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A modular approach to Phonologically Conditioned Allomorphy: the case of the Ligurian article system

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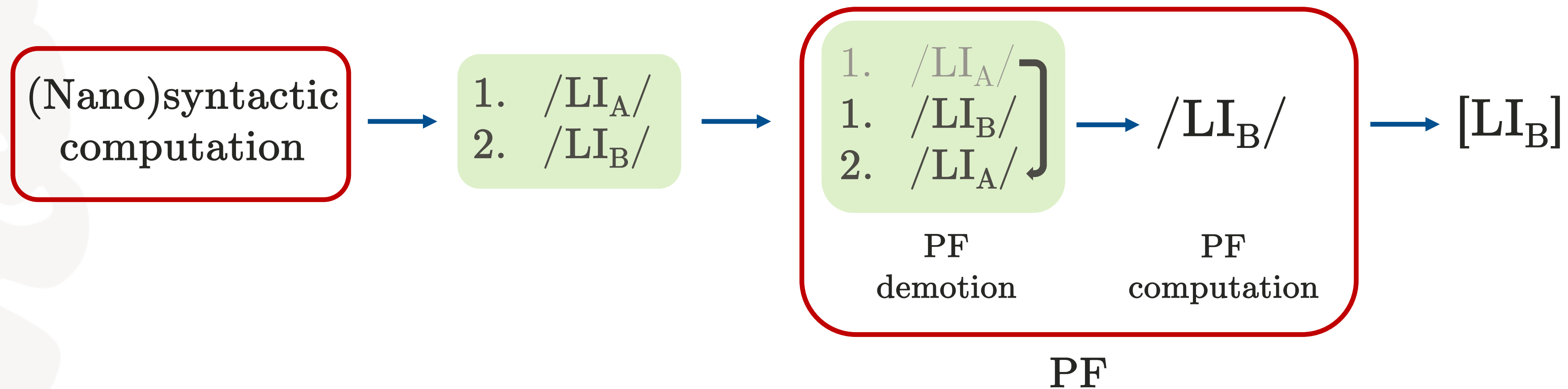
Phonologically conditioned allomorphy (PCA)

Cases in which the distribution of (at least) two Lexical Items (LIs), spelling-out the same set of syntactic features, depends on the phonological context.

(Paster 2006, Nevins 2011 a.o.)

PCA: our proposal

PCA can be modeled as a **phonological demotion operation** acting on the first Lexical Item of the ranked list of Lexical Items coming out of the syntactic computation (based on Starke 2021 “spring seminars”).



Case study: Pontinvrea, Carcare, Cairo Montenotte, Calizzano (Val Bormida)



Val Bormida definite article system: paradigm

	M	F
SG	<p>[u] [r/l] _V [er] _C [lab], [vel]</p>	<p>[ra] [r/l] _V</p>
PL	<p>[i]</p>	<p>[er] [re] _sC [i] _V</p>

Val Bormida definite article system: paradigm

	M	F
SG	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="border: 1px solid black; padding: 2px 5px;">/ru/</div> <div style="text-align: center;">[u]</div> </div> <div style="text-align: center; margin-top: 10px;">[r/l] _V</div> <hr style="border-top: 1px dashed black;"/> <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="border: 1px solid black; padding: 2px 5px;">/er/</div> <div style="text-align: center;">[er] _C [lab], [vel]</div> </div>	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="border: 1px solid black; padding: 2px 5px;">/er-a/</div> <div style="text-align: center;">[ra]</div> </div> <div style="text-align: center; margin-top: 10px;">[r/l] _V</div>
PL	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="border: 1px solid black; padding: 2px 5px;">/er-i/</div> <div style="text-align: center;">[i]</div> </div>	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="border: 1px solid black; padding: 2px 5px;">/er-e/</div> <div style="text-align: center;">[er]</div> </div> <div style="text-align: center; margin-top: 10px;">[re] _sC</div> <div style="text-align: center; margin-top: 10px;">[i] _V</div>

Two forms for M.SG definite articles

In front of Cs, we see two forms for the M.SG definite article: [er] in front of a word beginning with a velar or labial C, [u] elsewhere (see also Dipino 2021).

