Non-alternating stem
'tray'	tas	tas-im	
	but		
'tax'	mas	m**i**s-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**

‘tax’ → /mas/ → [mas]

‘tax’ → /mis/ plural → [mis]

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."

/mas/ → [mas]

'tax'

/mis/ plural → [mis]

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’	t**ó**m-o	t**o**m-ár	Alternating stem
‘ring’	s**wé**n-o	s**o**n-ár	Non-alternating stem

Phon-con Allomorphy

Argentinian Spanish

	1sg.indic	infinitive	
‘drink’	t**ó**m-o	t**o**m-ár	Alternating stem
‘ring’	s**wé**n-o	s**o**n-ár	Non-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-**o**
Neg.		katab-**ó**ː-ʃ
'throw'	ráma	ram**á**-ː
Neg.		rama-**hó**ː-ʃ

Phon-con Allomorphy

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

	3msg.past	+3ms.obj
'write'	kátab	kátab-**o**
Neg.		katab-**ó**ː-ʃ
'throw'	ráma	ramáː
Neg.		rama-**hó**ː-ʃ

Phon-con Allomorphy

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

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

* [swén]

‘ring’ ⟶ /x/

[son]

Phon-con Allomorphy

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

/swén/

'ring'

/son/

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

Phon-con Allomorphy

Palestinian

‘3ms.obj’	/o/	C__]#
	stress	V__]#
	/hoː/	V__

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’
[ʒeã]	‘immense’
[neõ]	‘neon’
[ʒeoloʒi]	‘geology’

Phonological Optimization

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

[pχe-okype]	‘worried’
[pχe-ãgaʒe]	‘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:

[de**z**-okype]	‘vacated’
[de**z**-ãgaʒe]	‘uncommitted’
[de-buʃe]	‘uncapped’
[de-nazalize]	‘denasalized’

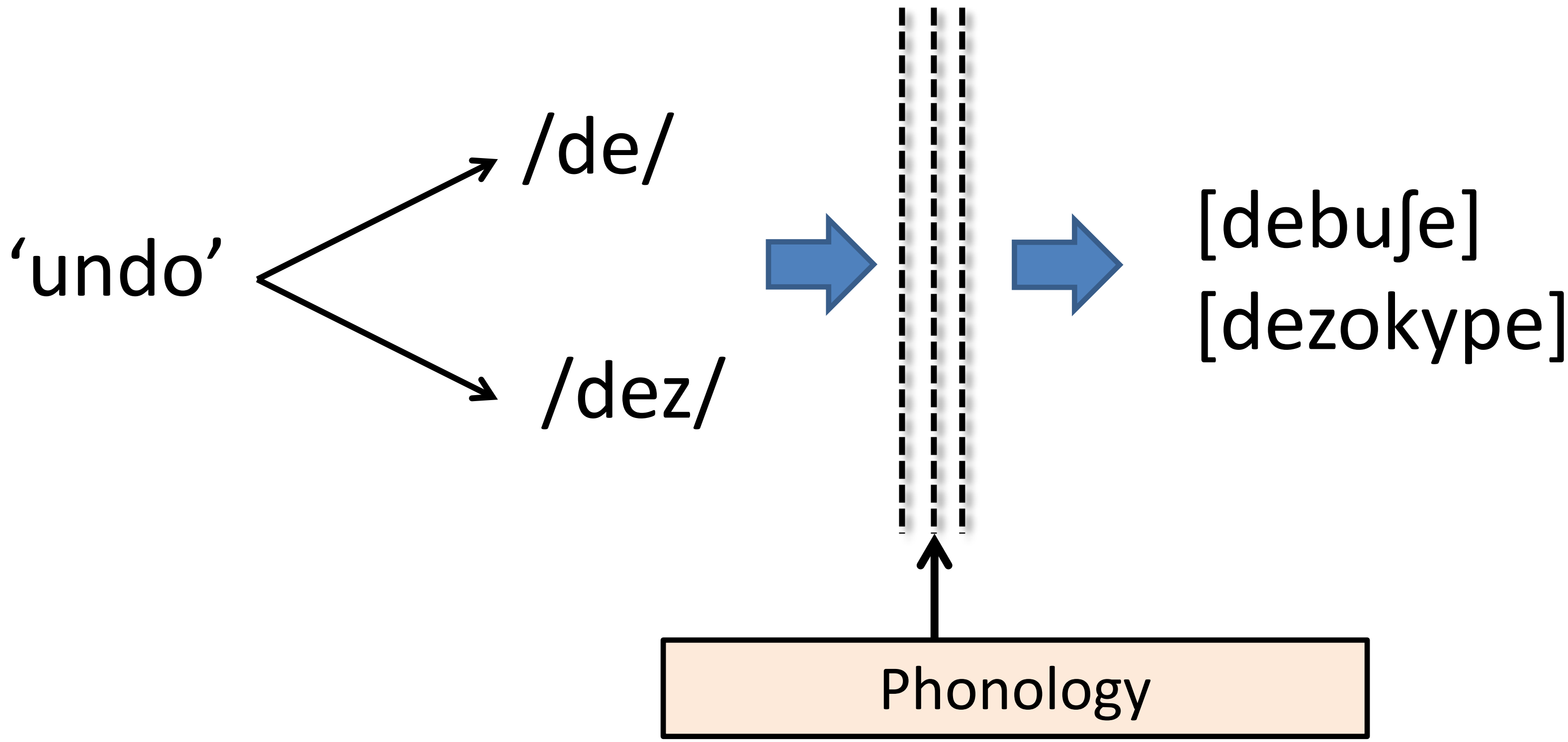
Phonological Optimization

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.

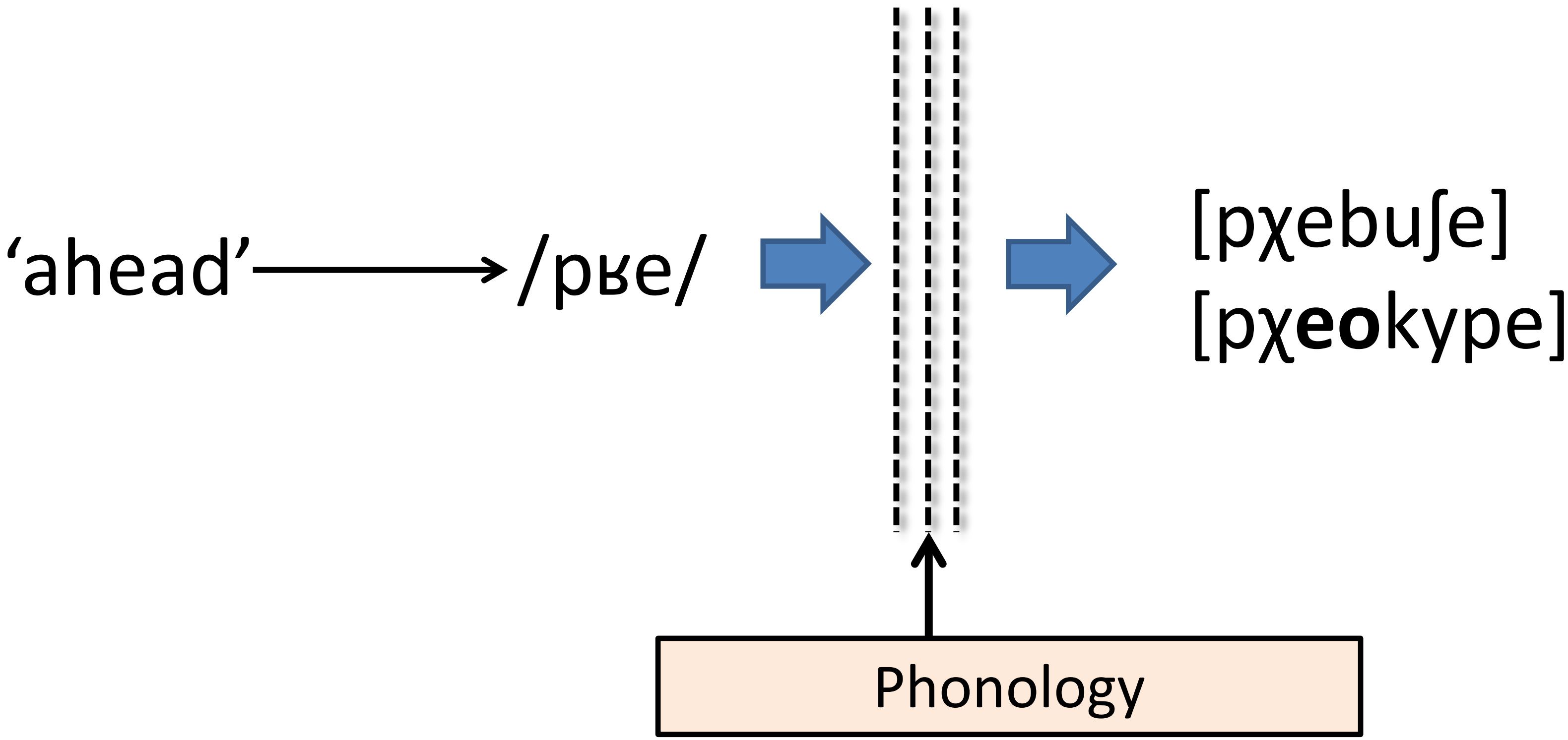
Phonological Optimization

For these reasons, many phonologists assume the following architecture



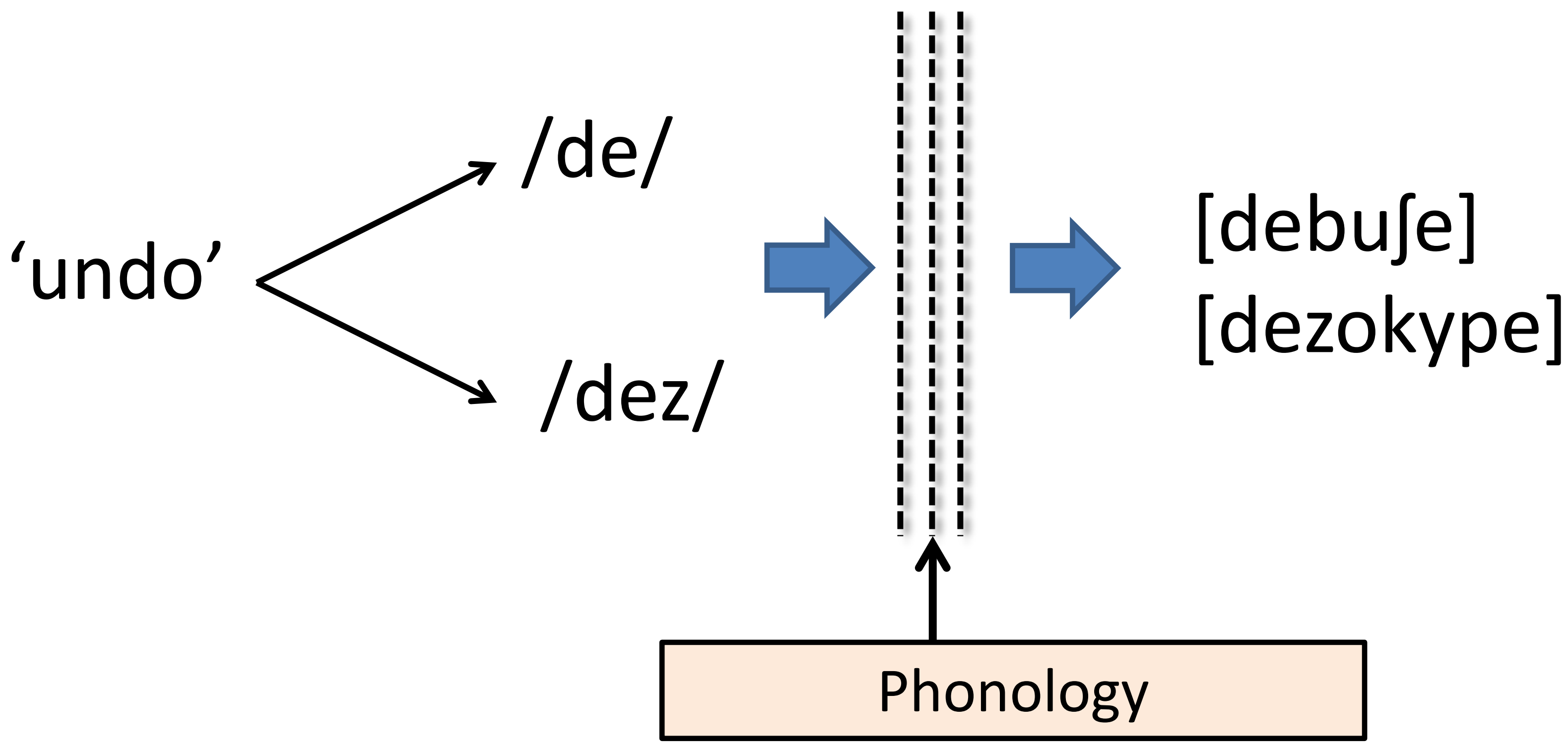
Phonological Optimization

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.

Conditioning and optimization

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2) Many cases of phonological conditioning are not optimizing…

Conditioning and optimization

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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.

Allomorphy

an introduction to the phonology-morphology interface

2nd class: formalizations and representations

Through the prism of allomorphy, we saw two possibly incompatible views of phonology:

1) Phonology as blind filter

2) Phonology also as a UR selector

2nd class: formalizations and representations

Today we will see:

1) Formalizations of optimization

2) Richer representations

3) Should one always go for allomorphy?

Formalization of UR selection

Recall the simple case of allomorphy from French

[de-buʃe]	but	[dez-okype]
vs.		
[pχe-buʃe]	but	[pχe-okype]
		*[pχez-okype]

Optimality Theory (Prince & Smolesky 1993)

For a given UR, the grammar evaluates several outputs by means of a constraint hierarchy:

/górad/	*$C_{[+voice]}$]#	*V́Ca	FaithC
☞ a. górət			*
b. górat		*!	
c. górad	*!		

Optimality Theory (Prince & Smolesky 1993)

The candidate that violates the lowest ranking constraint is the « last man standing »; it is the optimal candidate.

/górad/	$*C_{[+voice]}]\#$	*V́Ca	FaithVoice
☞ a. [górət]			*
b. [górat]		*!	
c. [górad]	*!		

Lethal violation: the candidate exits the competition because it violates a constraint that other competing candidates do not violate

Non-lethal violation: the candidate violates a constraints, but there is no other candidate to compete with it

Optimality Theory (Prince & Smolesky 1993)

Phonology in this case is two things: 1) a SR generator, and 2) an evaluator of UR-SR relations

/górad/	*$C_{[+voice]}$]#	*V́Ca	FaithC
☞ a. górət			*
b. górat		*!	
c. górad	*!		

Allomorph selection in OT

For allomorphy, we have seen that there are two URs. One may assume that they are both in the input:

$\left\{\begin{matrix}\text{/de/}\\ \text{/dez/}\end{matrix}\right\}$ + /buʃe/	*Hiatus	*CCV (*Coda)
☞ a. debuʃe		
b. dezbuʃe		*!

Allomorph selection in OT

For allomorphy, we have seen that there are two URs. One may assume that they are both in the input:

$\begin{Bmatrix} \text{/de/} \\ \text{/dez/} \end{Bmatrix}$ + /okype/	*Hiatus	*CCV (*Coda)
a. [deokype]	*!	
☞ b. [dezokype]		

Allomorph selection in OT

Cases with no allomorphy simply will not have the option of avoiding hiatus (Dep punishes candidates with segments that aren't there in the input)

/pʁe/ + /okype/	Dep	*Hiatus	*CCV (*Coda)
☞ a. [pχeokupe]		*	
b. [pχe**z**okupe]	*!		

Allomorph selection in OT

Cases with no allomorphy simply will not have the option of avoiding hiatus (Dep punishes candidates with segments that aren't there in the input)

/ʒeoloʒi/	Dep	*Hiatus	*CCV (*Coda)
☞ a. [ʒeoloʒi]		*	
b. [ʒe**z**oloʒi]	*!		

Allomorph selection in OT

/de/ /dez/ + /okype/	Dep	*Hiatus	*CCV (*Coda)
a. [deokype]		*!	
☞ b. [dezokype]			

/pʁe/ + /okype/	Dep	*Hiatus	*CCV (*Coda)
☞ a. [pχeokupe]		*	
b. [pχe**z**okupe]	*!		

Allomorph selection in OT

/de/ /dez/ + /okype/	Dep	*Hiatus	*CCV (*Coda)
a. [deokype]		*!	
☞ b. [dezokype]			

The trick: unlike *[pχez], [dez] does not violate Dep, because it is a lexically-stored option

/pʁe/ + /okype/	Dep	*Hiatus	*CCV (*Coda)
☞ a. [pχeokupe]		*	
b. [pχe**z**okupe]	*!		

Allomorph selection in OT

/de/ /dez/ + /okype/	Dep	*Hiatus	*CCV (*Coda)
a. [deokype]		*!	

This formalizes the fact that there is **phonological optimization** in the choice of [dez] or [de]. In essence, the analysis **hard-wires solutions to well-formedness constraints into the lexical knowledge**, in this case in the form of two underlying representations.

☞ a. [pχeokupe]		*	
b. [pχe**z**okupe]	*!		

Allomorph selection in OT

/de/ /dez/ + /okype/	Dep	*Hiatus	*CCV (*Coda)
a. [deokype]		*!	

This formalizes the fact that there is **phonological optimization** in

The price for this trick is to complicate the role of phonology and abandon the idea of phonology as a “blind” interpretive module

representations.

☞ a. [pχeokupe]		*	
b. [pχe**z**okupe]	*!		

Representations: an alternative

Maybe there is a way around this complication of the role of phonology.

In the first class, we assumes that URs contained sequences of basic sound units (phonemes):

/m æ n/

Representations

But nowadays most phonologists would agree that this view is too simplistic.

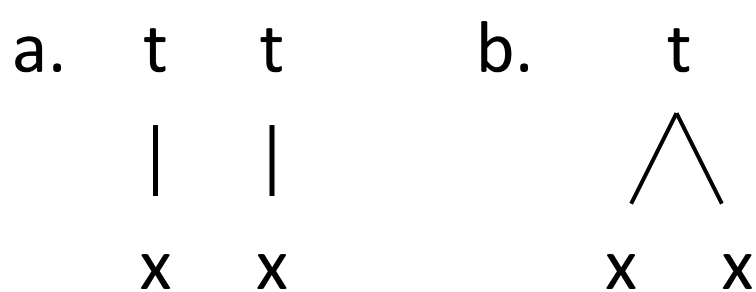
Rather, representations involve at least two tiers:

Segmental	m	æ	n
	|	|	|
Skeletal	x	x	x

Representations

Such representations are especially helpful in the understanding of long segments, e.g. Italian [fatːo] ‘done’.

Rather than just two identical consecutive segments (a), they are the same segment attached to two positions (b)



Representations

Once the segmental and skeletal tiers are separated, one must recognize several possible deficient scenarios

a.		b.	t	c.	t	c.	t
					|		
	x				x		x

CVCV Phonology (Lowenstamm 1996, Scheer 2004)

A phonological theory in whose representations the skeletal tier is composed of CV units (strictly alternating Cs and Vs):

```
a.  m  æ  n             b.  m  æ  n     l  i
    |  |  |                 |  |  |     |  |
    C  V  C  V              C  V  C  V  C  V

    [mæn]                   [mænli]
```

CVCV Phonology (Lowenstamm 1996, Scheer 2004)

Thus, phonetically V-initial words in this theory begin with an empty V slot:

```
      o   k   y   p   e
      |   |   |   |   |
  C   V   C   V   C   V
```

[okype]

CVCV Phonology: floating consonants

Back to [dez] ~ [de], within this framework, we can assume that the lexical representation of this morpheme involves a floating segment, with no C-slot:

```
d   e   z
|   |
C   V
```

CVCV Phonology: floating consonants

Before a C-initial base, there is no position for the floating segment to dock onto, and it cannot be realized

```
d   e   z         b    u    ʃ    e
|   |        +    |    |    |    |   →  [debuʃe]
C   V             C    V    C    V
```

CVCV Phonology: floating consonants

But before a V-initial base, there is such a position

```
d   e   z             o    k    y    p    e
|   |         +       |    |    |    |    |
C  V            C     V    C    V    C    V
```

CVCV Phonology: floating consonants

But before a V-initial base, there is such a position

d	e	z			o	k	y	p	e
|	|		+		|	|	|	|	|
C	V			C	V	C	V	C	V

[de**z**okype]

CVCV Phonology: floating consonants

But before a V-initial base, there is such a position

d e z o k y p e

| | + | | | | | [de**z**okype]

C V C V C V C V

(The CVCV skeleton is indepenedently motivated – it was not invented to solve this problem)

CVCV Phonology: floating consonants

This analysis assumes

1) Segments seek to dock (be realized)
2) Segments may remain unrealized

As the OT analysis, it conveys the optimization in the realization

CVCV Phonology: floating consonants

The analysis has the advantages that

1) Phonology remains interpetative
2) There is only one UR

It has the disadvatage that

1) it integrates another tier into the UR

CVCV Phonology: floating consonants

The analysis has the advantages that

1) Phonology remains interpetative

2) There is only one UR

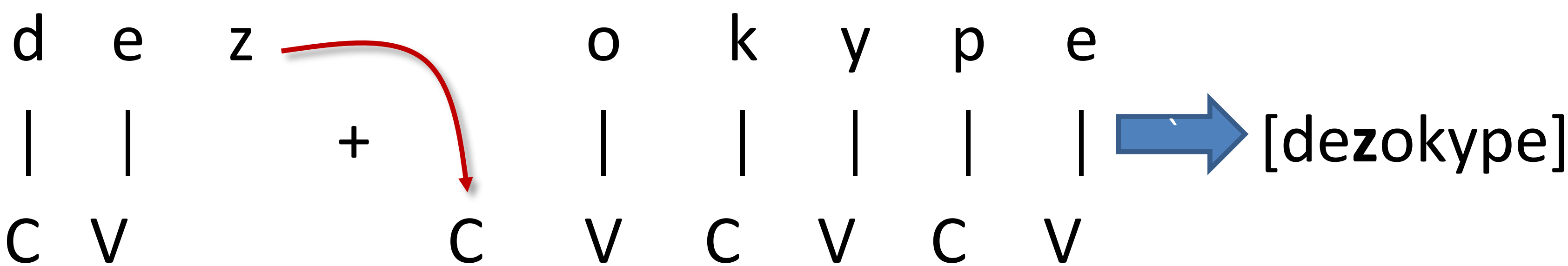
This is NOT allomorphy!!