(1)

a.	<i>er</i>	' <i>pan</i> / ' <i>kan</i> / ' <i>brik</i>	[er] _C [labial], [velar]
	the.M.SG	bread/dog/peak	
c.	<i>u</i>	' <i>libr</i> / ' <i>spɛdʒ</i> / ' <i>ɲɔk</i>	[u] elsewhere
	the.M.SG	book/mirror/gnocco	

The alternation is based on **dissimilation (OCP violation)**: the melodic make up of [u] is too similar to that of a velar or labial C (see Backley 2011 a.o.).

The traditional account

This case of PCA can be modeled by assuming that the LIs for the M.SG definite article are specified for both their syntactic features and the phonological context in which they can appear:

- (2)
- a. [DEF, M.SG] ↔ /er/ | _ C [labial, velar]
 - b. [DEF, M.SG] ↔ /u/

(see Paster 2006, Nevins 2011 a.o.)

The traditional account: issues (i)

Such an approach **fails to encode the fact that the alternation is based on dissimilation:**

- Any kind of melodic makeup could be in principle stored as in (2a):

(2a) [DEF, M.SG] ↔ /er/ | _ C [labial, velar]

Stating the environment triggering the alternation does not make explicit the connection with the phonological ground behind it.

The traditional account: issues (ii)

More importantly, the traditional account requires **phonological features to be visible and interpretable during the selection of LIs**, at the interface between the syntactic module and the lexicon.

This implies that **the syntactic module can interpret melodic information specified on LIs**, against the modular idea that syntax and phonology work based on a different set of features.

Zwicky / Pullum (1986), Scheer (2016)