It has the disadvatage that

1) it integrates another tier into the UR

Comparing the analyses

/de/ /dez/ + /okype/	Dep	*Hiatus	*CCV (*Coda)
a. [deokype]		*!	
☞ b. [de**z**okype]			



Comparing the analyses: How different are they really?

/de/ /dez/ + /okype/	Dep	*Hiatus	*CCV (*Coda)
a. [deokype]		*!	
☞ b. [de**z**okype]			

```
d   e    z           o    k    y    p    e
|   |         +      |    |    |    |    |   ⇒ [dezokype]
C   V            C   V    C    V    C    V
```

Comparing the analyses: How different are they really?

Both assume an idiosyncracy in the representation

/de/ /dez/	Dep	*Hiatus	*CCV (*Coda)
a. [deokype]		*!	
☞ b. [de**z**okype]			

Two URS

Floating C

```
d   e   z          o   k   y   p   e
|   |        +     |   |   |   |   |
C   V          C   V   C   V   C   V     [dezokype]
```

Comparing the analyses: How different are they really?

/de/ /dez/ + /okype/	Dep	*Hiatus	*CCV (*Coda)
a. [deokype]		*!	
☞ b. [de**z**okype]			

But the two-UR analysis is less economic/elegant, because

1) Since /de…/ is common to both URs, the analysis does not encode the fact that the locus of variation is only the /z/.

2) it does not relate the possibility of this [z] to any independently-available option in the theory.

Comparing the analyses: How different are they really?

Note that there is nothing about OT that forces one to have two URs in such cases. One can integrate representations into OT and have the same analysis as in CVCV

/de z/ + /okype/ CV CVCVCV	Dep	No floating
☞a. [dezok ype] CVCVCVCV		
b. [dez okype] CV CVCVCV		*!

Comparing the analyses: How different are they really?

Note that there is nothing about OT that forces one to have two URs in such cases. One can integrate representations into OT and have the same analysis as in CVCV

/de z/ + /buʃe/ CV CVCV	Dep	No floating
a. [dez bu ʃe] CVCVCVCV	*!	
☞ b. [dez bu ʃe] CV CVCV		*

Note on the cost of allomorphy

The assumption here:

- allomorphy is costly
- and if a single UR solution works, it's better

Note on the cost of allomorphy

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- allomorphy is costly
- and if a single UR solution works, it's better

But recall that we want to know what the speaker knows, not the minimum s/he has to know. There *is* reason to think that much redundant information is stored…
How would we check what the speaker really *knows*?

Note on the cost of allomorphy

The assumption here:

- allomorphy is costly
- and if a single UR solution works, it's better

Moreover, if allomorphy is costly, why does it exist at all… The optimization in [dez],[de] can justify its existence; but as we will see, not all phon-con allomorphy is optimizing

Summary

- Any analysis of phonologically-optimizing allomorphy must encode the possibility to optimize in the representation.

- Autosegmental analyses with floating, optional segments are less ad-hoc and – when the two allomorphs are similar, which is nearly always – more economic.

Problems

- How abstract can you be?
- When the loser is not problematic
- When the phon-con allomorphy is not optimizing
- Is all allomorphy epiphenomenal?

How abstract can you get?

- From Scheer (2016):

a. -s		b. -El		c. -E-s	
kap-sz	‘you get’	mos-ol	‘you wash’	mond-(a)-sz	‘you say’
dob-sz	‘you throw’	néz-el	‘you look’	fing-(a)-sz	‘you fart’
lök-sz	‘you push’	tesz-el	‘you put’	márt-a-sz	‘you immerse’
vág-sz	‘you cut’	ráz-ol	‘you shake’	sért-e-sz	‘you hurt’
nyom-sz	‘you press’	vonz-ol	‘you attract’	küld-e-sz	‘you send’
lő-sz	‘you shoot’	főz-öl	‘you cook’	tanít-(a)-sz	‘you teach’
ró-sz	‘you scold’			műt-e-sz	‘you operate’
				fűt-(e)-sz	‘you heat’

How abstract can you get?

- From Scheer (2016):

a. -s		b. -El		c. -E-s	
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vág-sz	‘you cut’	ráz-ol	‘you shake’	sért-e-sz	‘you hurt’
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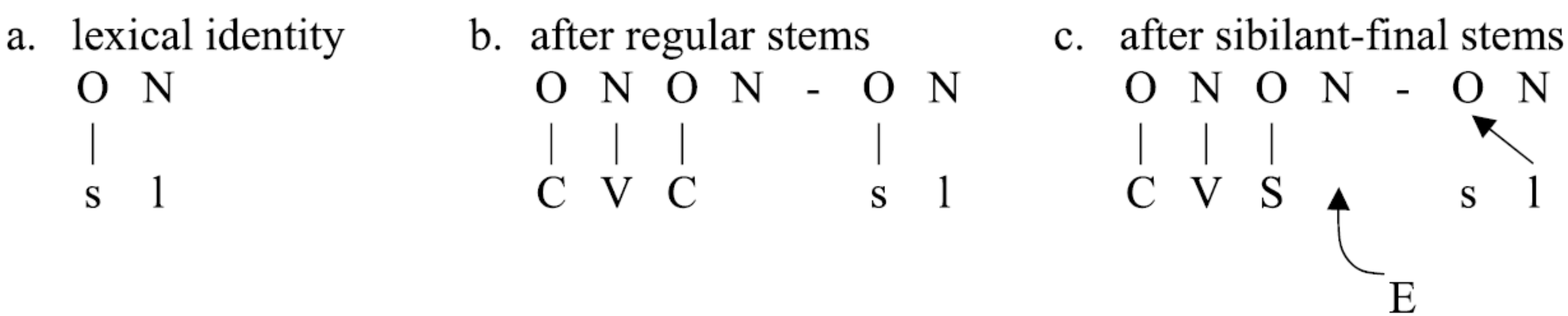
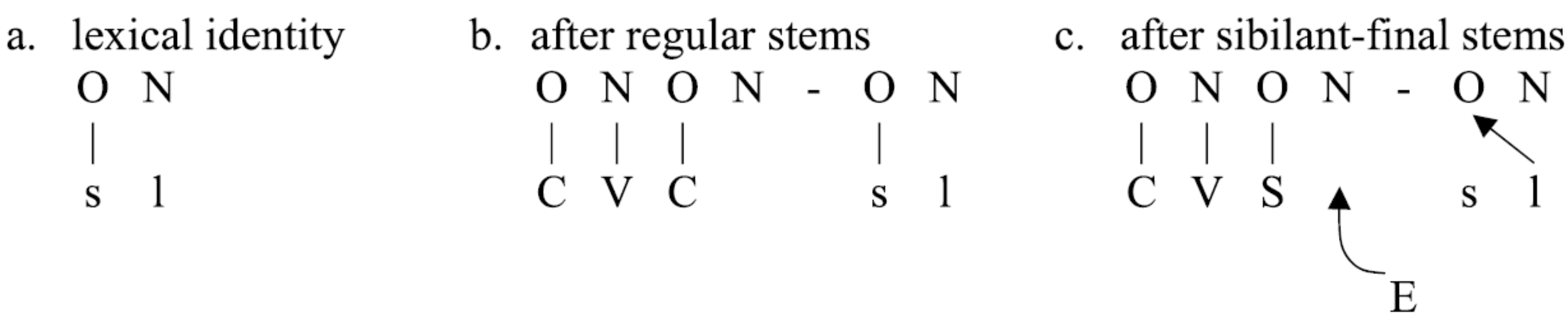


How abstract can you get

Problems:

1) The floating /l/ is lost forever – circular?
2) A mechanism of optimization seems to be assumed that would rule out the association of /s/.
3) Is this really so different from assuming two allomorphs?



When the loser is not problematic

Catalan theme vowel allomorphy (Bonet *et al*. 2007)

a.	gɔt	'glass'	gɔt-s	'glasses'
b.	awt-u	'car'	awt-u-s	'cars'
c.	mos-u	'lad'	mos-u-s	'lads'
d.	gos	'dog'	gos-u-s	'dogs'

- For C-final masculines, there are two allomorphs : ø and /u/
- /u/ surfaces only to prevent a sibilant sequence. But why? What's so wrong with *[gɔtus]?

When the loser is not problematic

Catalan theme vowel allomorphy (Bonet *et al*. 2007)

a.	gɔt	'glass'	gɔt-s	'glasses'
b.	awt-u	'car'	awt-u-s	'cars'
c.	mos-u	'lad'	mos-u-s	'lads'
d.	gos	'dog'	gos-u-s	'dogs'

Bonet *et al* propose that **allomorphs are ordered**: one allomorph – ø in this case – is **default**, and will be used unless it raises a problem

When the loser is not problematic

An autosegmental analysis again provides an alternative:

```
g  ɔ  s  u  s          g  ɔ  t  u  s
|  |  |  ↓  |          |  |  |     |
C  V  C  V  C          C  V  C  V  C
```

The vowel floats above its position, and will only associate if required to

Non-optimizing phon-con allomorphy?

An example that is often brought up:

Haitian definite article allomorphy (Klein 2003)

liv-la	'book-the'
papa-a	'father-the'

Non-optimizing phon-con allomorphy?

An example that is often brought up:

Haitian definite article allomorphy (Klein 2003)

liv-la	'book-the'
papa-a	'father-the'

The opposite of what one would expect based on phonology!

Non-optimizing phon-con allomorphy?

An example that is often brought up:

Haitian definite article allomorphy (Klein 2003)

liv-la	'book-the'
papa-a	'father-the'

Alternative: in this language, there is an **alignment** force that militates in favor of syllabifying the base and suffix separately. *li.v-a

Non-optimizing phon-con allomorphy?

An example that is often brought up:

Haitian definite article allomorphy (Klein 2003)

liv-la	'book-the'
papa-a	'father-the'

Alternative: in this language, there is an **alignment** force

Problem no 1: [papa.la] is still better than [papa.a].

Solution: default status to /a/. One will use /la/ only if /a/ is not good.

Non-optimizing phon-con allomorphy?

An example that is often brought up:

Haitian definite article allomorphy (Klein 2003)

liv-la	'book-the'
papa-a	'father-the'

This is a baaaad soltion. It only means that we push the part of the problem that bothers us to the realm of the arbitrary. One must ask **why** [a] has default status...

Solution: default status to /a/. One will use /la/ only if /a/ is not good.

Non-optimizing phon-con allomorphy?

An example that is often brought up:

Haitian definite article allomorphy (Klein 2003)

liv-la	'book-the'
papa-a	'father-the'

Problem no 2: the allomorphe for [ʃɛk] 'cheque' is also [la]: [ʃɛk-la]. But then the usual syllabification of [vklv] is [ʃɛ.kla], which violates alignment…
Solution: To say that despite this, the syllabification in [ʃɛk.la]. Rrequires proof.

Non-optimizing phon-con allomorphy?

Many other such examples can be solved by the notion of alignment.

However, if one accepts them, then phonology does 1) well-formedness

2) allomorph selection

3) priority-sensitivity

4) syllabification is variable

Non-optimizing phon-con allomorphy?

Many other such examples can be solved by the notion of alignment.

However, if one accepts the... en phonology does

1) well-form... ss
2) allom... selection
3) ...rity-sensitivity
...) syllabification is variable

Very different from the blind filter approach!

Non-optimizing phon-con allomorphy?

There are nevertheless many cases that cannot be accounted for even assuming phonology does all that:

<u>Modern Hebrew</u>

	base]#	base-V	
	base]#	base-V	
a.	ʦav	ʦab-**im**	‘turtle-turtles’
	daf	dap-**im**	‘sheet-sheets’
	ʁaχ	ʁak-ut	‘soft-softness’
b.	luaχ	luχ-ot	‘board-boards’
c.	kaχ**o**l	kχ**u**l-im	‘blue (sg-pl)’

Non-optimizing phon-con allomorphy?

There are nevertheless many cases that cannot be accounted for even assuming phonology does all that:

<u>French</u> (regular plurals)

	base]#	base-V
	fɔʁm-ɛl	fɔʁm-**al**-ite
	ʁepɛʁt-**waʁ**	ʁepɛʁt-**ɔʁj**-e

<u>Palestinian Arabic</u>

	3pl	1pl	
	ʔ**a**ːl-u	ʔ**u**l-**na**	‘say’
(cf.	katab-u	katab-na	‘write’)

Phon-con allomorphy is not epiphenomenal

Indeed, it seems that in such cases one *must* admit that allomorph-selection can be sensitive to phonology without there being any optimization in it.

~~Phon-con~~ allomorphy is not epiphenomenal

Indeed, it seems that in such cases one *must* admit that allomorph-selection can be sensitive to phonology without there being any optimization in it.

And of course, there are many cases of **non-**phonologically-conditioned allomorphy that are not epiphenomenal…

Summary

Any approach must acknowledge non-optimizing phon-con allomorphy.

Summary

We've seen two approaches to *optimizing* phon-con allomorphy

1_ two lexical allomorphs, phonology selects the better allomorph

2_ A single representation - optimizing phon-con **allomorphy is epiphenomenal**.

Summary

The latter approach **cannot accommodate lexical allomorph selection in the phonology.**

What can support or refute this approach?

In the next class

We will further examine the locus of phon-con allomorph selection in the grammar.

In the next class

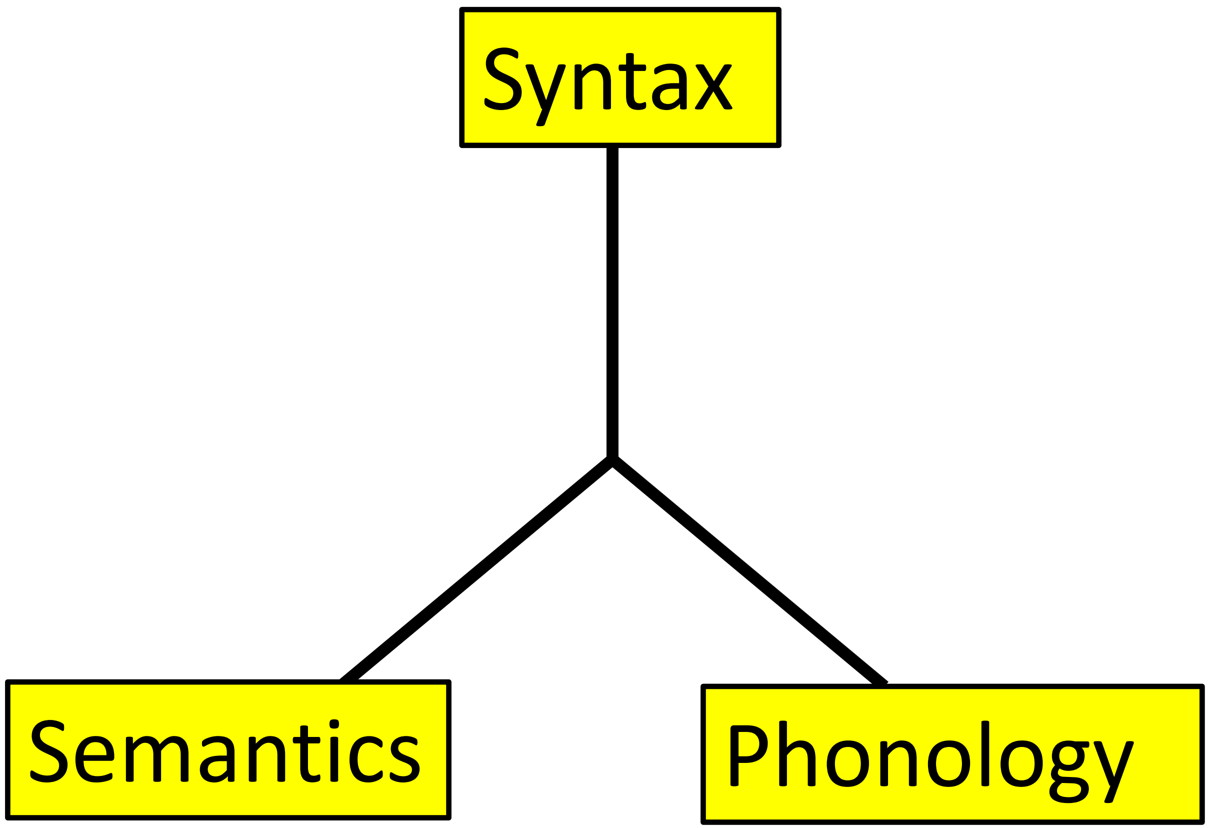
We will further examine the locus of phon-con allomorph selection in the grammar;

And we will look at a case study from Surmarian (Romantsch), which is arguably problematic for an approach that denies phonological allomorph selection.

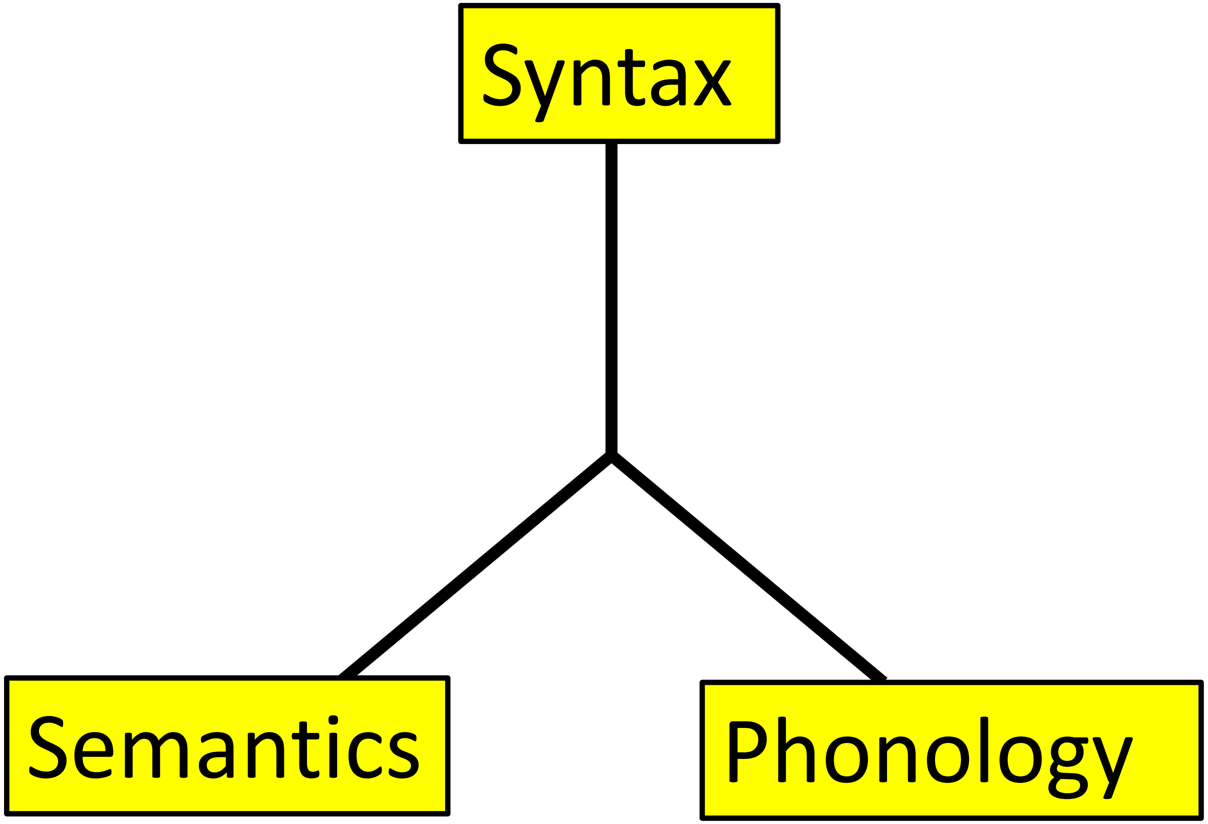
Allomorphy

an introduction to the phonology-morphology interface

3rd Class: the architecture of grammar



The Inverted Y architecture



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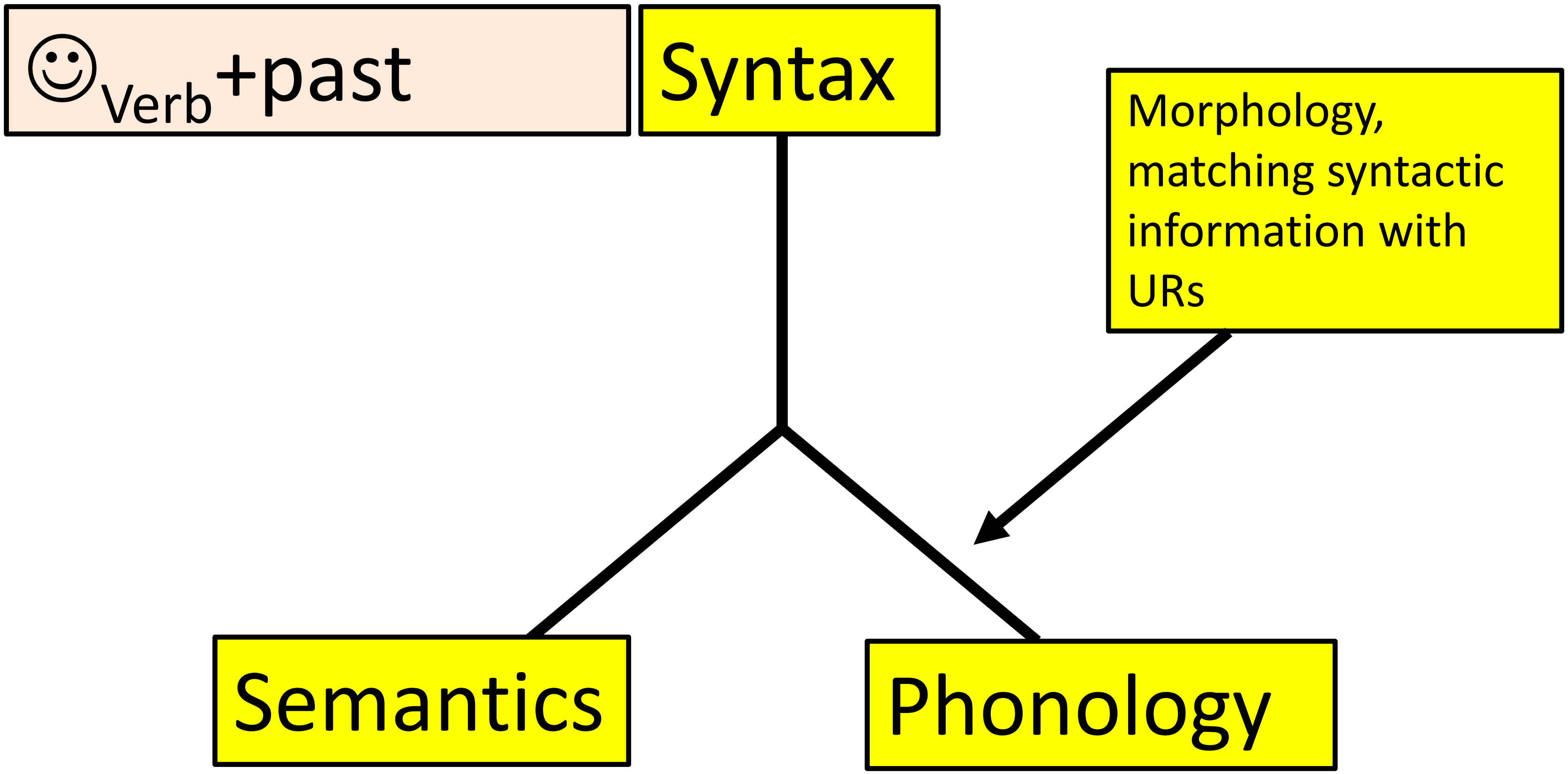