Definite article *fseqs*

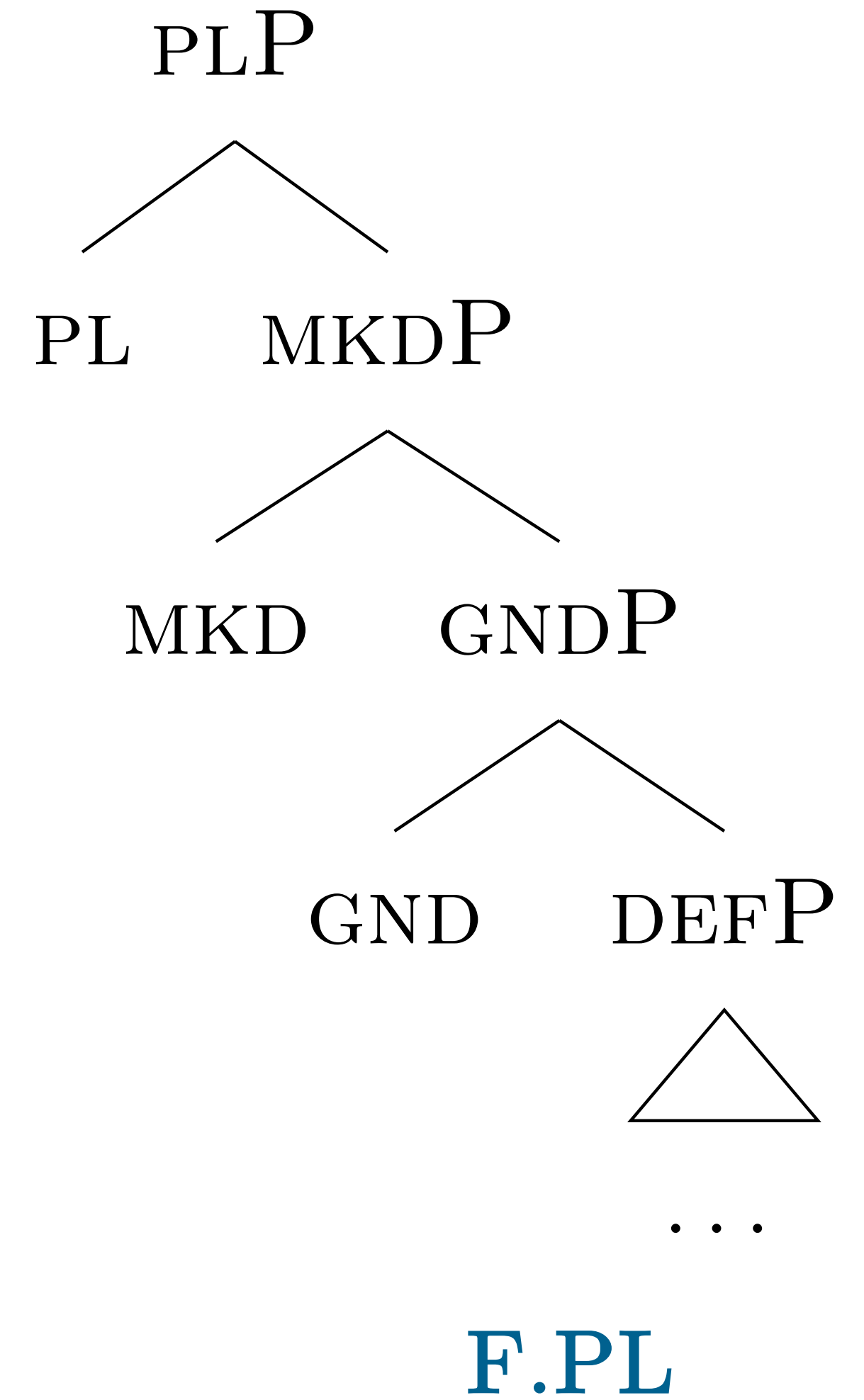
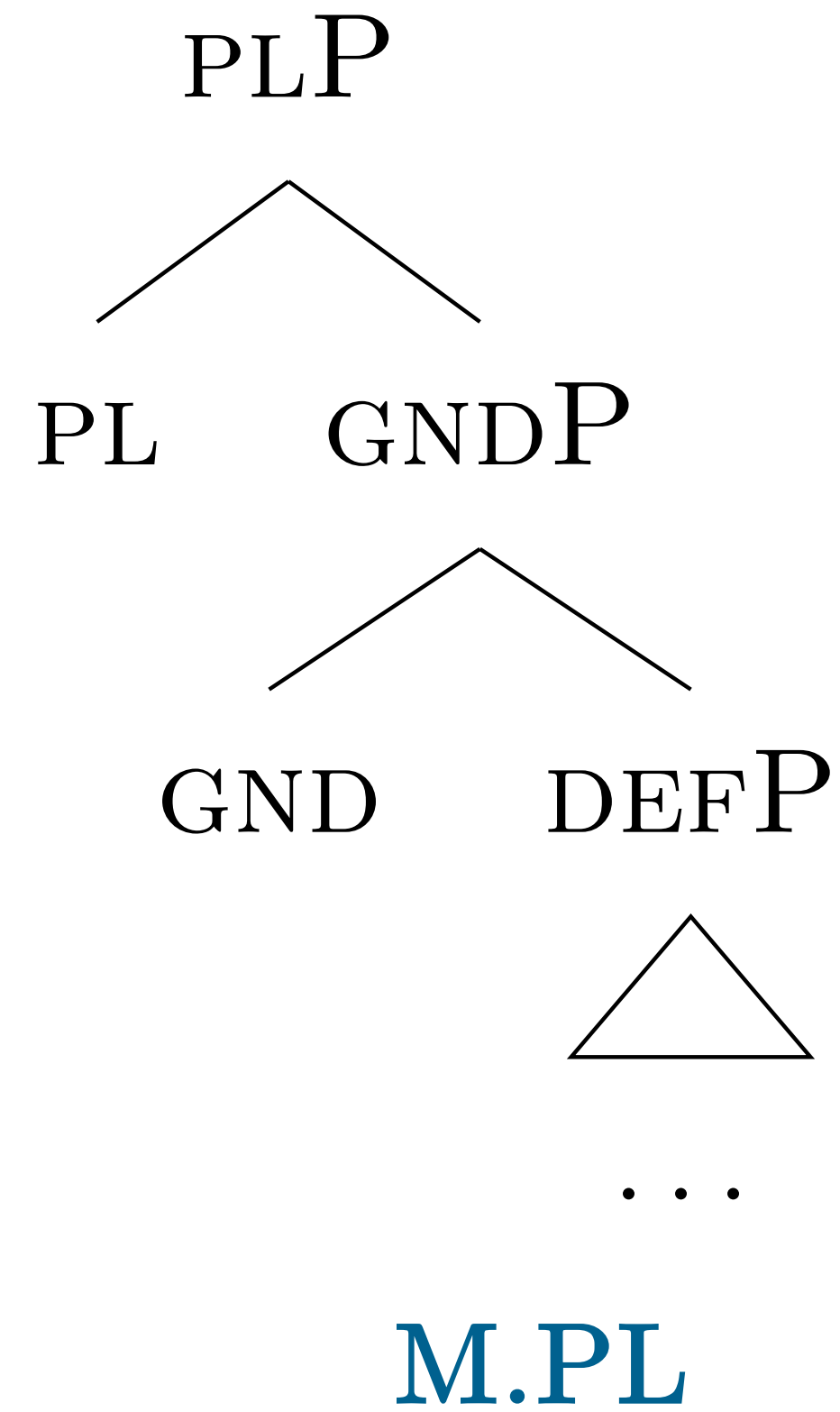