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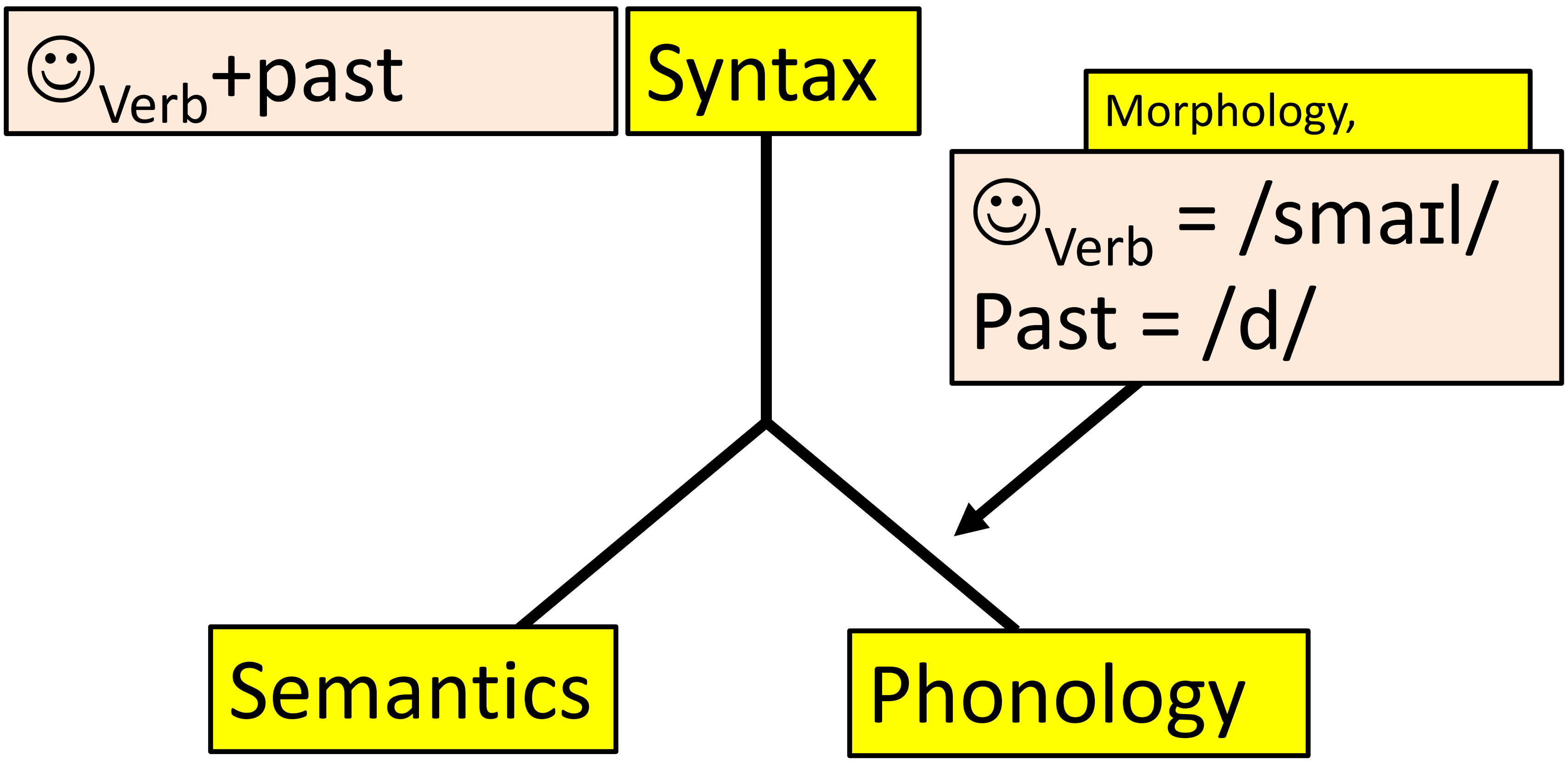

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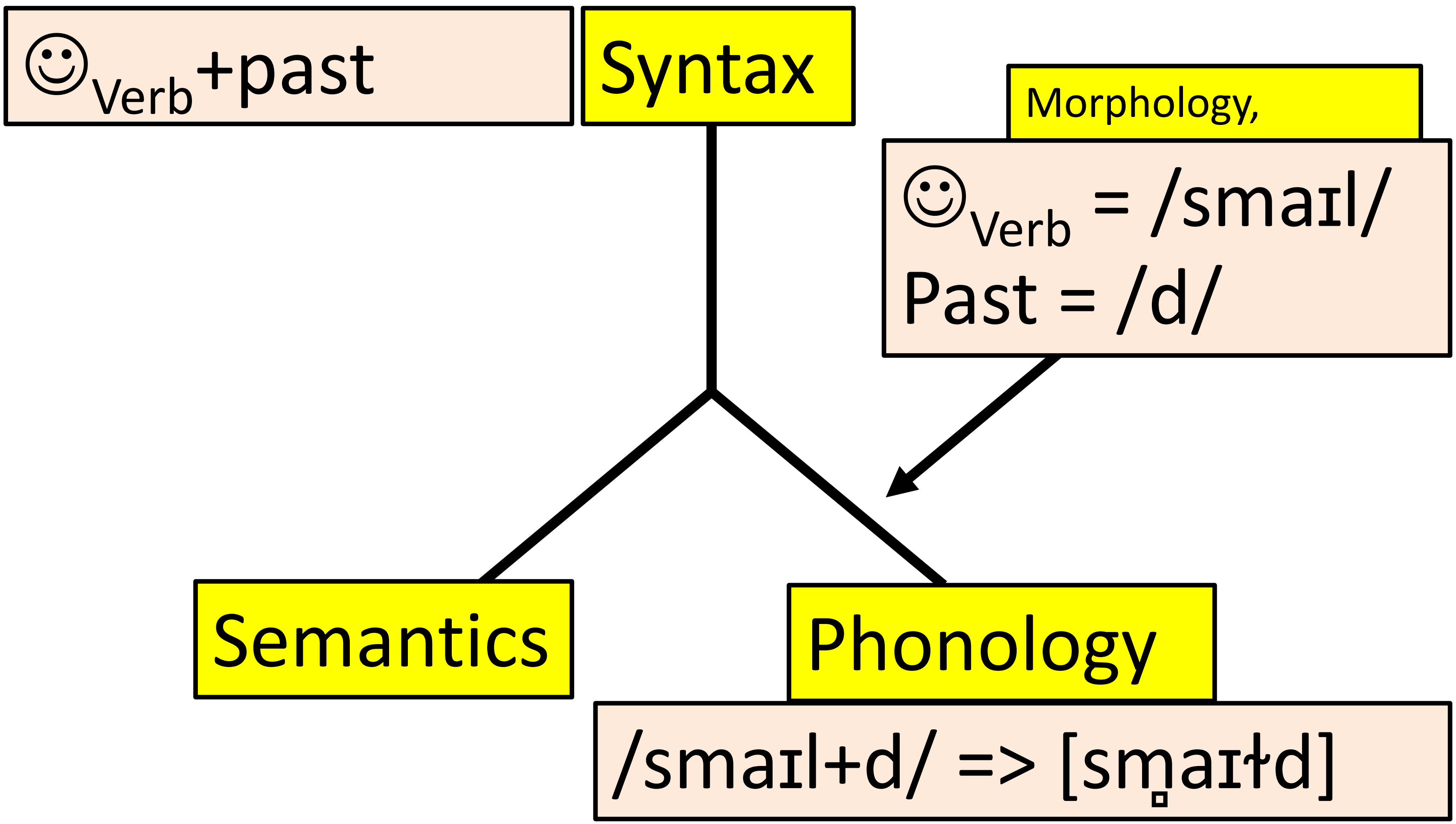

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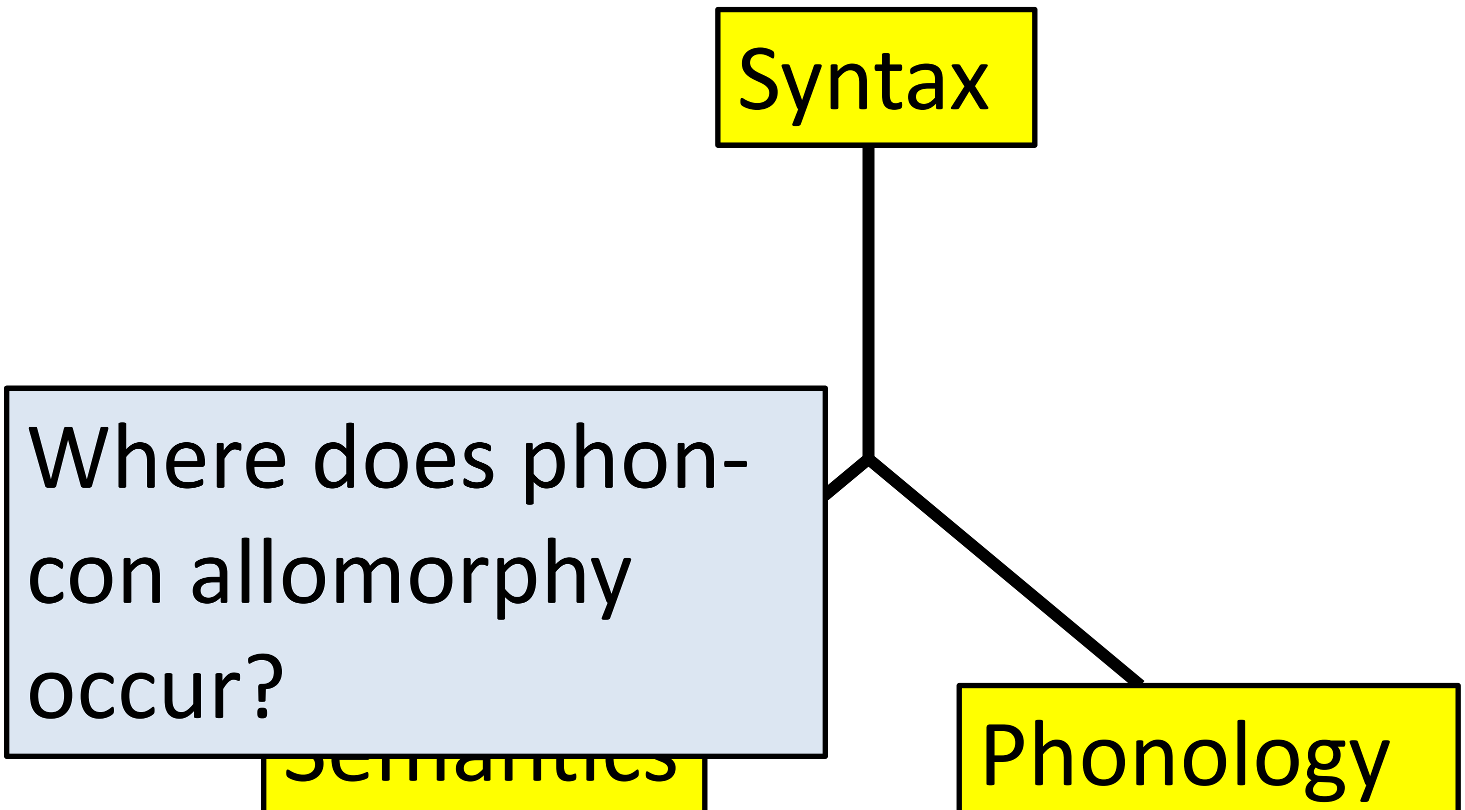
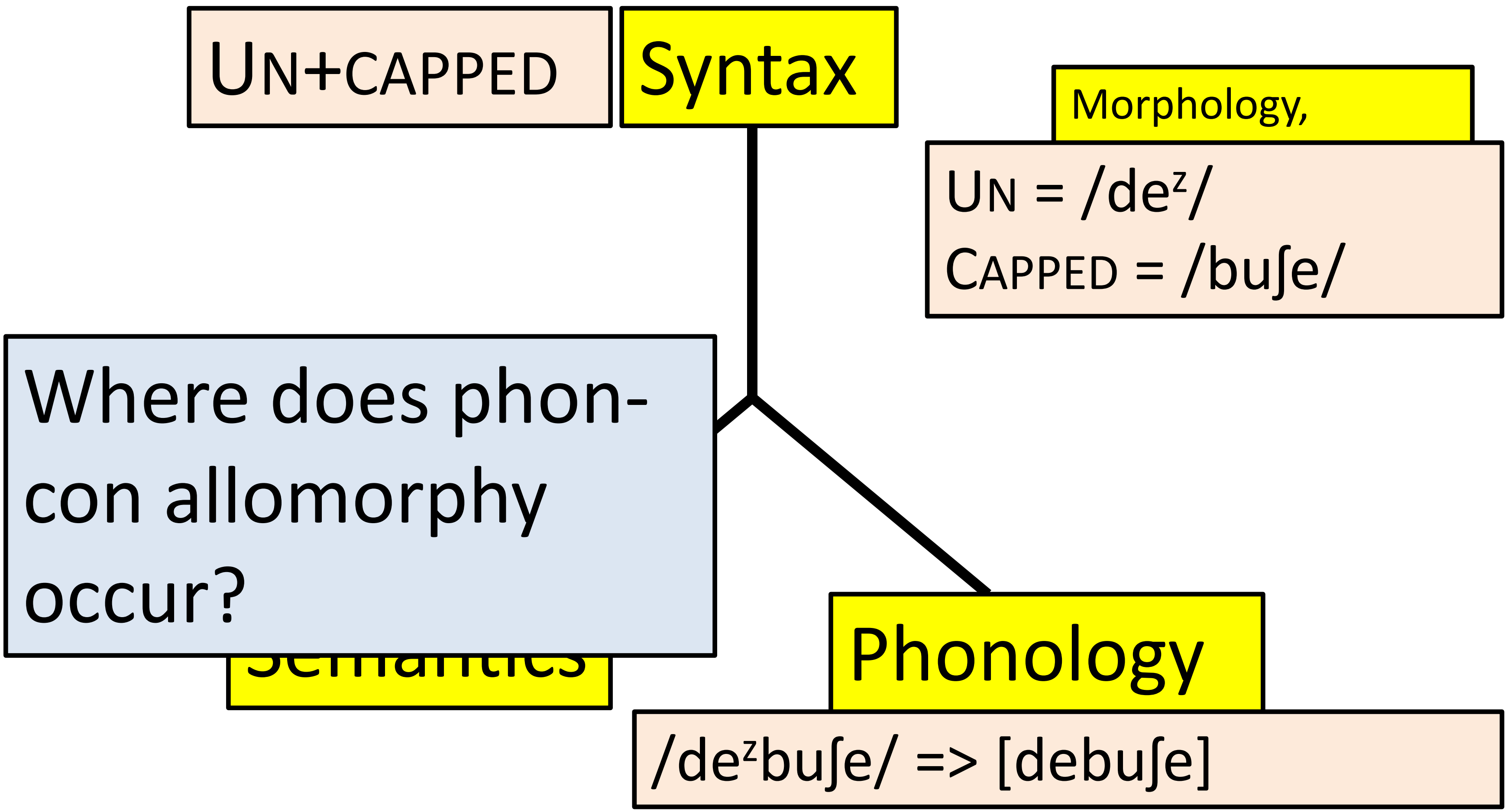


Reminder

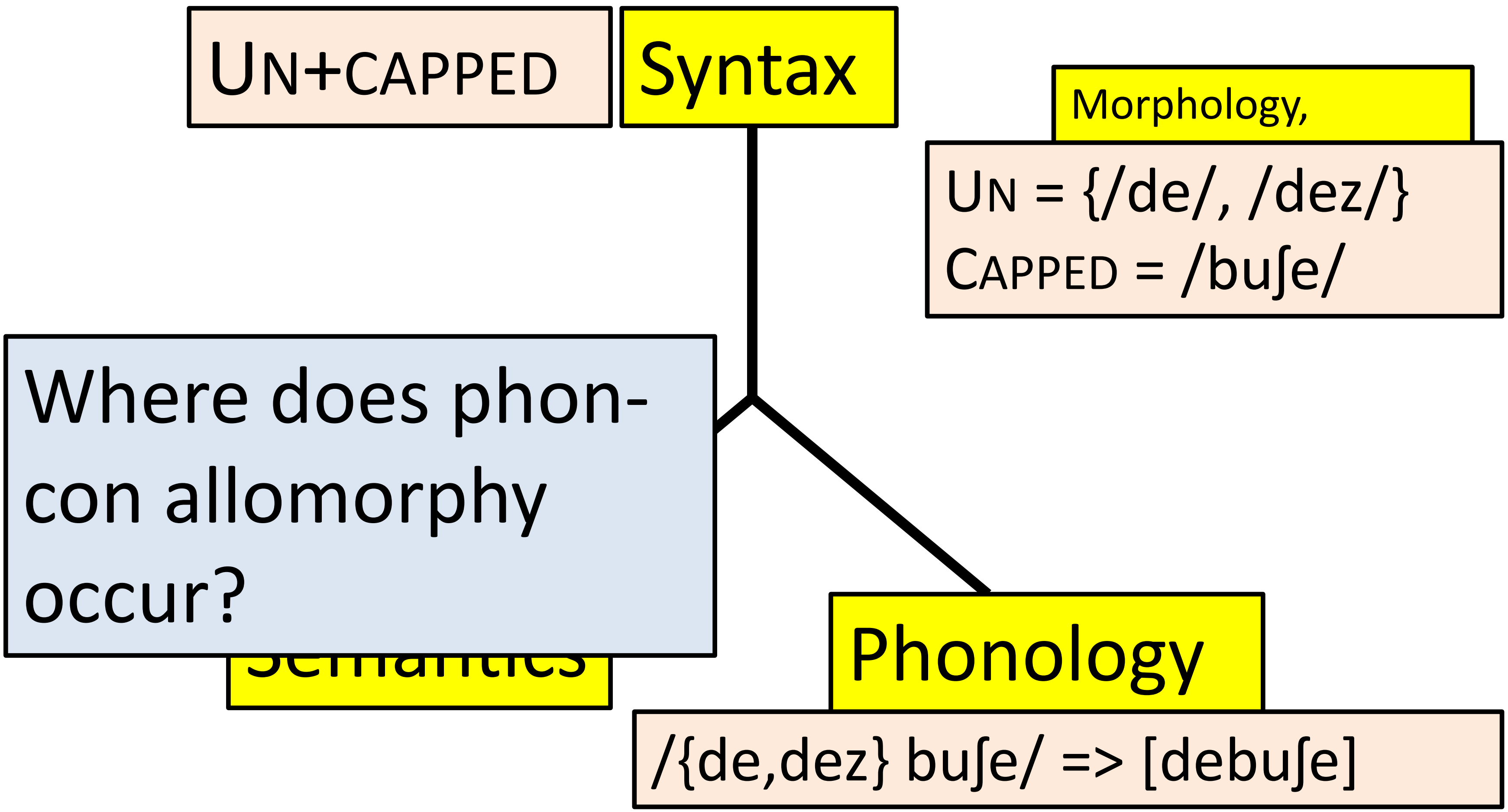
Recall the simple case of allomorphy from French