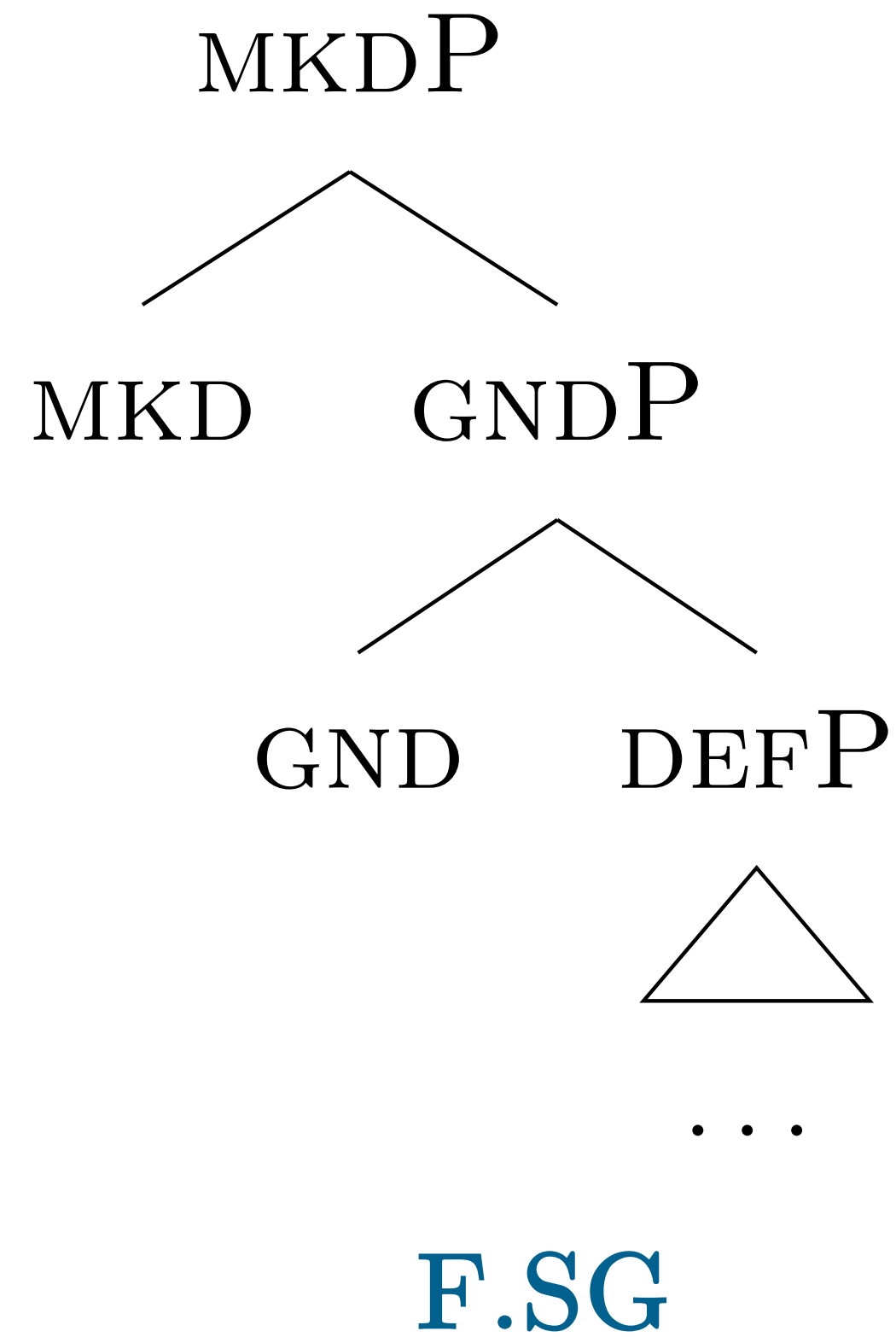
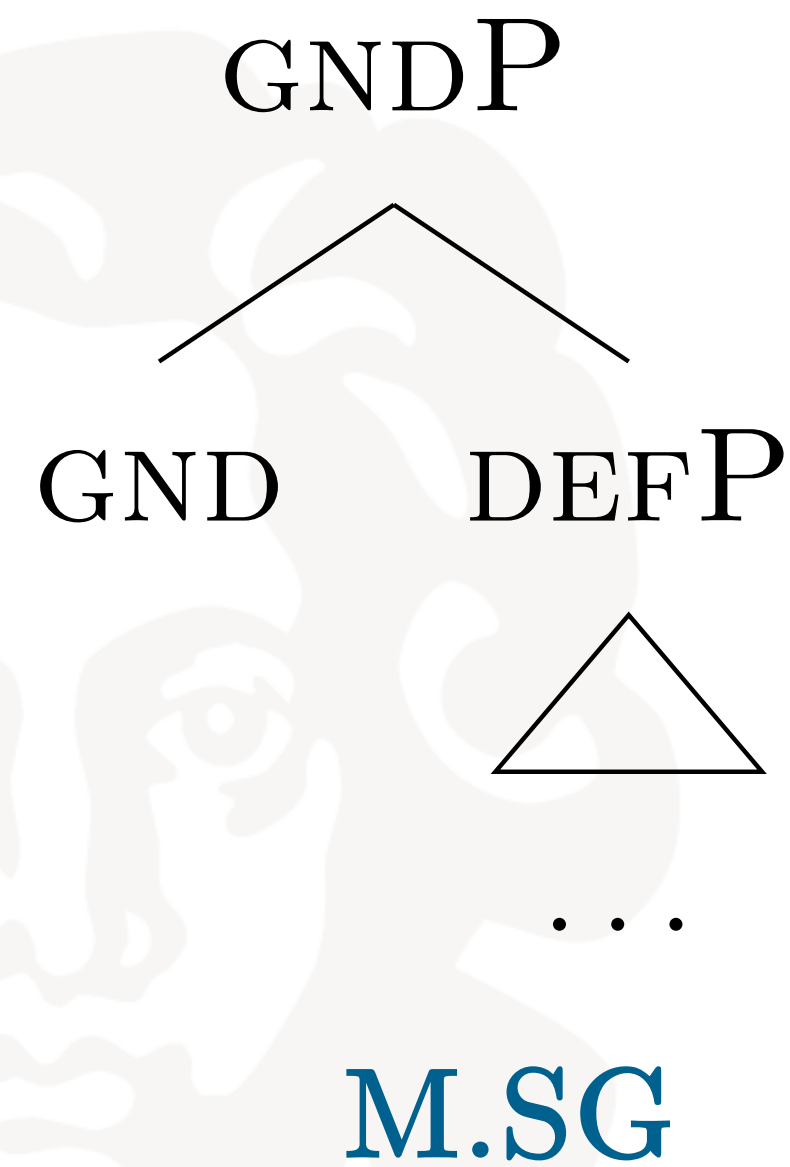
Definite articles are characterized by a common set of features contained within a phrase we label [defP].