[de-buʃe]	but	[dez-okype]
‘uncappped’		‘freed’

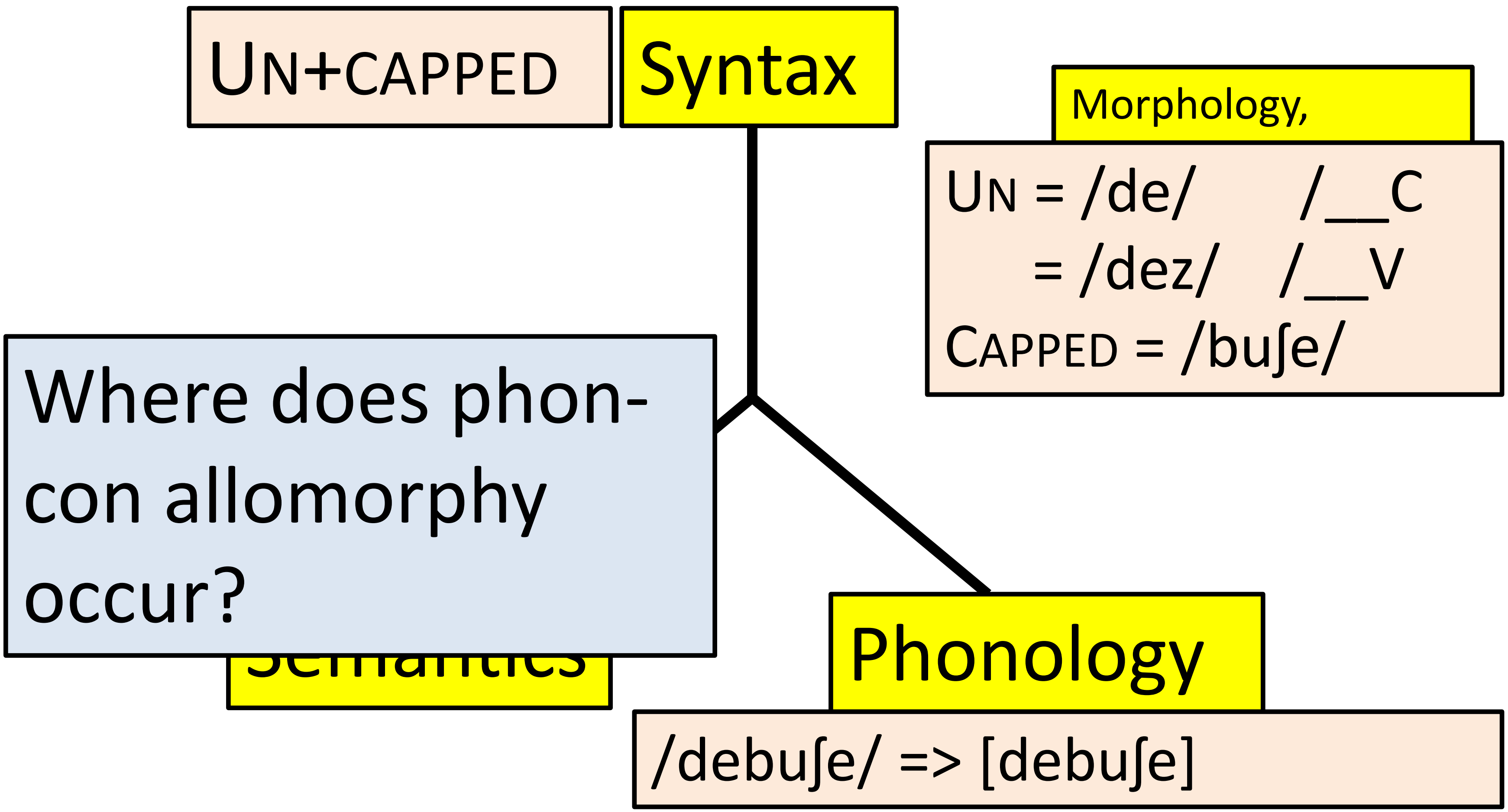
No allomorph selection in this case!



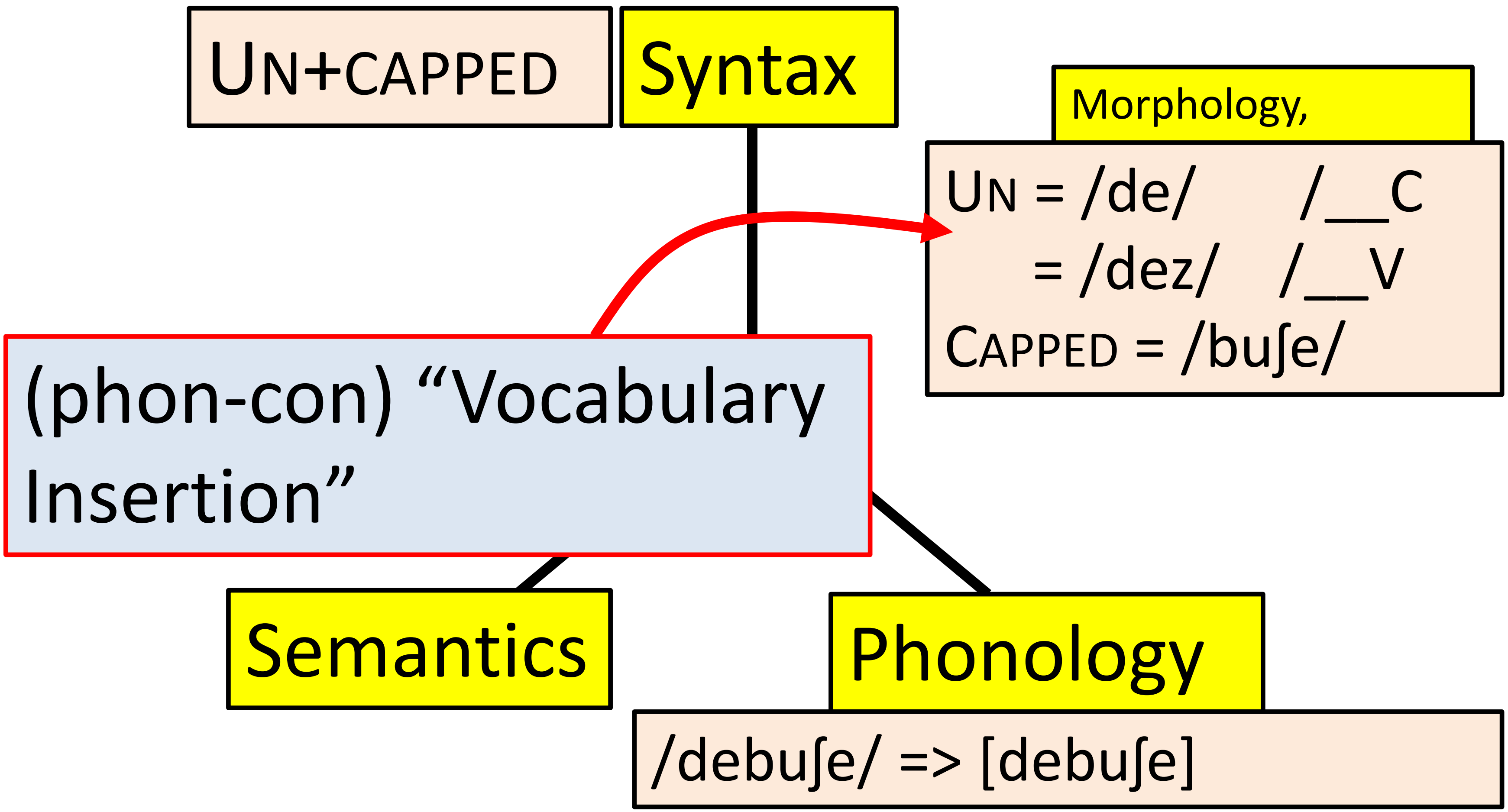
In the phonology?



In the morphology?



In the morphology?



In the morphology?

UN+CAPPED

Syntax

Morphology,

UN = /de/ /__C

= /dez/ /__V

CAPPED = /buʃe/

Does not express the optimizing nature of the selection

Phonology

/debuʃe/ => [debuʃe]

In the morphology?

UN+CAPPED

Syntax

Morphology,

UN = /dez/ /__C

= /de/ /__V

CAPPED = /buʃe/

Does not express the optimizing nature of the selection

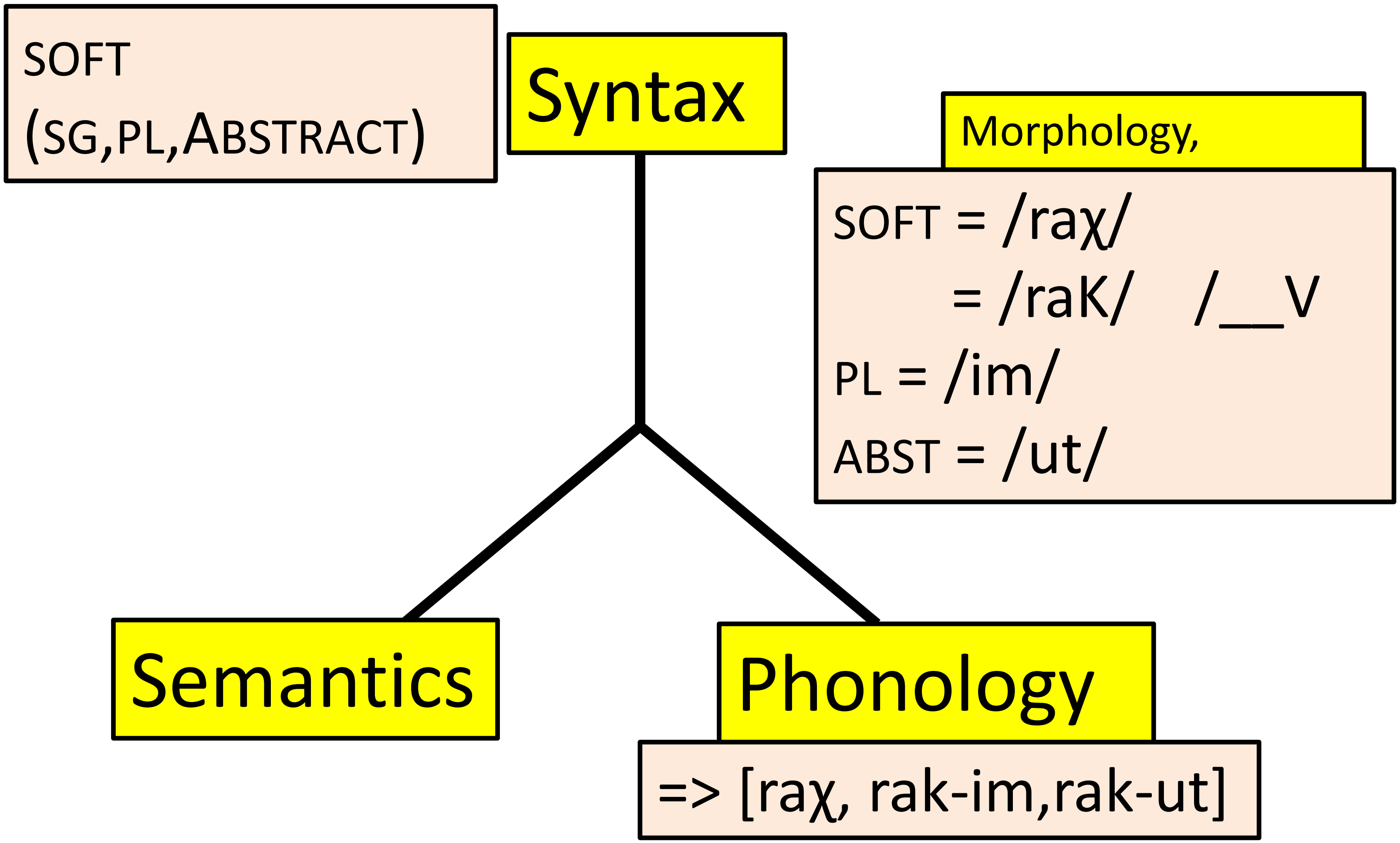
Phonology

/dezbuʃe/ => *[dezbuʃe]

In the morphology?

- Proponents of this view recruit suposedly non-optimizing cases, e.g. Modern Hebrew /ra**χ**, ra**k**-im, ra**k**-ut/ ‘soft (sg,pl), softness’

In the morphology?



In the morphology?

SOFT
(SG,PL,ABSTRACT)

Syntax

Morphology,

SOFT = /raχ/
= /raK/ /__V
PL = /im/
ABST = /ut/

Sensitivity to phon of adjacent UR without optimization

Phonology

=> [raχ, rak-im,rak-ut]

In the morphology?

An argument from **economy** (again): given that

- in some cases, phon-con allomoprhy is not allomorphy,

  and
- in other cases , phon-con is not optimizing

  and
- If we want phon-con selection to be done in the phonology we derive an undesirably strong phonology, as opposed to a blind filter,

Then why not spare us all the trouble and simply assume that all real phon-con allomorphy is simply phon-con vocabulary insertion.

In the morphology?

In other words, the fact that some processes appear to be optimizing does not mean that the purported optimization is really a synchronic process and forms part of the grammar.

In the morphology?

In other words, the fact that some processes appear to be optimizing does not mean that the purported optimization is really a synchronic process and forms part of the grammar.

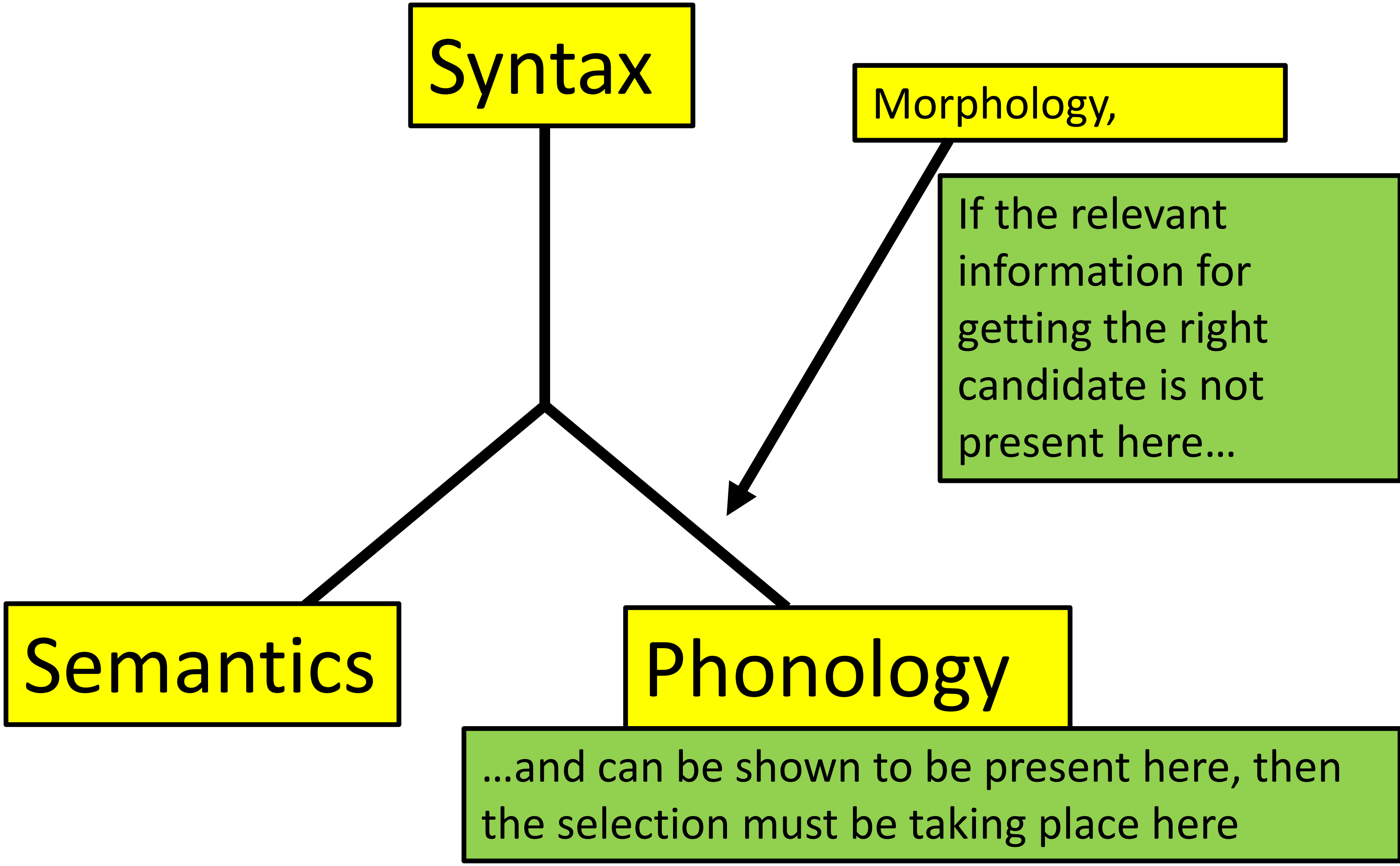
Recall we are asking what the speaker *knows*, not what s/he *needs to* know or what it would be neat if they s/he knew.

In the morphology?

Given the inverted Y architecture, any approach that denies allomorph selection in the phonology would be falsified if

Information that is clearly **not** present at the stage of vocabulary insertion is shown to be the condition in a case of uncontroversial allomorph selection.

The Inverted Y architecture



A Case Study: Surmiran (Anderson 2008)

1sg	(ia) cant	[kant]
2sg	(te) cantas	[ˈkantəs]
3sg	(el) canta	[ˈkantə]
1pl	(nous) cantagn	[kənˈtaɲ]
2pl	(vous) cantez	[kənˈtɛʦ]
3pl	(els) cantan	[ˈkantən]

A Case Study: Surmiran

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2pl	(vous) cantez	[kənˈtɛts]
3pl	(els) cantan	[ˈkantən]

Two realizations:	stressed	[kánt]
	unstressed	[kənt]

A Case Study: Surmiran

	‘praise’ [lód], [lʊd]	‘sleep’ [dór], [dʊr]	‘get up’ [lɛ́v], [ləv]	‘finish’ [fɛ́t(t)], [fɪt(t)]
1sg	lód	dór	lɛ́v	fɛ́t
2sg	lódəs	dórəs	lɛ́vəs	fɛ́ttəs
3sg	lóda	dórə	lɛ́və	fɛ́ttə
1pl	lʊdáɲ	dʊráɲ	ləváɲ	fɪttáɲ
2pl	lʊdɛ́ʦ	dʊrɛ́ʦ	ləvɛ́ʦ	fɪttɛ́ʦ
3pl	lódən	dórən	lɛ́vən	fɛ́ttən

A Case Study: Surmiran

	‘praise’ [lód], [lʊd]	‘sleep’ [dór], [dʊr]	‘get up’ [lɛ́v], [ləv]	‘finish’ [fɛ́t(t)], [fɪt(t)]
1sg	lód	dór	lɛ́v	fɛ́t
2sg	lódəs	dórəs	lɛ́vəs	fɛ́ttəs
3sg	lóda	dórə	lɛ́və	fɛ́ttə
1pl	lʊdáɲ	dʊráɲ	ləváɲ	fɪttáɲ
2pl	lʊdɛ́ʦ	dʊrɛ́ʦ	ləvɛ́ʦ	fɪttɛ́ʦ
3pl				

Anderson shows that the choice of the stem is not based on morphological information, but depends only on stress

A Case Study: Surmiran

Stress is completely regular in this language:

it falls on the penult if the rhyme of the final syllable consists of [ə], possibly followed by [r], [l], [n] or [s]: [kántən], [kántə]

And on the final vowel if it is not [ə], or if it is [ə] followed by some other consonant: [kəntɛ́ʦ]

A Case Study: Surmiran

Stress is completely regular in this language:

Therefore, stress must be an output of the phonological computation: it is *not* in the UR that is fed to the phonology.

A Case Study: Surmiran

Vowels to be found in stressed syllables:

[i,u,a,o,ɔ,e,ɛ]+diphthongs

Vowels to be found in **un**stressed syllables:

[ɪ,ʊ,ə]+(rarely)[ɛ,ɔ]

A Case Study: Surmiran

It is therefore tempting to analyse all of the alternations as underlyingly the same. For instance:

UR	/kant-a/	/kant-ɛʦ/
Stress assignment	/kánta/	/kantɛ́ʦ/
Reduction	[kántə]	[kəntɛ́ʦ]

A Case Study: Surmiran

It is therefore tempting to analyse all of the alternations as underlyingly the same. For instance:

UR	/kant-a/	/kant-ɛʦ/
Stress assignment	/kánta/	/kantɛ́ʦ/
Reduction	[kántə]	[kəntɛ́ʦ]

If this is true, then there is no allomorphy at all.

A Case Study: Surmiran

It is pretty sure, on the basis of comparative studies, that this is certainly the historical reason for the reduction.

How-ʔever,

Anderson shows convincingly that this cannot be a synchronic analysis:

A Case Study: Surmiran

It is impossible to predict the unstressed vowel from the stressed one, or vice-versa:

Alternation	Infinitive	3sg Pres. Indic.	gloss
[ʊ̆]/[a]	v[ʊ]rdar	varda	‘watch’
[ʊ̆]/[ɔ]	d[ʊ]rmeir	dorma	‘sleep’
[ʊ̆]/[o]	cr[ʊ]dar	croda	‘fall’
[ʊ̆]/[oː]	p[ʊ]ssar	pôssa	‘rest’
[ʊ̆]/[oi̯]	l[ʊ]ier	loia	‘arrange’

A Case Study: Surmiran

It is impossible to predict the unstressed vowel from the stressed one, or vice-versa:

Alternation	Infinitive	3sg Pres. Indic	gloss
[ĭ]/[ˈa]	(sa) tgil[ɪ]ttar	tgilatta	'sit down (scornfully, as of a cat)'
[ĭ]/[ˈai̯]	spisg[ɪ]ntar	spisgiainta	'feed'
[ĭ]/[ˈɛ]	p[ɪ]glier	peglia	'take'
[ĭ]/[ˈe]	f[ɪ]mar	fema	'smoke'
[ĭ]/[ˈei̯]	anv[ɪ]dar	anveida	'invite'
[ĭ]/[ˈi]	tg[ɪ]rar	tgira	'guard'

A Case Study: Surmiran

Alternation	Infinitive	3sg Pres. Indic.	gloss
[ə̆]/[ˈa]	l[ə]var	lava	‘wash’
[ə̆]/[ˈai̯]	[ə]ntrar	aintra	‘enter’
[ə̆]/[ˈɛ]	t[ə]dlar	tedla	‘listen’
[ə̆]/[ˈe]	l[ə]var	leva	‘get up’
[ə̆]/[ˈɛi̯]	p[ə]sar	peisa	‘weigh’
[ə̆]/[ˈei̯]	antsch[ə]dar	antscheida	‘start yeast’
[ə̆]/[ˈi]	surv[ə]gneir	survigna	‘receive’
[ə̆]/[ˈo]	cl[ə]mar	cloma	‘call’

A Case Study: Surmiran

If so, for every verbal stem in Surmiran, the speaker must retain two stems.

1) the unstressed version

2) the stressed version

But stress is decided **in the phonology**…

A Case Study: Surmiran

If so, for every verbal stem in Surmiran, the speaker must retain two stems.

1) the unstressed version
2) the stressed version

But stress is decided **in the phonology**…

In consequence, **both stems** must be accessible to the phonological computation. The decision of which stem to take **cannot precede** the phonological computation

Anderson's analysis

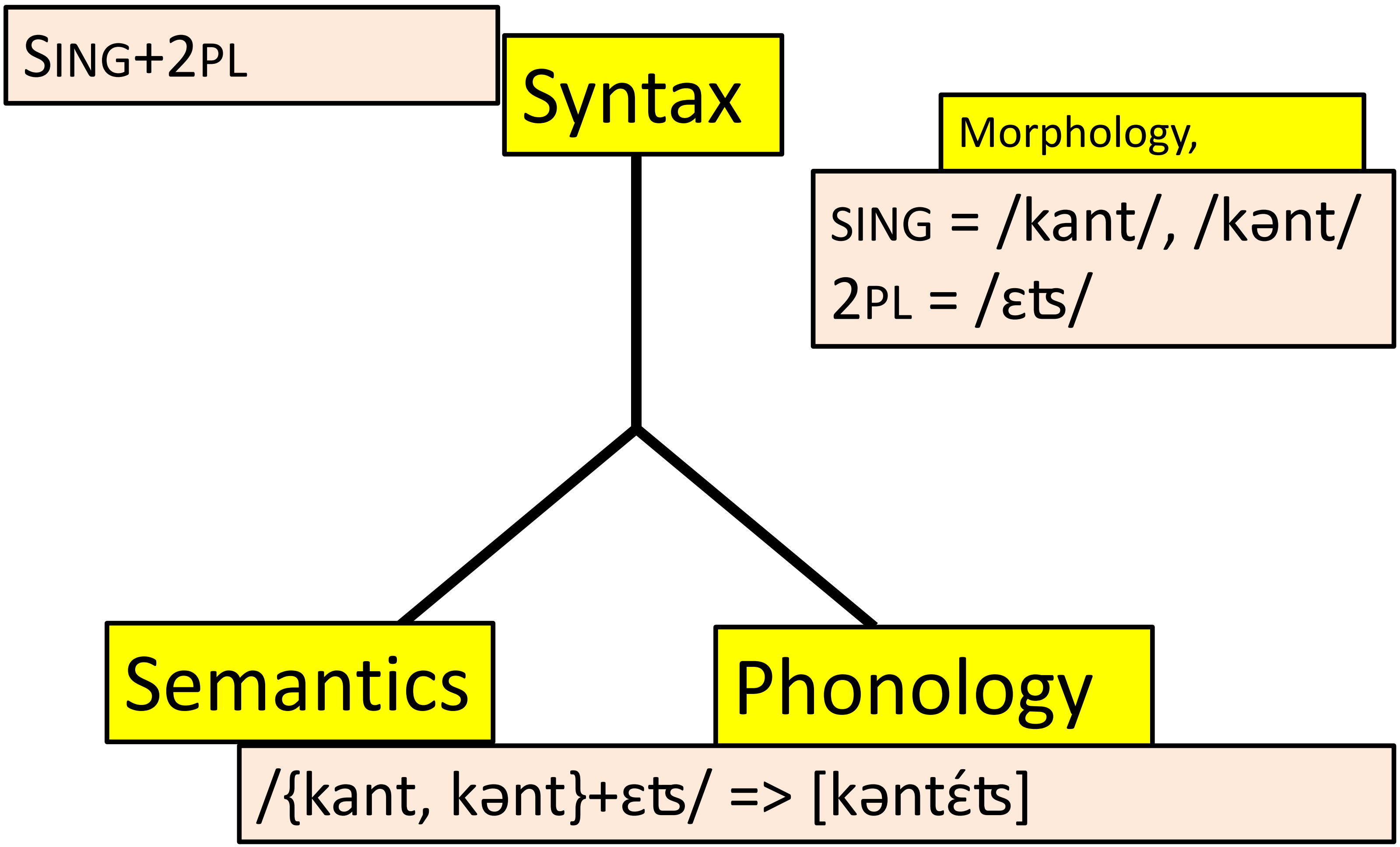
$*\acute{V}_{[lax]}$:

Do not stress [ɪ,ʊ,ə]

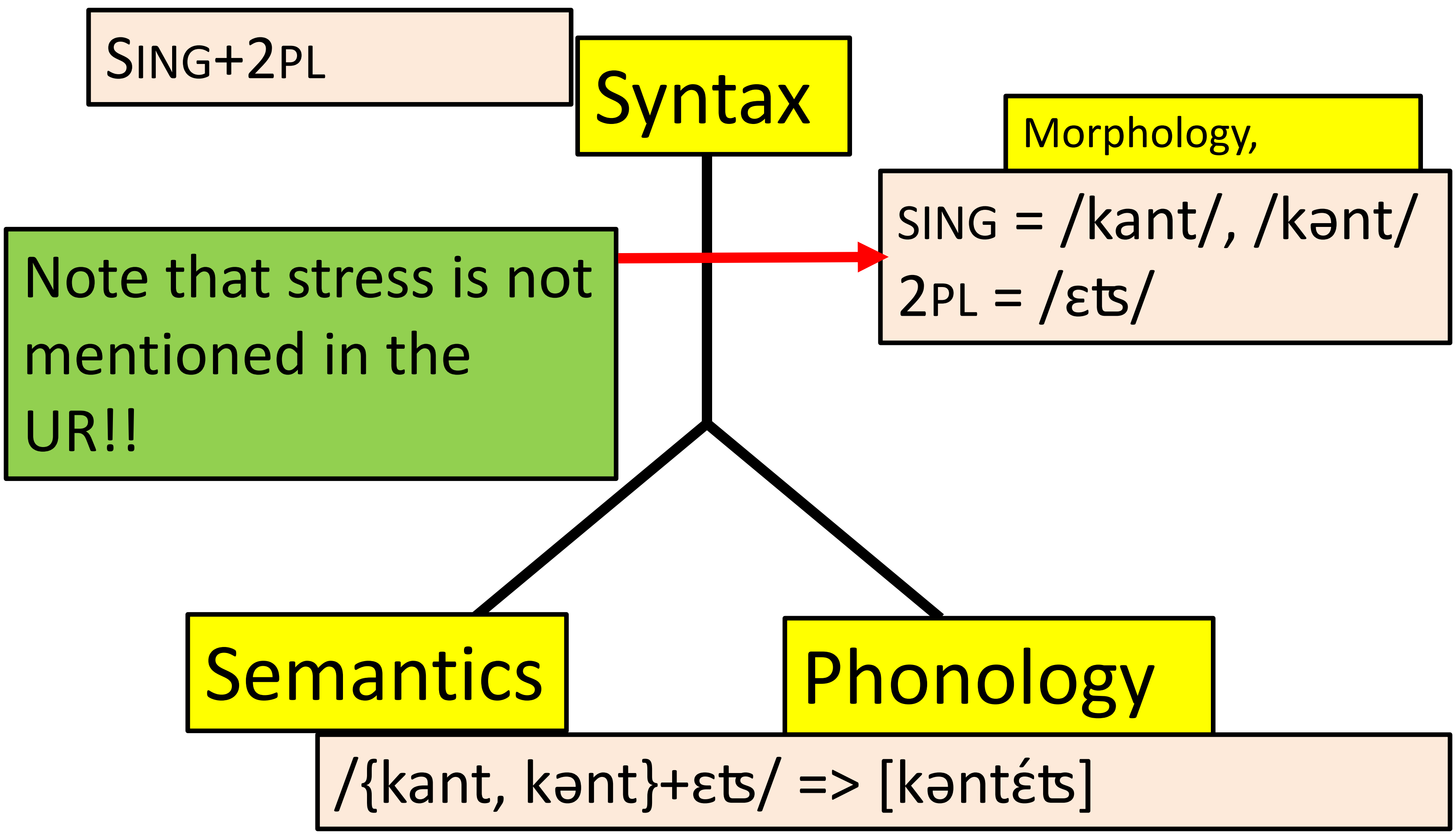
$*V_{[-lax]}$:

Punish non-lax vowels

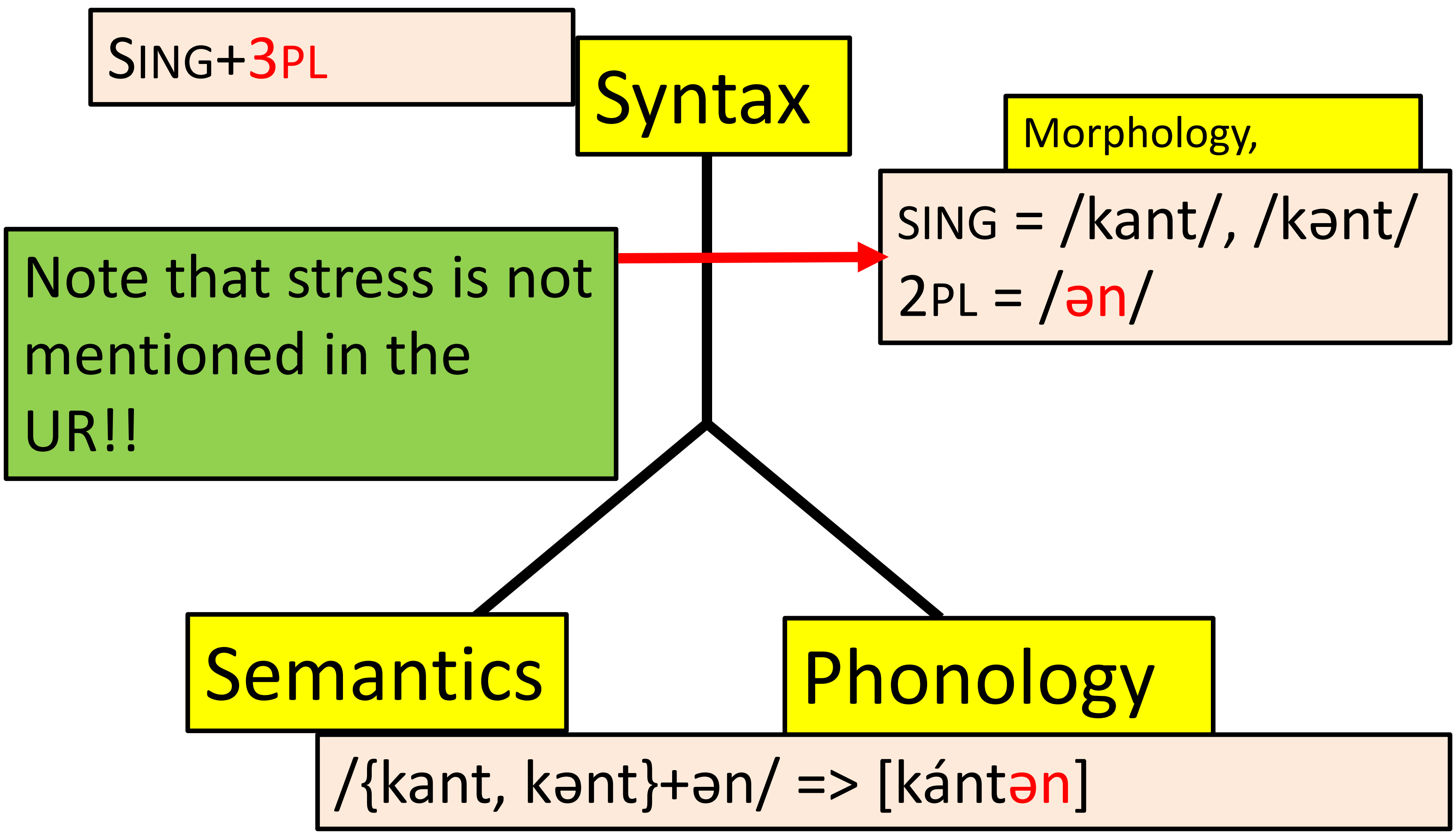
Anderson's analysis in our architecture



Anderson's analysis



Anderson's analysis



Anderson’s analysis

a.

/{vʊrd,vard}-ar/	**Stress**	*ˈʊ,ˈɪ,ˈə	*ă,ĭ,ŭ
ˈvʊrdăr	!*	*	*
ˈvardăr	!*		*
☞ vʊ̆rˈdar			
vărˈdar			!*

Anderson's analysis

b.

/{vʊrd,vard}-ə/	Stress	*ˈʊ,ˈɪ,ˈə	*ă,ĭ,ŭ
ˈvʊrdə̆		!*	
☞ ˈvardə̆			
vʊ̆rˈdə	!*	*	
vărˈdə	!*	*	*

Autosegmental alternative with a single UR

v ʊ a r d ɛ ʦ
| | | | |
C V C V C V C V

v ʊ a r d ə n
| | | | |
C V C V C V C V

Autosegmental alternative with a single UR

v ʊ a r d ɛ́ ʦ
| | | | |
C V C V C V C V

v ʊ a r d ə n
| | | | |
C V́ C V C V C V

Autosegmental alternative with a single UR

```
v  ʊ  a  r     d  έ  ʦ
|        |     |  |  |
C   V    C  V  C  V  C  V
```

```
v  ʊ  a  r     d  ə  n
|        |     |  |  |
C   V́    C  V  C  V  C  V
```

Every verb in Surmiran would have to have such an indeterminate representation.

Autosegmental alternative with a single UR

v ʊ a r d έ ʦ
| | | | |
C V C V C V C V

v ʊ a r d ə n
| | | | |
C V́ C V C V C V

Whether one is content with this solution or not, it too curcially involves the selection of the better vowel among the two in the phonology.

Summary

If all phon-con allomorphy precedes phonology, it is predicted that purely phonological processes will not be able to interact with it.

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This view is falsified by the Surmiran case.

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If all phon-con allomorphy precedes phonology, it is predicted that purely phonological processes will not be able to interact with it.

This view is falsified by the Surmiran case.

Unless one accepts massive floating, there must be phon-con allomorph selection in the phonology.

Summary

In other words, it must be possible for the morphology to provide more than one UR, "leaving the choice" for the phonology.

Annex: feature-sensitive allomorphy and modularity

A recurrent feature in the study of allomorphy is its limits.

Scheer (2016) makes a generalization that is quite remarkable in this respect, namely that

Pure melody (segments, features) cannot be the trigger of allomorph-selection (or of any syntactic operation)

Annex: feature-sensitive allomorphy and modularity

Pure melody (segments, features) cannot be the trigger of allomorph-selection (or of any syntactic operation)

Scheer claims that all of the cases that we saw of this are amenable to an analysis with floaters and one UR.

Annex: feature-sensitive allomorphy and modularity

Pure melody (segments, features) cannot be the trigger of allomorph-selection (or of any syntactic operation)

Ok, but why?

Annex: feature-sensitive allomorphy and modularity

Pure melody (segments, features) cannot be the trigger of allomorph-selection (or of any syntactic operation)

Ok, but why? **Modularity**

"…items that are processed by a given module cannot be read, parsed or understood by another module."

Annex: feature-sensitive allomorphy and modularity

Modularity

"…items that are processed by a given module cannot be read, parsed or understood by another module."

Phonology processes segments and features.

Therefore Morphology can't understand these.

Annex: feature-sensitive allomorphy and modularity

But nothing prevent morphology from understanding the structures **created** by phonology, or simply present in the representation, such as

Skeletal C/V distinction,

Syllabic structure,

Sonority (e.g. a<i,u)

Annex: feature-sensitive allomorphy and modularity

But nothing prevent morphology from understanding the structures **created** by phonology, or simply present in the representation, such as

Skeletal C/V distinction,

Syllabic structure,

Sonority (e.g. a<i,u)

Although how this happens is not very clear in Scheer’s account, which concentrates on apparent counter-examples to his first generalization

Annex: feature-sensitive allomorphy and modularity

Pure melody (segments, features) cannot be the trigger of allomorph-selection (or of any syntactic operation)

=> a problem for OT accounts of allomorphy, because the entire phonology *in principle* interacts with allomorph selection (these account are **non-modular** wrt phonology and morphology)

Allomorphy

an introduction to the phonology-morphology interface

4th Class: suppletion and levels of representation

Today we leave

the question of optimization

phonologically conditioned allomorphy

And move to

grammatically conditioned allomorphy

the notion of **suppletion**

4th Class: suppletion and levels of representation

Consider the following cases from English past tense.

[pleɪ]	[pleɪd]
[kiːp]	[kɛpt]
[rɪŋ]	[ræŋ]
[tiːʧ]	[tɔːt]
[goʊ]	[went]

4th Class: suppletion and levels of representation

Consider the following cases from English past tense.

[pleɪ]	[pleɪ**d**]	suffixation
[kiːp]	[k**ɛ**p**t**]	V-change, suffixation
[r**ɪ**ŋ]	[r**æ**ŋ]	V-change, no suffixation
[t**iːʧ**]	[t**ɔː t**]	Partial stem change
[**goʊ**]	[**went**]	Whole stem change

4th Class: suppletion and levels of representation

Consider the following cases from English past tense.

regular

[pleɪ]	[pleɪ**d**]	suffixation
[kiːp]	[k**ɛ**p**t**]	V-change, suffixation
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irregular

4th Class: suppletion and levels of representation

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[pleɪ]	[pleɪ**d**]	suffixatio
[kiːp]	[k**ɛ**p**t**]	V-cha suffixation
[r**ɪ**ŋ]	[r**æ**ŋ]	V-change, ffixation
[t**i**ː**ʧ**]	[t**ɔ**ː**t**]	Partial stem chan
[**goʊ**]	[**went**]	Whole ste

No suppletion

« weak suppletion »

« suppletion »

irregular

4^{th} Class: suppletion and levels of representation

Consider the following cases from English past tense.

[pleɪ]	[pleɪ**d**]	No special information is necessary
[kiːp]	[k**ɛ**p**t**]	Retention of specific facts about the past stem is necessary.
[r**ɪ**ŋ]	[r**æ**ŋ]	
[t**iːʧ**]	[t**ɔː****t**]	
[**goʊ**]	[**went**]	

4th Class: suppletion and levels of representation

Consider the following cases from English past tense.

[pleɪ]	[pleɪ**d**]
[kiːp]	[k**ɛ**p**t**]
[r**ɪ**ŋ]	[r**æ**ŋ]
[t**iːʧ**]	[t**ɔː**t]
[**goʊ**]	[**went**]

No special information is necessary

Retention of specific facts about the past stem is necessary.