The φ -features on top of [defP] are the following:

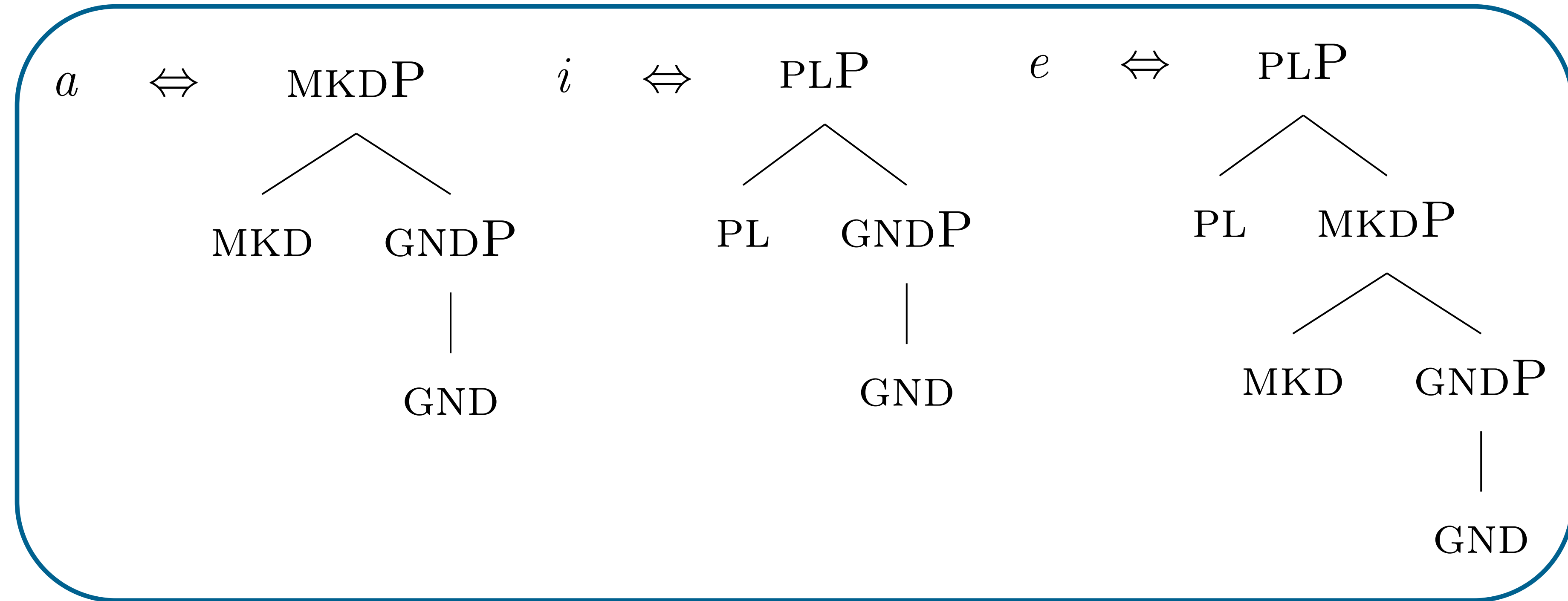
Masculine	{gnd}
Feminine	{mkd}
Plural	{pl}

The composition of these features gives the four different featural combinations observed (see also Janků & Starke 2019).

Definite article *fseqs*



Our partial lexicon



meizm-a
 ‘same-f.sg’

dʒank-i
 ‘white-m.pl’

bɛll-e
 ‘beautiful-f.pl’

The M.SG definite article

	M	F
SG	<div style="border: 1px solid black; border-radius: 15px; padding: 10px; display: inline-block;"> <p>[u] [r/l] _V [er] _C [lab], [vel]</p> </div>	<div style="border: 1px solid black; padding: 5px; display: inline-block;">/er-a/</div> <p>[ra] [r/l] _V</p>
PL	<div style="border: 1px solid black; padding: 5px; display: inline-block;">/er-i/</div> <p>[i]</p>	<div style="border: 1px solid black; padding: 5px; display: inline-block;">/er-e/</div> <p>[er] [re] _sC [i] _V</p>

LIs: M.SG φ -features

Masculine singular nouns and adjectives do not usually take a vocalic ending, contrary to Genovese and most other Ligurian varieties:

Val Bormida	Genovese	
<i>l om</i>	<i>l om-u</i>	<i>‘the man’</i>
<i>er vent</i>	<i>u vent-u</i>	<i>‘the wind’</i>
<i>u spegg</i>	<i>u speggi-u</i>	<i>‘the mirror’</i>
<i>che bal libr</i>	<i>che bell-u libbr-u</i>	<i>‘what a beautiful book’</i>
<i>atant cuntaint</i>	<i>tant-u cuntent-u</i>	<i>‘very happy’</i>
<i>quel post</i>	<i>quell-u post-u</i>	<i>‘that place’</i>
<i>es libr</i>	<i>st-u libbr-u</i>	<i>‘this book’</i>

LIs: M.SG φ -features

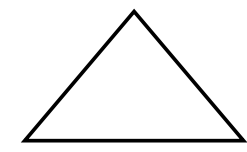
Masculine singular nouns and adjectives do not usually take a vocalic ending, contrary to Genovese and most other Ligurian varieties:

We take this as an indication of the absence of an autonomous /u/ LI for M.SG in the lexicon of these varieties.