Some linguists claim that all of these cases are grammatically identical:

4th Class: suppletion and levels of representation

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[r**ɪ**ŋ]	[r**æ**ŋ]	
[t**iː**ʧ]	[t**ɔː**t]	
[**goʊ**]	[**wɛnt**]	

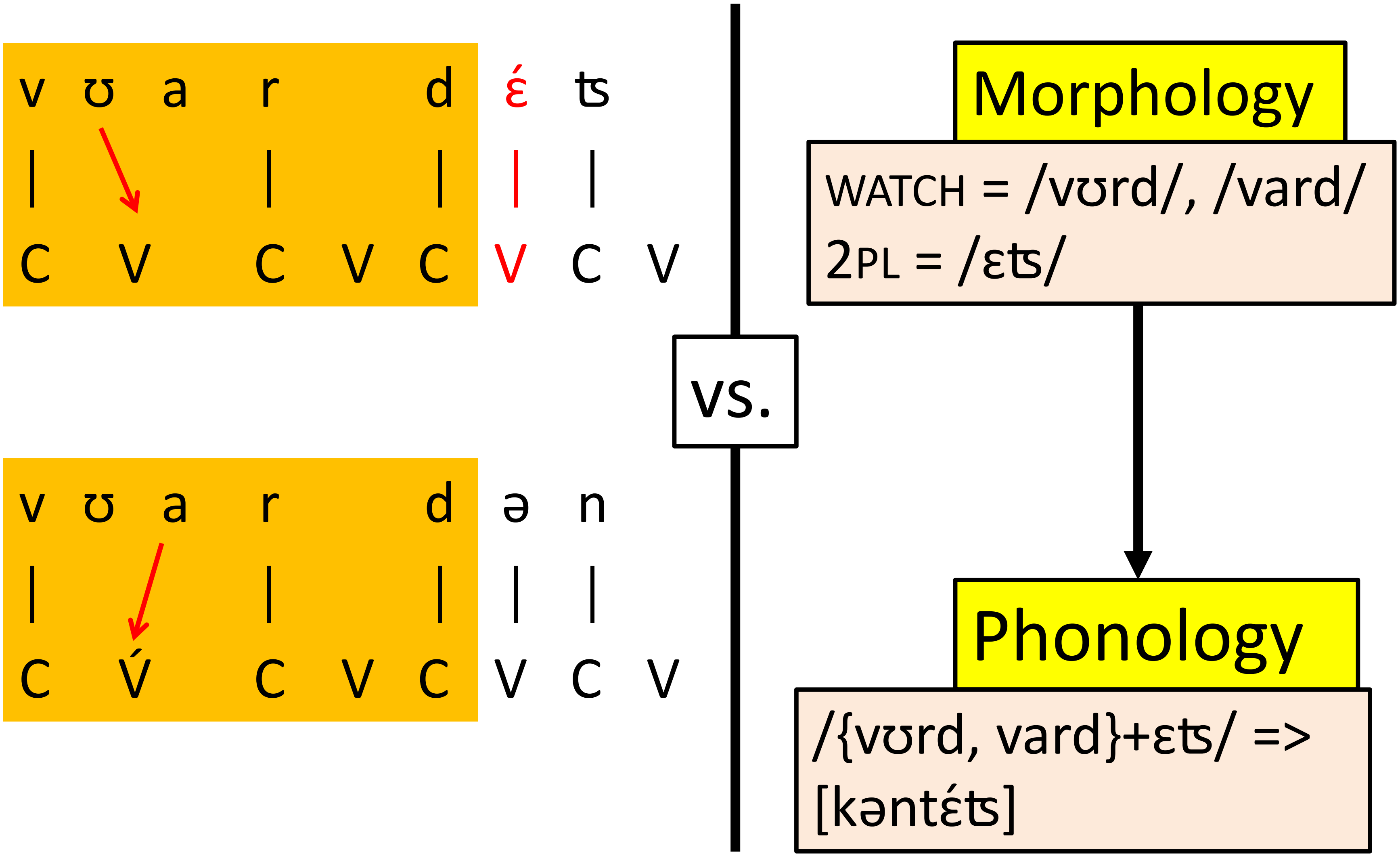
Some linguists claim that all of these cases are grammatically identical:

Weak suppletion

=

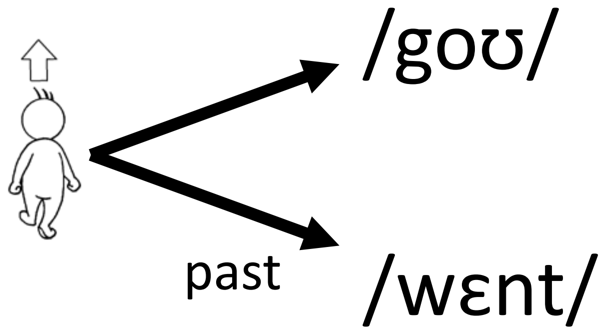
Strong suppletion

Reminiscent of that, but with a morpho-syntactic conditioning



A theory of suppletion

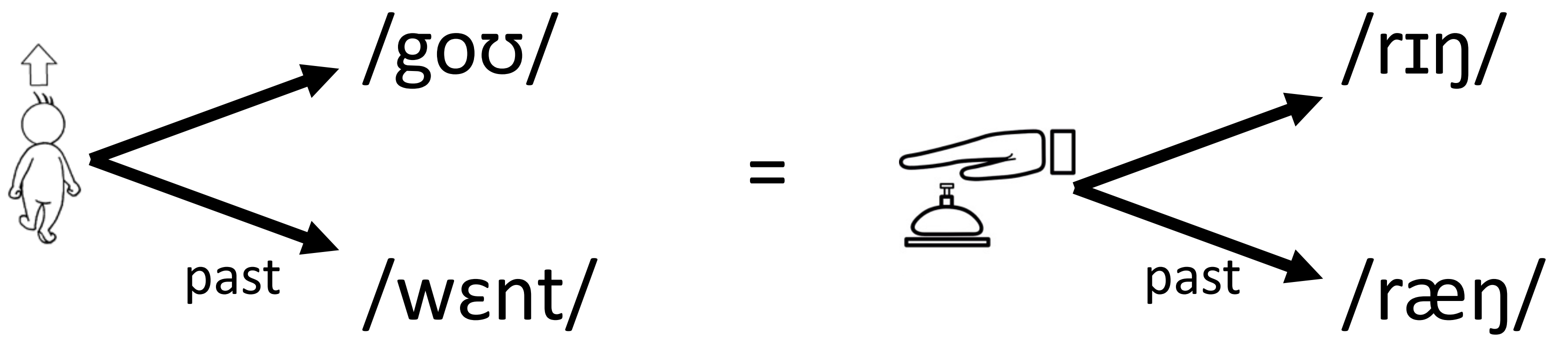
Harley (2014) takes suppletion to stand for the situation in which the same “root” has two phonological forms associated to it:



A theory of suppletion

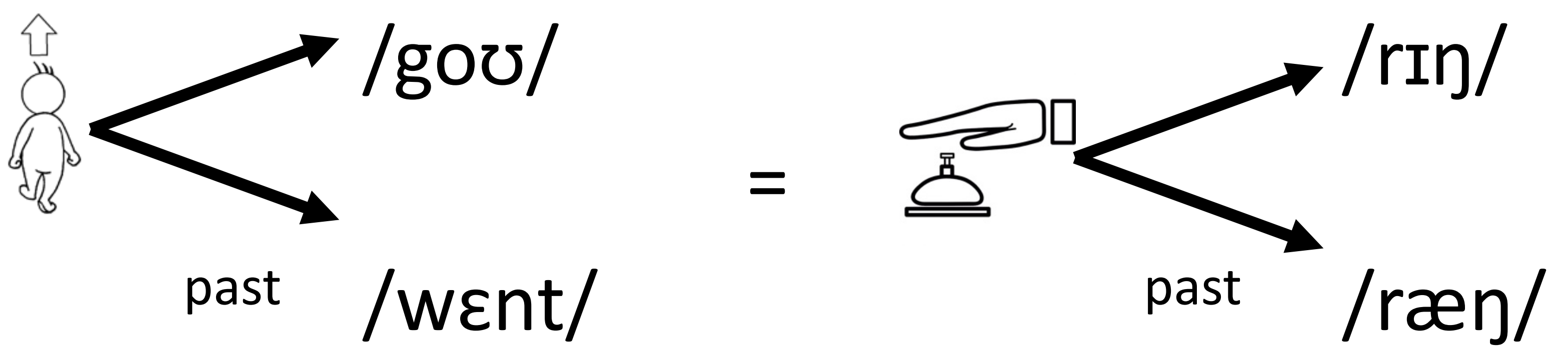
Harley (2014) takes suppletion to stand for the situation in which the same “root” has two phonological forms associated to it.

The equation with weak suppletion gives:



A theory of suppletion

Pre-theoretically, this misses the point that in both [pleɪ]-[pleɪd] and [rɪŋ]-[ræŋ] there is only **one change** that is introduced - other than that the stems are identical. This is very different from [goʊ]-[wɛnt].



A theory of suppletion

It can even be formalized:

Past = floating /æ/ for a list of verbal bases

A process of overwriting will replace the base /ɪ/ by /æ/.

```
r  ɪ  ŋ        +æ
|  |  |
C  V  C  V
```

No suppletion in weak suppletion

/goʊ/

past

/wɛnt/

/rɪŋ/

Past

/d/

ø for 

/æ/ for 

As opposed to…

Weak suppletion = strong suppletion

/goʊ/

past /wɛnt/

/rɪŋ/

past /ræŋ/

/d/

Past ø for  , 

Facts unexpressed

- Both views miss the two following points

1) The change in the stem *implies* no /-d/

2) Stems having /æ/ as past marker have similar present URs: they all have /ɪN(C)/ in the present.

Facts unexpressed

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1) The change in the stem *implies* no /-d/

Not necessarily: sɛl-soʊl**d**

2) Stems having /æ/ as past marker have similar present URs: they all have /ɪN(C)/ in the present.

Seems to be more important: To reflect what the speaker knows, we should be able to express it.

Facts unexpressed

- Both views miss the two following points

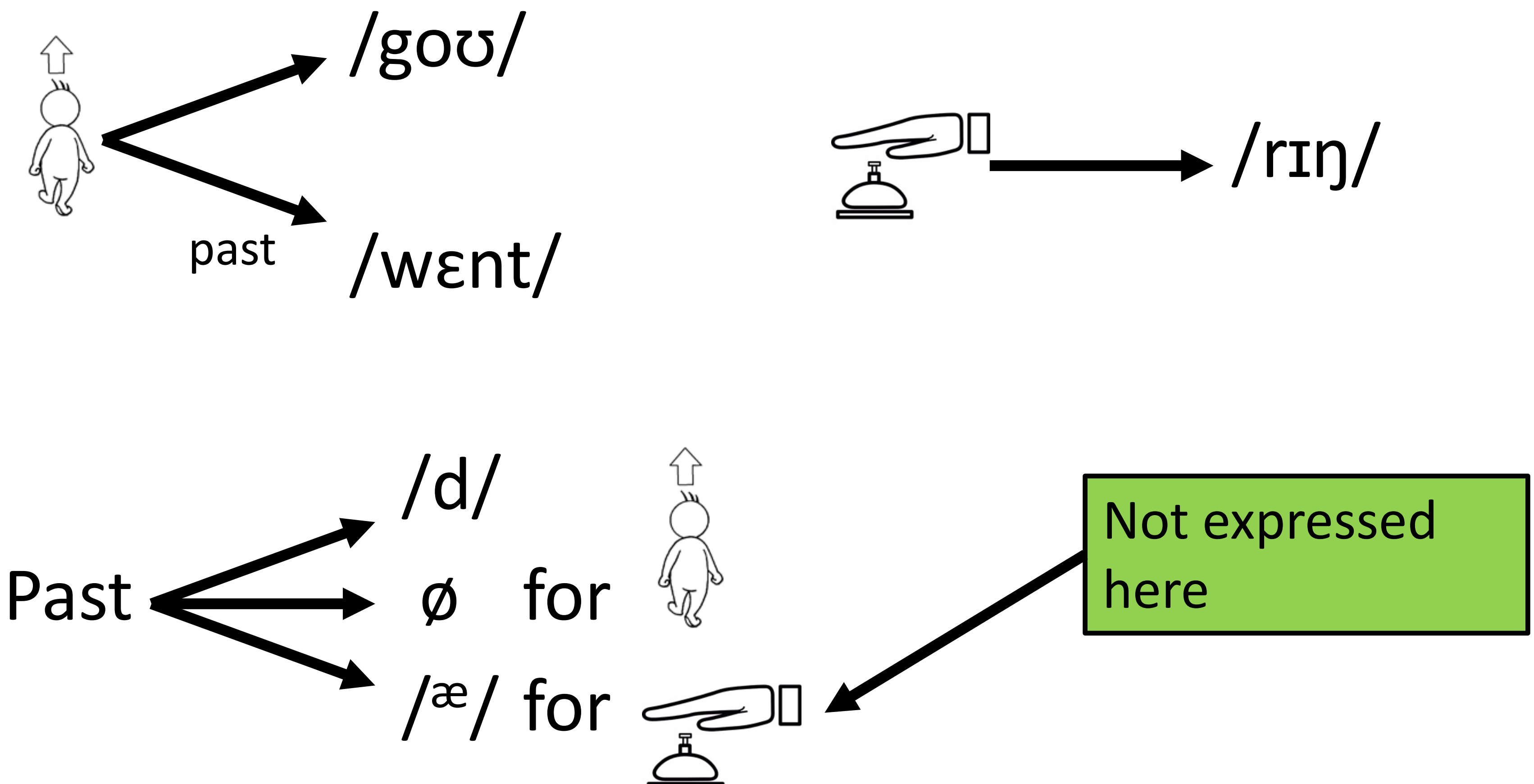
1) The change in the stem *implies* no /-d/

Not necessarily: sɛl-soʊl**d**

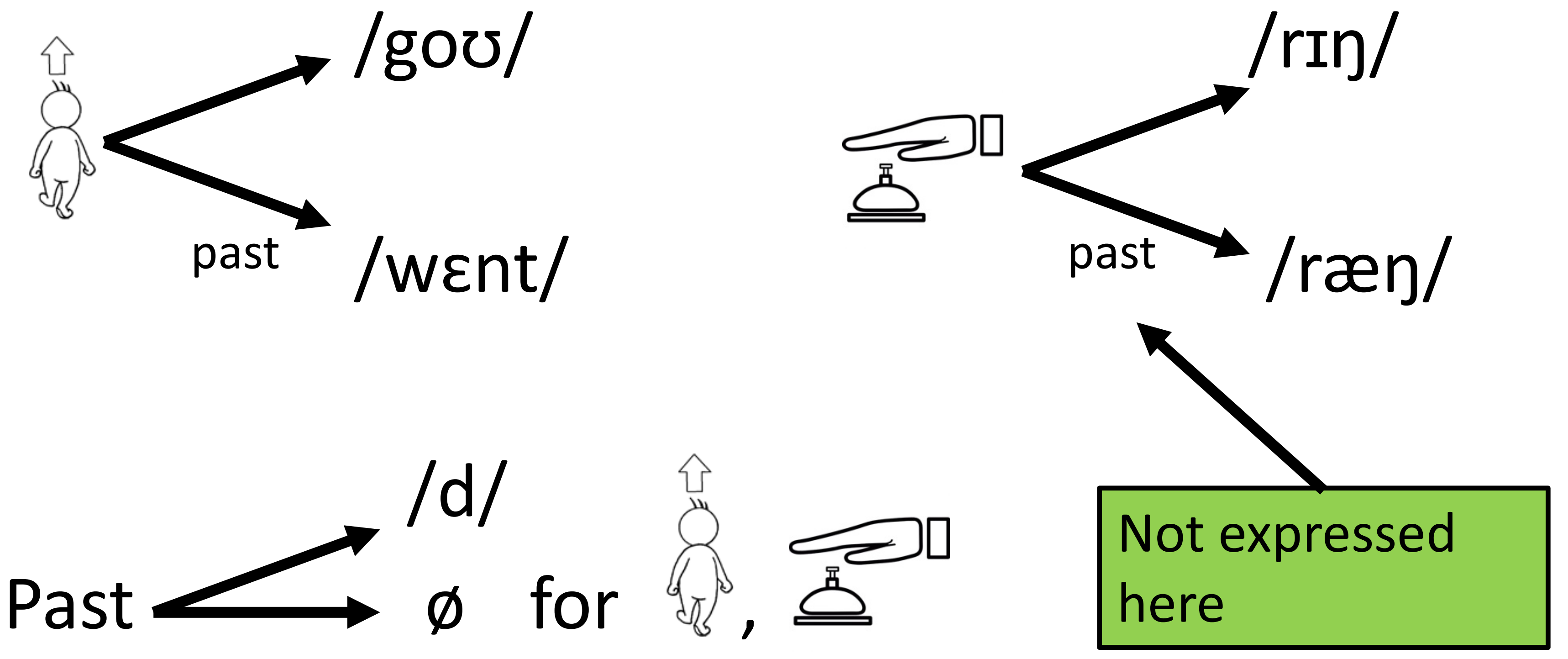
2) Stems having /æ/ as past marker have similar present URs: they all have /ɪN(C)/ in the present.

If the form of a root is CɪN(C), it is liable to change to /æ/ in the past… (synchronically – this group is not entirely closed)

No suppletion in weak suppletion



Weak suppletion = strong suppletion



Facts unexpressed

- Still, one might claim that

  1) the /i/=>/æ/ change is not general, so the forms have to remembered anyway (lexical redundancy)

  2) If one adopts “no suppletion” for /rɪŋ/, with /æ/ realizing “past”, then this case is irrelevant for the question of weak vs. strong suppletion…

Facts unexpressed

- Still, one might claim that

  1) the /i/=>/æ/ change is not general, so the forms have to remembered anyway (lexical redundancy)

  2) If one adopts “no suppletion” for /rɪŋ/, with /æ/ realizing “past”, then this case is irrelevant for ... strong supple...

We need a case where there is a clear distinction between two completely unrelated stems, and two related ones.

Suppletion in Semitic

Suppletion in Palestinian Arabic

	a. ‘write’	b. ‘command’	c. ‘walk’	d. ‘eat’	e. ‘come’
“root”	√ktb	√ʔmr	√mʃi	√ʔkl	√ʔʒi
perfective	katab	ʔamar	miʃi	ʔakal	ʒa:
participle act	ka:təb	ʔa:mər	ma:ʃi	ʔa:kəl	ma:ʒi
imperfective	-uktob	-uʔmor	-imʃi	-okol	-iʒi
imperative	ʔuktob	ʔuʔmor	ʔimʃi	kol	taʕa:l

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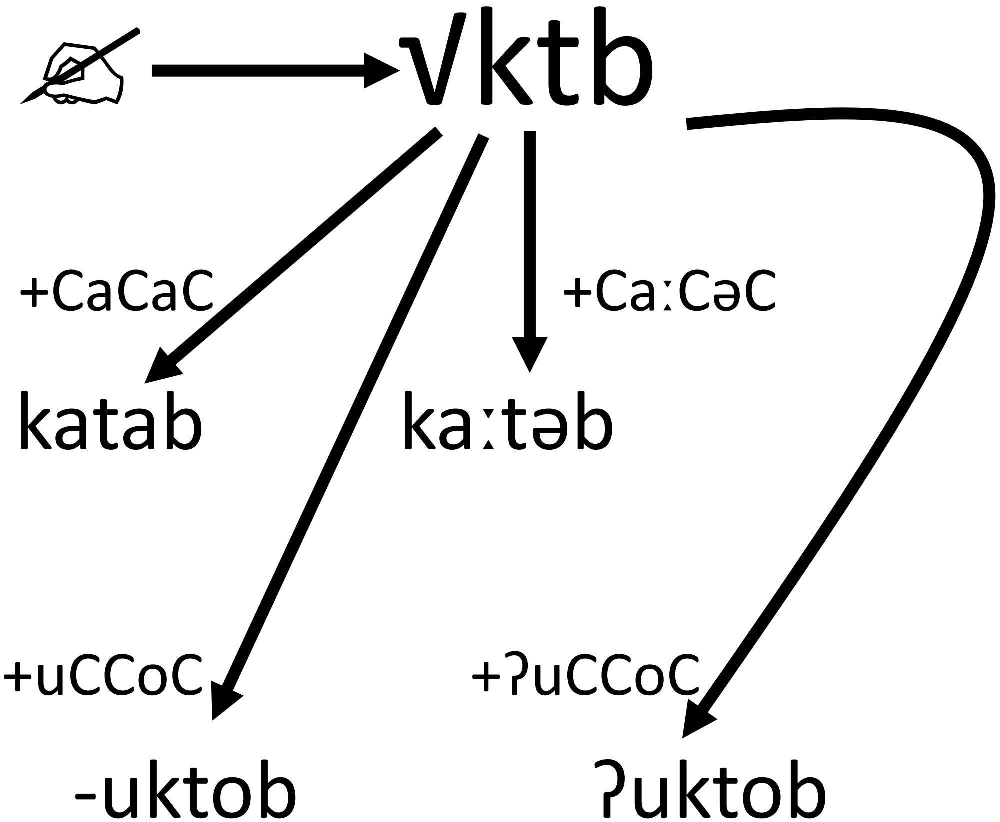
imperfective	-uktob	-uʔmor	-imʃi	-okol	-iʒi
imperative	ʔuktob	ʔuʔmor	ʔimʃi	kol	taʕaːl

Suppletion in Semitic

	a. ‘write’
“root”	√ktb
perfective	katab
participle act	kaːtəb
imperfective	-uktob
imperative	ʔuktob



Suppletion in Semitic

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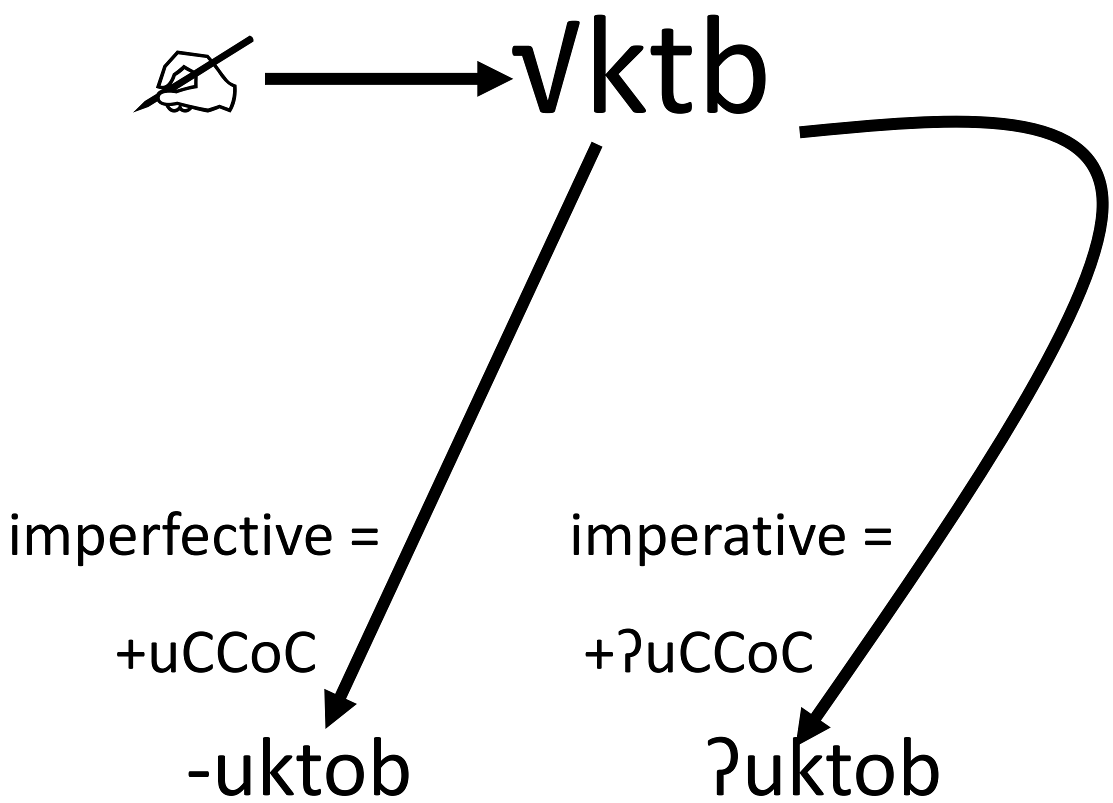
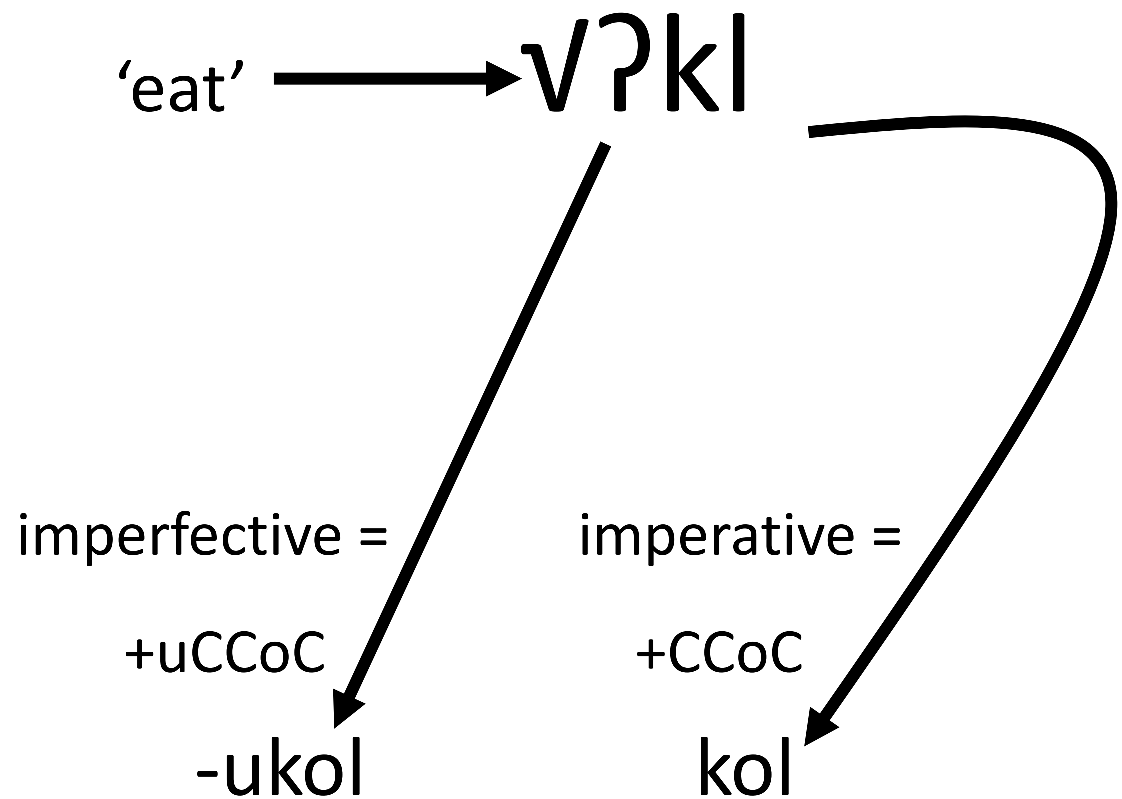
perfective	katab
participle act	kaːtəb
imperfective	-uktob
imperative	ʔuktob



Suppletion in Semitic

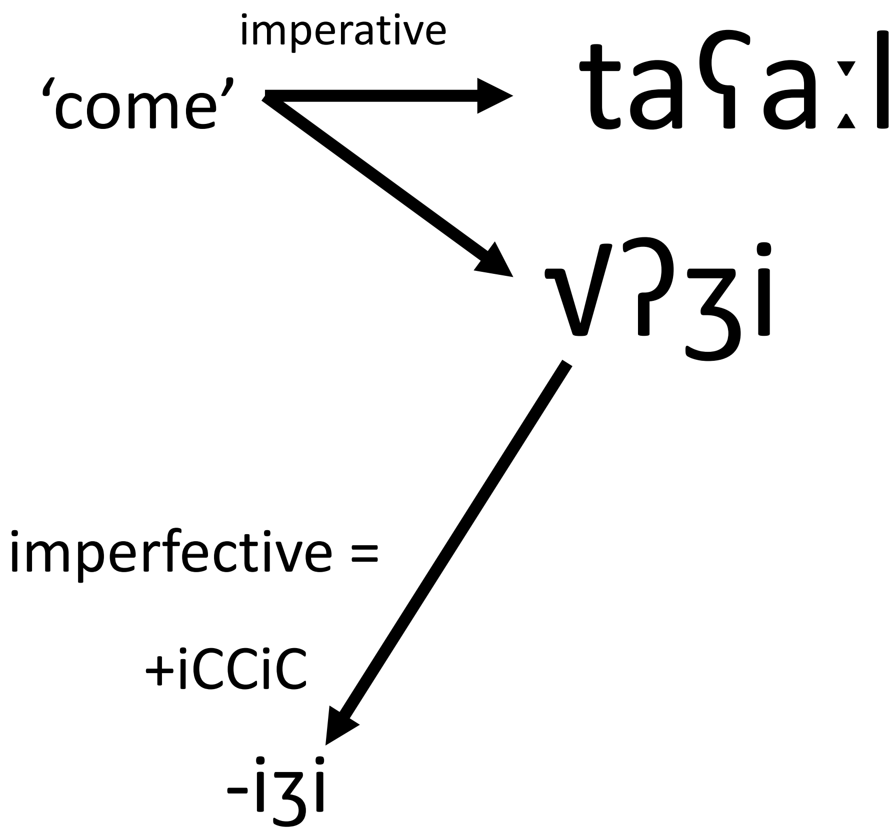
	d. ‘eat’
“root”	√ʔkl
perfective	ʔakal
participle act	ʔaːkəl
imperfective	-okol
imperative	kol



Weak suppletion

Suppletion in Semitic

	e. ‘come’
“root”	√ʔʒi
perfective	ʒa:
participle act	ma:ʒi
imperfective	-iʒi
imperative	taʕa:l



Strong suppletion

Suppletion in Semitic

Qaraqosh Neo-Aramaic

		‘open’	‘put’	+‘it’
Infinitive		pθaχa	draja	
Past		pθɪχ-	dri-	
Non-past	3msg	paθəχ	darə	dari-lə
	3fmsg	paθχ-a	darj-a	
	3pl	paθχ-i	dar-e	
	1pl	paθχ-aχ	dar-aχ	

Suppletion in Semitic

Qaraqosh Neo-Aramaic

		‘open’	‘put’	+‘it’
Infinitive		**pθ**a**χ**a	**dr**a**j**a	
Past		**pθ**ɪ**χ**-	**dr**i-	
Non-past	3msg	**p**a**θ**ə**χ**	**d**a**r**ə	dari-lə
	3fmsg	**p**aθ**χ**-**a**	**d**a**rj**-a	
	3pl	**p**a**θχ**-i	**d**a**r**-e	
	1pl	**p**a**θχ**-aχ	**d**a**r**-aχ	
		√pθχ	√dr?	

Suppletion in Semitic

Qaraqosh Neo-Aramaic

		'open'	'put'	+'it'
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Past		**pθ**ɪ**χ**-	**dr**i-	
Non-past	3msg	**p**a**θ**ə**χ**	**d**a**r**ə	dari-lə
	3fmsg	**p**aθ**χ**-**a**	**d**a**rj**-a	
	3pl	**p**a**θχ**-i	**d**a**r**-e	
	1pl	**p**a**θχ**-aχ	**d**a**r**-aχ	
		√pθχ	√dr**j**	

Suppletion in Semitic

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	3fmsg	**p**aθ**χ**-**a**	**d**a**rj**-a	
	3pl	**p**a**θχ**-i	**d**a**r**-e	
	1pl	**p**a**θχ**-aχ	**d**a**r**-aχ	
		√pθχ	√drj	

Suppletion in Semitic

Qaraqosh Neo-Aramaic

		‘open’	‘put’	+‘it’
Infinitive				
Past				
Non-past				
	3fmsg	**p**aθ**χ**-**a**	**d**a**r**j-a	
	3pl	**p**a**θχ**-i	**d**a**r**-e	
	1pl	**p**a**θχ**-aχ	**d**a**r**-aχ	
		√pθχ	√drj	

Crucially, all j-final roots behave exactly like this one: an underlying /j/ never surfaces in the 1pl nonpast.

Suppletion in Semitic

Qaraqosh Neo-Aramaic

		‘open’	‘put’ +‘it’
Infinitive			
Past			
Non-past			

There is really no synchronic reason for /j/ to surface before /-a/, but not before /-aχ/

3fmsg	**p**a**θχ-a**	**d**a**rj**-a
3pl	**p**a**θχ**-i	**d**a**r**-e
1pl	**p**a**θχ**-aχ	**d**a**r**-aχ
	√pθχ	√drj

Suppletion in Semitic

Qaraqosh Neo-Aramaic

		'open'	'put'	+'it'
Infinitive				
Past				
Non-past				
	3fmsg	**p**a**θχ-a**	**dar**j-a	
	3pl	**p**a**θχ**-i	**dar**-e	
	1pl	**p**a**θχ**-aχ	**dar**-aχ	
		√pθχ	√drj	

The alternation between √CCj and √CCø must be conditioned by the morpho-syntactic features [1pl,-past].

‘put’ → /drj/

‘put’ → /drø/ in [1pl, nonpast]

Non-past	3fmsg	**p**aθ**χ-a**	**d**a**rj**-a
	1pl	**p**a**θχ**-aχ	**d**a**r**-aχ

/drj/

‘put’

/drø/ in [1pl, nonpast]

Non-past	3fmsg	**p**aθ**χ-a**	**d**ar**j**-a
	1pl	**p**a**θχ**-aχ	**d**a**r**-aχ

But what the speaker knows is not about the verb ‘put’. It’s independent of meaning, and depends on the **phonological identity** of the **root**.

Namely, on the appearance of /j/ in the root.

‘put’ → /drj/

‘put’ → /drø/ in [1pl, nonpast]

Non-past	3fmsg	**p**aθ**χ-a**	**d**a**rj**-a
	1pl	**p**a**θχ**-aχ	**d**a**r**-aχ

But what the speaker knows is not about the verb ‘put’. It’s independent of meaning, and depends on the **phonological identity** of the **root**.

/drj/

'put'

/drø/ in [1pl,

But what **is** the root? It is not the underlying representation of any word…

Non-past	3fmsg	**p**aθ**χ-a**	**d**a**rj**-a
	1pl	**p**a**θχ**-aχ	**d**a**r**-aχ

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The phonological index

‘put’ → √drj → /drj/

√drj → /drø/ in [1pl, nonpast]

Non-past	3fmsg	**p**aθ**χ-a**	**d**a**rj**-a
	1pl	**p**a**θχ**-aχ	**d**a**r**-aχ

The **phonological index,** mentioned also in the work of Hagit Borer, is “the common denominator of all the occurrences of a given root.”

The phonological index

'put' → √drj → /drj/

√drj → /drø/ in [1pl, nonpast]

Non-past	3fmsg	**p**aθ**χ-a**	**d**a**rj**-a
	1pl	**p**a**θχ**-aχ	**d**a**r**-aχ

A speaker of Qaraqosh knows that if a phoneme /j/ is the last phoneme in the phonological index, it is elided in the 1pl nonpast.

The phonological index

Qaraqosh

/drj/

‘put’ → √drj

/drø/ in [1pl, nonpast]

Palestinian

/ʔʒi/

‘come’

/taʕaːl/ in imperative

The phonological index

Qaraqosh

Weak suppletion

‘put’ → √drj → /drj/

→ /drø/ in [1pl, nonpast]

Palestinian

Strong suppletion

‘come’ → /ʔʒi/

→ /taʕaːl/ in imperative

The phonological index: English

<u>Qaraqosh</u>

→ /r_ŋ/ → /rɪŋ/ **Weak suppletion**

→ /ræŋ/ in [past]

→ /sɛl/ → /sɛl/ **Weak suppletion**

→ /soʊl/ in [past]

The phonological index: English

Strong suppletion!!!

/goʊ/

/wɛnt/ in [past]

Weak suppletion

/sɛl/

/sɛl/

/soʊl/ in [past]

Summary

- In a theory that recognizes the existence of the **phonological index**, there is a formal difference between weak and strong suppletion.
  - Weak suppletion: one PI, two URs
  - Strong suppletion: one concept, two PIs

Annex: more proof for the existence of the phonological index

- We’ve seen that the **phonological index** is useful in formalizing the distinction between the two types of suppletion.

- But can we show it is needed independently?

Annex: more proof for the existence of the phonological index

- We’ve seen that the **phonological index** is useful in formalizing the distnction between the two types of suppletion.

- But can we show it is needed independently?

- We will now see a case of allomorphy whose trigger must be the PI.

Israeli Hebrew √QTy

	a. ‘shine’	b. ‘convalesce’	c. ‘disturb’	d. ‘fertilize’
Past 3MSG	hivrik	hivri	hifría	hifra
3FMSG	hivrík-a	hivrí-a	hifrí-a	hifr^{e}-ta
3PL	hivrík-u	hivrí-u	hifrí-u	hifr-u
Action noun	havrak-a	havra-a	hafra-a	hafray-a
	√vrk	√vrʔ	√fra	√fry

⇒ 3fmsg is /-ta/ and not /-a/ in the last group.

⇒ The trigger cannot be 1) the vowel-final stem/UR (cf. b,c); 2) some similarity avoidance (c); or specific for ‘fertilize’ (as in Qaraqosh, all y-final verbs trigger this allomorphy).

Israeli Hebrew √QTy

	a. ‘shine’	b. ‘convalesce’	c. ‘disturb’	d. ‘fertilize’
Past 3MSG	hivrik	hivri	hifría	hifra
3FMSG	hivrík-a	hivrí-a	hifrí-a	hifr^{e}-ta
3PL	hivrík-u	hivrí-u	hifrí-u	hifr-u
Action noun	havrak-a	havra-a	hafra-a	hafray-a
	√vrk	√vrʔ	√fra	√fry

UR association rule for the 3fmsg.past

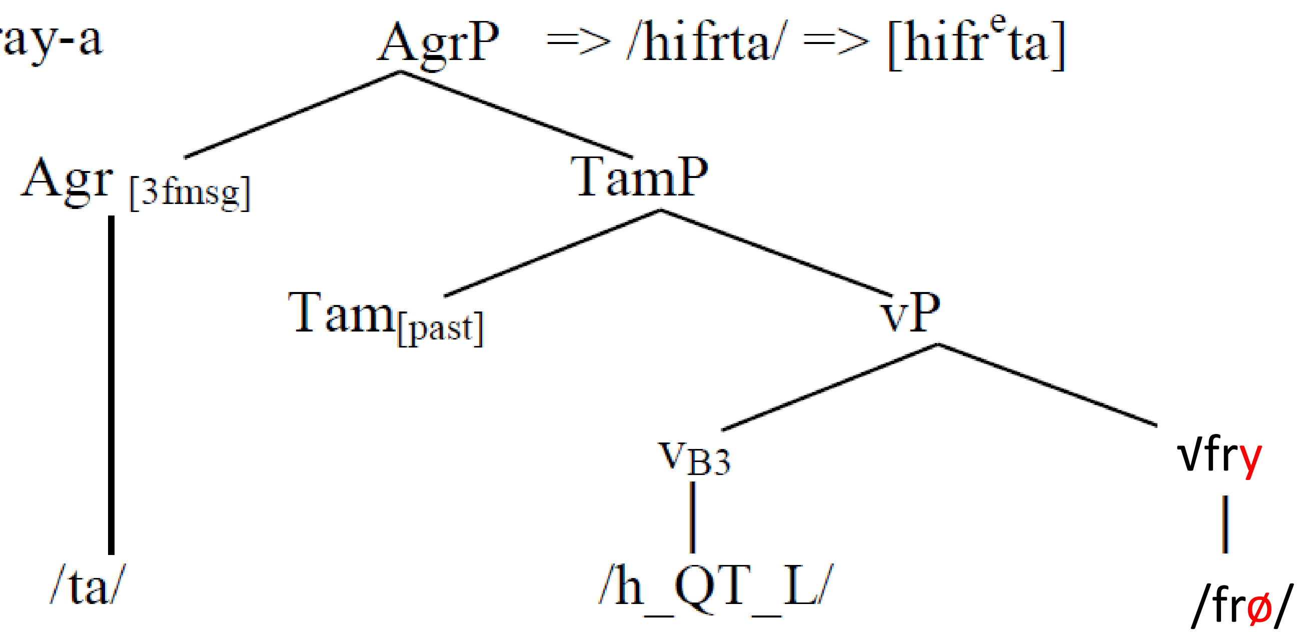
[3fmsg],[past] ⇔ /-a/

⇔ /-ta/ / √QTY

The phonological Index

Israeli Hebrew √QTy

	d. ‘fertilize’
Past 3MSG	hifra
3FMSG	hifr^{e}-ta
3PL	hifr-u
Action noun	hafray-a



Allomorphy

an introduction to the phonology-morphology interface

5th Class: Allomorphy and Paradigm Uniformity

Paradigm Uniformity: the pressure for all forms of a certain paradigm to resemble one another.

This pressure has been claimed to interact with phonological well-formedness constraints, and so to be **active in the phonology** of languages.

Paradigm

“all of the forms of the inflection of a certain *lexeme*”

(Lexeme = our “concept”)

(We will loosely define Inflection as “the set of forms that the large majority of items of a given category **autmatically** have”)

Paradigm Uniformity: an example

Modern Hebrew

past	*pres.part.*	*futur*	
ʃi**p**e**ʁ**	me**ʃ**a**p**e**ʁ**	je**ʃ**a**p**e**ʁ**	'improve'
ki**p**e**l**	me**k**a**p**e**l**	je**k**a**p**e**l**	'fold'
vi**t**e**ʁ**	me**v**a**t**e**ʁ**	je**v**a**t**e**ʁ**	'give up'
bi**k**e**ʃ**	me**v**a**k**e**ʃ**	je**v**a**k**e**ʃ**	'ask for'

Paradigm Uniformity: an example

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vi**k**e**ʃ**	me**v**a**k**e**ʃ**	je**v**a**k**e**ʃ**	‘ask for’

Speakers seem to want all occurrences that are inflectionally related to the concept root to be similar enough.

Paradigm Uniformity: an example

Modern Hebrew

This is relevant for a course on allomorphy, because the change seems to militate against having more than one allomorph in a paradigm.

ki**p**el	me**k**a**p**el	je**k**a**p**el	'fold'
vite**ʁ**	me**v**a**t**e**ʁ**	je**v**a**t**e**ʁ**	'give up'
vi**k**e**ʃ**	me**v**a**k**e**ʃ**	je**v**a**k**e**ʃ**	'ask for'

Speakers seem to want all occurrences that are inflectionally related to the concept root to be similar enough.

Analysis of a case of PU

Yiddish (from Albright 2010)

ʃtuʁəm ‘ storm’ ʃtuʁm-iʃ ‘stromy’

Analysis of a case of PU

Yiddish

ʃtuʁəm ‘ storm’ ʃtuʁm-iʃ ‘stromy’

/ʃtuʁm/ /ʃtuʁm-iʃ/

*ʁm(C)]$_{syll}$

[ʁm] is not a possible syllable-final cluster

[ʃtuʁəm] [ʃtuʁmiʃ]

Analysis of a case of PU

Yiddish

ʃtuʁəm ‘ storm’ ʃtuʁm-iʃ ‘stromy’

Infinitive	nem-ən	ʃtruʁəm-ən
1sg	nem	ʃtuʁəm
2sg	nem-st	ʃtruʁəm-st
1/3pl	nem-ən	ʃtuʁəm-ən
3sg/2pl	nem-t	ʃtuʁəm-t

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[ə] insertion follows from *[ʁm(C)]$_{syll}$

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1/3pl	nem-ən	ʃtuʁəm-ən
3sg/2pl	nem-t	ʃtuʁəm-t

[ə] insertion **does not** follow from *[ʁm(C)]$_{syll}$

Analysis of a case of PU

The insight: [ə] is inserted everywhere in the paradigm because it has to be inserted **somwhere** in the paradigm

Infinitive	nem-ən	ʃtruʁəm-ən
1sg	nem	ʃtuʁəm
2sg	nem-st	ʃtruʁəm-st
1/3pl	nem-ən	ʃtuʁəm-ən
3sg/2pl	nem-t	ʃtuʁəm-t

Analysis of a case of PU

/ʃtuʁm+t,st,ən,ø/	*ʁm]$_{syll}$	PU	DEP
a. [ʃtuʁm, ʃtuʁmən]	*!		
☞ b. [ʃtuʁəm, ʃtuʁəmən]			*
c. [ʃtuʁəm, ʃtuʁmən]		*!	

Analysis of a case of PU

/ʃtuʁm+t,st,ən,ø/	$*\text{ʁm]}_{syll}$	PU	DEP
a. [ʃtuʁm, ʃtuʁmən]	*!		
☞ b. [ʃtuʁəm, ʃtuʁəmən]			*
c. [ʃtuʁəm, ʃtuʁmən]		*!	

For any form that belongs to a paradigm, phonology **must** now “look” at all the other forms in that paradigm in order to produce that word.

Analysis of a case of PU

/ʃtuʁm+t,st,ən,ø/	*ʁm]$_{syll}$	PU	DEP
a. [ʃtuʁm, ʃtuʁmən]	*!		
☞ b. [ʃtuʁəm, ʃtuʁəmən]			*
c. [ʃtuʁəm, ʃtuʁmən]		*!	

For any form that belongs to a paradigm, phonology

Or rather, **no form belonging to a paradigm is ever computed alone**.

What PU means

Admitting PU into the same system that derives phonology

=

A major departure from what phonology is supposed to do. Not only can it now evaluate groups of words, but also many individual words don’t even have URs. A word like [ʃtuʁəmən] does not have a UR…

Alternative view of PU

/ʃtuʁm+t,st,ən,ø/	$*$ʁm$]_{syll}$	PU	DEP
a. [ʃtuʁm, ʃtuʁmən]	*!		
☞ b. [ʃtuʁəm, ʃtuʁəmən]			*
c. [ʃtuʁəm, ʃtuʁmən]		*!	

Raffesiefen (2016): otherwise exceptionless “phonotactic” processes (e.g. German final devoicing) are ***never*** affected by PU.

Alternative view of PU

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So what we are stabilizing throught Paradigm uniformity is **not the output**, but the UR that will be the input to the phonological computation.

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So what we are stabilizing throught Paradigm uniformity is **not the output**, but the UR that will be the input to the phonological computation.

Indeed, we have assumed that allomorphy – two underlying represnetations – is generally dispreffered. Nobody cares about there being two surface represntations (or phonology is out of work).

Alternative view of PU

Infinitive	ʃtruʁəm-ən
1sg	ʃtuʁəm
2sg	ʃtruʁəm-st
1/3pl	ʃtuʁəm-ən
3sg/2pl	ʃtuʁəm-t

Given these surface forms, we may assume that there is a requirement for all of them to come from a single UR. The UR must have /ə/, otherwise we would not derive [ʃtuʁəmən]

Alternative view of PU

Infinitive	ʃtruʁəm-ən
1sg	ʃtuʁəm
2sg	ʃtruʁəm-st
1/3pl	ʃtuʁəm-ən
3sg/2pl	ʃtuʁəm-t

But in fact the point is to **derive** [ʃtuʁ**ə**mən] from the fact that it appears in the same paradigm as [ʃtuʁəm].

PU: "Select the **underying representation** such that all the surface forms in a paradigm are identical."

Alternative view of PU

Given *[ʃtuʁm], and the solution [ʃtuʁəm]

Either /ʃtuʁəm/ or /ʃtuʁm/ are good for [ʃtuʁm].

But

/ʃtuʁm/ will give [ʃtuʁəm], [ʃtuʁmən]

/ʃtuʁəm/ will give [ʃtuʁəm], [ʃtuʁəmən]

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/ʃtuʁəm/ will give [ʃtuʁəm], [ʃtuʁəmən]

In other words, PU has nothing to say about well-formedness. It optimizes the **lexicon**.

Alternative view of PU

- PU cannot interact with well-formedness, because it does not optimize a specific form.

- This derives the correct result: while PU may stand in the way of processes, there is no known case where PU **creates** an otherwise illicit situation.

PU-optimizing allomorphy

Modern Hebrew (Bat El 2008)

	sg	*plural*	
	pa**k**í**d**	**pkid**-ím	'clerk'
	ʃa**χ**é**n**	**ʃχ**e**n**-ím	'neighbor'
	ʃa**f**á**n**	**ʃf**a**n**-ím	'rabbit'
but	**ʃ**a**p**á**ʁ**	**ʃ**a**p**a**ʁ**-ím	'barber'

Bat El: 1) Word=Foot (=2 vowels in MH)
2) $\text{PU}_{\text{syll.number}}$

PU-optimizing allomorphy

Since /a/-syncope is not general in Hebrew, the option must be lexically-stored

	sg	*plural*	
	pa**k**í**d**	**pkid**-ím	‘clerk’
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Bat El: 1) Word=Foot (=2 vowels in MH)
2) $\mathrm{PU}_{\mathrm{syll.number}}$

PU-optimizing allomorphy

Since /a/-syncope is not general in Hebrew, the option must be lexically-stored

$$
\begin{tikzcd}
& \text{/pakid/} \\
\text{‘clerk’} \arrow[ur] \arrow[dr] & \\
& \text{/pkid/}
\end{tikzcd}
$$

but

‘barber’ $\longrightarrow$ /sapar/

PU-optimizing allomorphy

/pakid,pkid/+/ø,im/	Max	PU_{syll}	$*[_{\#}CC$
☞a. [p**a**kid, pkidim]			*
b. [pkid, pkidim]			*!*
b. [p**a**kid, p**a**kidim]		*!	
c. [pkid,p**a**kidim]		*!	

(Interpretation of Bat El 2008)

PU-optimizing allomorphy

/sapaʁ/+/ø,im/	Max	PU_{syll}	$*[_{\#}CC$
a. [s**a**paʁ, spaʁim]	*!		*
b. [spaʁ, spaʁim]	*!*		**
☞ c. [s**a**paʁ, s**a**paʁim]		*	
d. [spaʁ, s**a**paʁim]	*!		

(Interpretation of Bat El 2008)

General Remark

This is an interesting case: PU, a counter-allomorphy force, is aided by allomorphy…

It is a problem for the view I have proposed of PU as a non-phonological unification of the phonemic form: here it is really the outputs that are being uniformized…

General Objection

The first vowel of the alternating base syncopates before any stress-bearing suffix:

pakid	‘clerk’
pkid-ut	‘clerkhood, place od clerks’
pkid-on	‘small clerk’
pkid mas	‘tax clerk’

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pakid	‘clerk’
pkid-ut	‘clerkhood, place od clerks’
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pkid mas	‘tax clerk’

(Unlike Yiddish [ʃtuʁm-iʃ] vs. [ʃtuʁəm-ən])

General Objection

The first vowel of the alternating base syncopates before any stress-bearing suffix:

pakid	‘clerk’
pkid-ut	‘clerkhood, place od clerks’
pkid-on	‘small clerk’
pkid mas	‘tax clerk’

These cannot be viewed as part of the paradigm of the word “clerk”, because they are not automatic forms

Autosegmental Alternative

Does not need any fancy machinery in this case

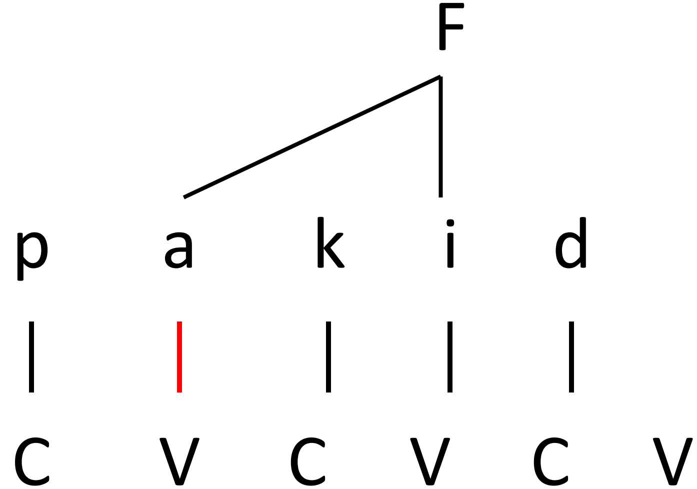
p	a	k	i	d	
|		|	|	|	
C	V	C	V	C	V

vs.

s	a	p	a	ʁ	
|	|	|	|	|	
C	V	C	V	C	V

Autosegmental Alternative

Vowel retained when in “foot”;



Autosegmental Alternative

Vowel not retained when outside "foot"

F

p a k i d i m

C V C V C V C V

Autosegmental Alternative

Lexically-associated vowel not susceptible to “footing” considerations

Interim Summary

Paradigm Uniformity

- does not optimize surface forms
- uniformizes the UR such that the surface forms are maximally similar.
- is an anti-allomorphy force that works within paradigms.

Other alternatives

The two cases we've discussed at length – Yiddish and Hebrew – there seems to be a **base** and a derivative.

Thus, they can be explained by assuming a two-domain structure, whereby the form of the base is set, and thus the suffix cannot alter it.

Derivational Alternative to PU

In Yiddish, one first derives

/ʃtuʁm/ => [ʃtuʁəm]

And then one is stuck with the [ə].

In Modern Hebrew, one first fixes a syllable number in the base: /pakid/ = 2

And then one must attempt to maintain it

/pakidim/ => [pkidim] (though why a?)

Derivational Alternative to PU

- If the base-faithfulness view is available, why would anybody need PU at all?

Derivational Alternative to PU

- If the base-faithfulness view is available, why would anybody need PU at all? Is there **any** proof that paradigms are evaluated as sets?

- This *has* been claimed.

Paradigms evaluated as whole

Lebanese Arabic (Haddad & Wiltshire 2014)

He told me	ħikeː-**l**i
He told you$_{ms}$	ħikeː-**l**ak
He told you$_{fm}$	ħikeː-**l**ik
He told him	ħikeː-**l**o
He told her	ħikeː-**l**a
He told us	ħikeː-**l**na
He told you$_{pl}$	ħikeː-**l**kun
He told them	ħikeː-**l**un

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Lebanese Arabic (Haddad & Wiltshire 2014)

He told me	ħikeː-**l-**i
He told you$_{ms}$	ħikeː-**l-**ak
He told you$_{fm}$	ħikeː-**l-**ik
He told him	ħikeː-**l-**o
He told her	ħikeː-**l-**a
He told us	ħikeː-**l-**na
He told you$_{pl}$	ħikeː-**l-**kun
He told them	ħikeː-**l-**un

Dative=/l/

Paradigms evaluated as whole

Lebanese Arabic (Haddad & Wiltshire 2014)

		‘answer’
He told me	ħikeː-**l-**i	radda-**ll**-i
He told you$_{ms}$	ħikeː-**l-**ak	radda-**ll**-ak
He told you$_{fm}$	ħikeː-**l-**ik	radda-**ll**-ik
He told him	ħikeː-**l-**o	radda-**ll**-o
He told her	ħikeː-**l-**a	radda-**ll**-a
He told us	ħikeː-**l-**na	radda-**l**-na
He told you$_{pl}$	ħikeː-**l-**kun	radda-**l**-kun
He told them	ħikeː-**l-**un	radda-**ll**-un

Dative=/l/ or /ll/?

Paradigms evaluated as whole

In Lebanese, stress falls on the rightmost of the last three heavy syllables (= closed or with long vowel)

He told me	ħikeː-**l-**i	radda-**ll**-i
He told you$_{ms}$	ħikeː-**l-**ak	radda-**ll**-ak
He told you$_{fm}$	ħikeː-**l-**ik	radda-**ll**-ik
He told him	ħikeː-**l-**o	radda-**ll**-o
He told her	ħikeː-**l-**a	radda-**ll**-a
He told us	ħikeː-**l-**na	radda-**l**-na
He told you$_{pl}$	ħikeː-**l-**kun	radda-**l**-kun
He told them	ħikeː-**l-**un	radda-**ll**-un

Dative=/l/ or /ll/?

Paradigms evaluated as whole

In Lebanese, stress falls on the rightmost of the last three heavy syllables (= closed or with long vowel)

He told me	ħikéː-**l**-i	radda-**l**-i	radda-**ll**-i
He told you$_{ms}$	ħikéː-**l**-ak	radda-**l**-ak	radda-**ll**-ak
He told you$_{fm}$	ħikéː-**l**-ik	radda-**l**-ik	radda-**ll**-ik
He told him	ħikéː-**l**-o	radda-**l**-o	radda-**ll**-o
He told her	ħikéː-**l**-a	radda-**l**-a	radda-**ll**-a
He told us	ħikéː-**l**-na	radda-**l**-na ☹	radda-**l**-na
He told you$_{pl}$	ħikéː-**l**-kun	radda-**l**-kun	radda-**l**-kun
He told them	ħikéː-**l**-un	radda-**l**-un	radda-**ll**-un

Dative=/l/ or /ll/, whichever uniformizes the paradigm for stress! No base!

Paradigms evaluated as whole

As a result of a problem raised in the 1/2pl, the entire paradim is changed: real **paradigm** uniformity.

He told me	ħikéː-**l**-i	radda-**l**-i	radda-**ll**-i
He told you$_{ms}$	ħikéː-**l**-ak	radda-**l**-ak	radda-**ll**-ak
He told you$_{fm}$	ħikéː-**l**-ik	radda-**l**-ik	radda-**ll**-ik
He told him	ħikéː-**l**-o	radda-**l**-o	radda-**ll**-o
He told her	ħikéː-**l**-a	radda-**l**-a	radda-**ll**-a
He told us	ħikéː-**l**-na	radda-**l**-na ☹	radda-**l**-na
He told you$_{pl}$	ħikéː-**l**-kun	radda-**l**-kun	radda-**l**-kun
He told them	ħikéː-**l**-un	radda-**l**-un	radda-**ll**-un

Dative=/l/ or /ll/, whichever uniformizes the paradigm for stress! No base!

Paradigms evaluated as whole

Lebanese Arabic (Haddad & Wiltshire 2014)

‘gave’		he gave+dative	+accusative
ʒib-t	me	ʒab-**l**-i	ʒaːb-ni
ʒib-t	you$_{ms}$	ʒab-**l**-ak	ʒaːb-ak
ʒib-ti	you$_{fm}$	ʒab-**l**-ik	ʒaːb-ik
ʒaːb	him	ʒab-**l**-o	ʒaːb-o
ʒaːb-at	her	ʒab-**l**-a	ʒaːb-a
ʒib-na	us	ʒab-**l**-na	ʒaːb-na
ʒib-tu	you$_{pl}$	ʒab-**l**-kun	ʒaːb-kun
ʒaːb-u	them	ʒab-**l**-un	ʒaːb-un

Paradigms evaluated as whole

Lebanese Arabic (Haddad & Wiltshire 2014)

‘gave’		he gave+dative	+accusative
ʒib-t	me	ʒab-**l**-i	ʒaːb-ni
ʒib-t	you$_{ms}$	ʒab-**l**-ak	ʒaːb-ak
ʒib-ti	you$_{fm}$	ʒab-**l**-ik	ʒaːb-ik
ʒaːb	him	ʒab-**l**-o	ʒaːb-o
ʒaːb-at	her	ʒab-**l**-a	ʒaːb-a
ʒib-na	us	ʒab-i**l**-na	ʒaːb-na
ʒib-tu	you$_{pl}$	ʒab-i**l**-kun	ʒaːb-kun
ʒaːb-u	them	ʒab-**l**-un	ʒaːb-un

i is epenthesis, *CCC

Paradigms evaluated as whole

Lebanese Arabic (Haddad & Wiltshire 2014)

'gave'		he gave+dative	+accusative
ʒib-t	me	ʒab-**l**-i	ʒaːb-ni
ʒib-t	you$_{ms}$	ʒab-**l**-ak	ʒaːb-ak
ʒib-ti	you$_{fm}$	ʒab-**l**-ik	ʒaːb-ik
ʒaːb	him	ʒab-**l**-o	ʒaːb-o
ʒaːb-at	her	ʒab-**l**-a	ʒaːb-a
ʒib-na	us	ʒab-i**l**-na	ʒaːb-na
ʒib-tu	you$_{pl}$	ʒab-i**l**-kun	ʒaːb-kun
ʒaːb-u	them	ʒab-**l**-un	ʒaːb-un

'He gave'=/ʒaːb/ or /ʒab/?

Paradigms evaluated as whole

The configuration CV́ːCVCCVC is problematic according to H&W. Vowel must shorten.

‘gave’		he gave+dativ	☹	+accusative
ʒib-t	me	ʒab-**l**-i	ʒaːb-**l**-i	ʒaːb-ni
ʒib-t	you_{ms}	ʒab-**l**-ak	ʒaːb-**l**-ak	ʒaːb-ak
ʒib-ti	you_{fm}	ʒab-**l**-ik	ʒab-**l**-ik	ʒaːb-ik
ʒaːb	him	ʒab-**l**-o	ʒaːb-**l**-o	ʒaːb-o
ʒaːb-at	her	ʒab-**l**-a	ʒaːb-**l**-a	ʒaːb-a
ʒib-na	us	ʒab-i**l**-na	ʒaːb-i**l**-na ☹	ʒaːb-na
ʒib-tu	you_{pl}	ʒab-i**l**-kun	ʒaːb-i**l**-kun	ʒaːb-kun
ʒaːb-u	them	ʒab-**l**-un	ʒaːb-**l**-un	ʒaːb-un

Paradigms evaluated as whole

As a result of a problem raised in the 1/2pl, the entire paradim is changed: real **paradigm** uniformity.

‘gave’		he gave+dativ	☹	+accusative
ʒib-t	me	ʒab-**l**-i	ʒaːb-**l**-i	ʒaːb-ni
ʒib-t	you$_{ms}$	ʒab-**l**-ak	ʒaːb-**l**-ak	ʒaːb-ak
ʒib-ti	you$_{fm}$	ʒab-**l**-ik	ʒab-**l**-ik	ʒaːb-ik
ʒaːb	him	ʒab-**l**-o	ʒaːb-**l**-o	ʒaːb-o
ʒaːb-at	her	ʒab-**l**-a	ʒaːb-**l**-a	ʒaːb-a
ʒib-na	us	ʒab-i**l**-na	ʒaːb-i**l**-na ☹	ʒaːb-na
ʒib-tu	you$_{pl}$	ʒab-i**l**-kun	ʒaːb-i**l**-kun	ʒaːb-kun
ʒaːb-u	them	ʒab-**l**-un	ʒaːb-**l**-un	ʒaːb-un

Paradigms evaluated as whole

The configuration CV́ːCVCCVC is problematic according to H&W. Vowel must shorten.

‘gave’		he gave+dativ	☹	+accusative
ʒib-t	me	ʒab-l-i	ʒaːb-l-i	ʒaːb-ni
ʒib-t	you$_{ms}$	ʒab-l-ak	ʒaːb-l-ak	ʒaːb-ak
ʒib-ti	you$_{fm}$	ʒab-l-ik	ʒab-l-ik	ʒaːb-ik
ʒaːb	him	ʒab-l-o	ʒaːb-l-o	ʒaːb-o
ʒaːb-at	her	ʒab-l-a	ʒaːb-l-a	ʒaːb-a
ʒib-na	us	ʒab-il-na	ʒaːb-il-na ☹	ʒaːb-na
ʒib-tu	you$_{pl}$	ʒab-il-kun	ʒaːb-il-kun	ʒaːb-kun
ʒaːb-u	them	ʒab-l-un	ʒaːb-l-un	ʒaːb-un

(Problem doesn’t arise in accusative, no CC-initial suffix.)

Alternatives?

- There might be autosegmental alternatives to this analysis. It is especially unclear what the problem is with CVːCVCCVC which is solved by shortening the vowel…

- The point here has been to illustrate what a PU effect would be that cannot be substituted by a two-step view.

To summarize

Paradigm Uniformity is the force whereby related surface forms become identical in some respect.

I have tried to argue that while PU is real, what is uniformized is not the surface forms really, but the UR. If this is correct, then PU is lexicon optimization, rather than the processing of a UR into a realization.

To summarize

This might be a welcome result, since performance-wise, it is unclear how the processing of one word can really be done while keeping in mind all the forms in the paradigm.

Allomorphy

Summary of the course

Very brief Course summary

- Sometimes, two realizations corresponding to the same linguistic information in different environments cannot immediately be derived from a single representation.

- In such cases, it is necessary to add information in order to describe **what the speaker knows.**

Course summary

- Autosegmental analyses tend to enrich the representation in order to arrive at a single UR.

- Allomorphic analyses accept the existence of two minimally different URs (e.g. /de/ dez/) and concentrate on their selection.

Course summary

- Because of the minimality of the difference, the analysis looks like it is repeating redundant information.

- But it remains to be proved whether this redundancy does not in fact reflect a redundancy in the speaker’s knowledge

Course summary

- PU effects suggests that items that share meaning-form pairing are somehow related. This association might be taken to argue that the first /de/ of /de/ and /dez/ **is** the same in some cognitive sense.

Course summary

- It is clear that at least in some cases, a single UR is not an attractive option.
- The question is raised then whether the choice between the two allomorphs is made in the same module that computes well-formedness.

Course summary

- Although this leads to phonology as much more than a blind filter, there seems to be some reason to believe it is true (Surmiran).

- …and the entire debate has consequences for a modular view of language – phonology is now choosing allomorphs, not just interpreting sequences of phonemes etc…

Course summary

- In this course, I hope to have shown

1) The basic assumptions of phonological theory
2) That allomorphy is crucial for many fundamental aspects of our linguistic model, to wit storage, representation, intermodular communication and the role of each module.

Classic puzzle

- I would like to end with a classic puzzle from language change.
- We have been assuming that there is no storage of two bases when they are identical, e.g. *play, played* [pleɪ, pleɪ-d].
- In other words, there is no UR /pleɪd/, only /pleɪ/+/d/.

Classic puzzle

- However, we know that morphologically-complex words, when they are frequent enough, resist change.

- For instance, one may suppose that the [t] at the end of forms like [fɛlt] was originally regular /d/ that underwent devoicing. At that point, speakers did not store a /t/, because phonology gave it to them /fɛl+d/=> [fɛlt]

Classic puzzle

- Then English lost devoicing. Why didn’t the /d/ return? If today this form still has the [t], it means that even when it was perfectly predicatable, it was stored…

- Much of our discussion revolved around the necessity of storing allomorphs or not. It seems however that forms are sometimes stored even if that is not necessary…

Classic puzzle

- What are the consequences for a theory of allomorphy then? Or can we just say that this is irrelevant?

Classic puzzle

- What are the consequences for a theory of allomorphy then? Or can we just say that this is irrelevant?

…to be continued…