The [u] appearing on the M.SG definite article is part of a single morph encoding both definiteness and M.SG φ -features, which we take to have the form /ru/.

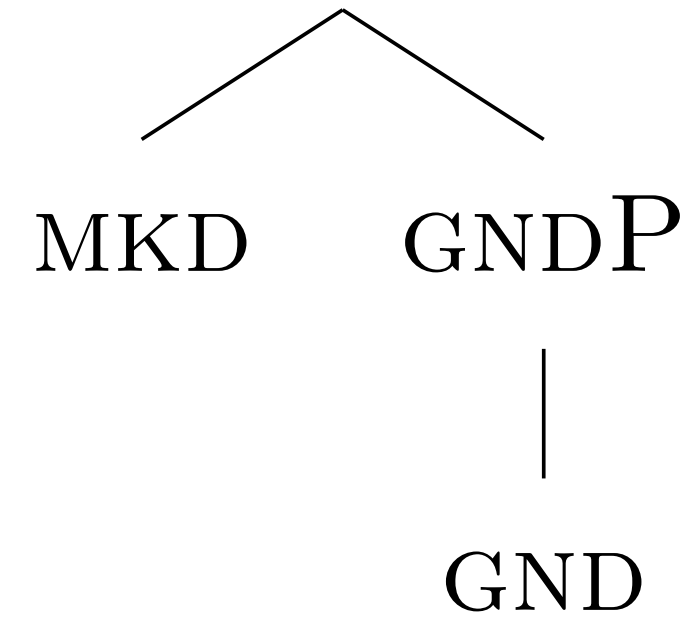
Our lexicon

er ⇔ DEFP

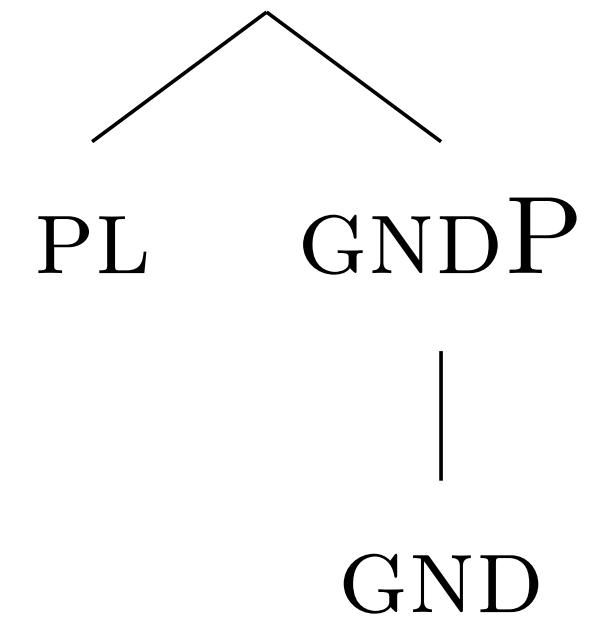


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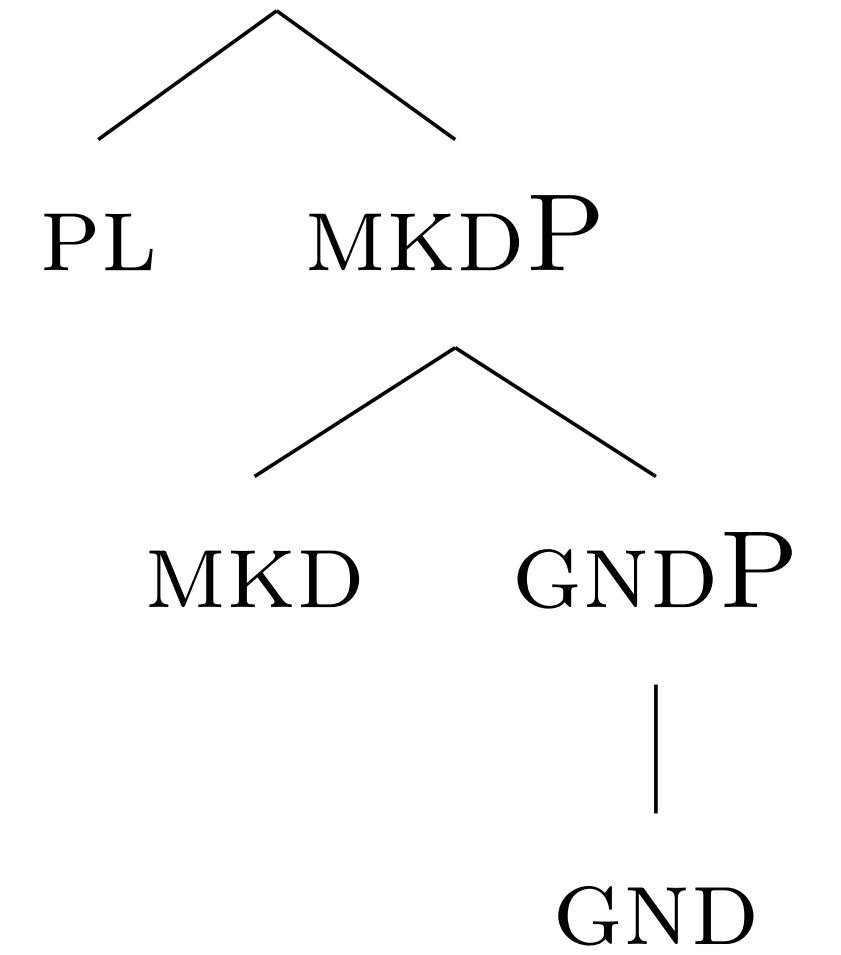
a ⇔ MKDP



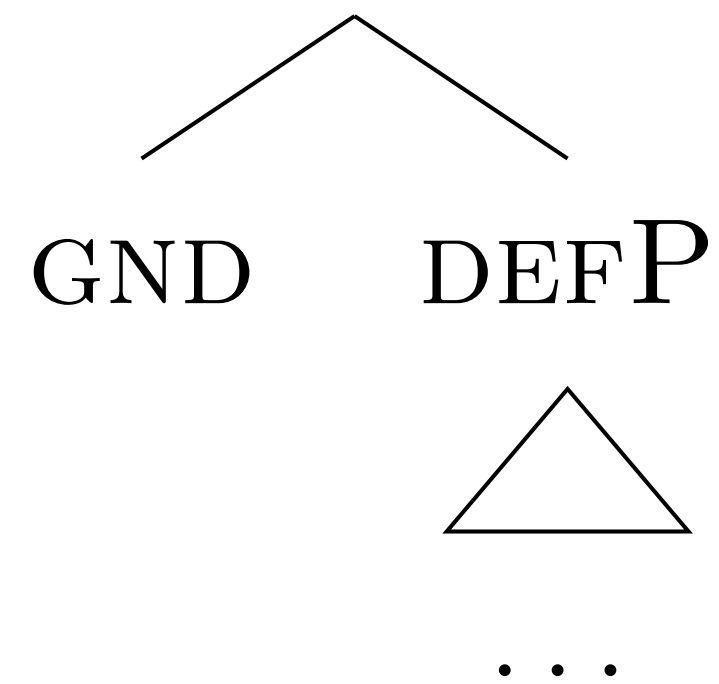
i ⇔ PLP



e ⇔ PLP



ru ⇔ GNDP



How to derive the M.SG surface realizations?

The surface realizations for M.SG [u]/[l]/[er] cannot however be derived from the single underlying form /ru/ (or other possible forms, e.g.,/eru/).

We propose instead that, while [u] and [l] derive from /ru/, [er] is the surface realization of the [defP] LI /er/.

In what follows, we show how the [defP] LI /er/ ends up being phonologically computed for the surface realization of M.SG, based on two mechanisms we propose: **syntactic inheritance** and **phonological demotion**.

Inheritance

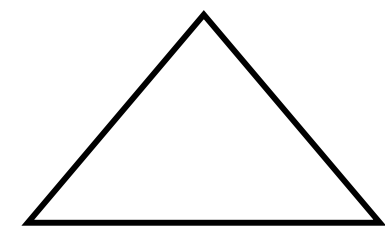
As part of the analysis, we adopt the following modification of the relation between syntax and the lexicon, which we label **INHERITANCE**:

INHERITANCE: when a new constituent YP is derived by merging a feature $\{f\}$ with a previous constituent XP , the lexicalization procedure inherits the list of LIs capable of lexicalizing XP and reranks them based on the new syntactic information.

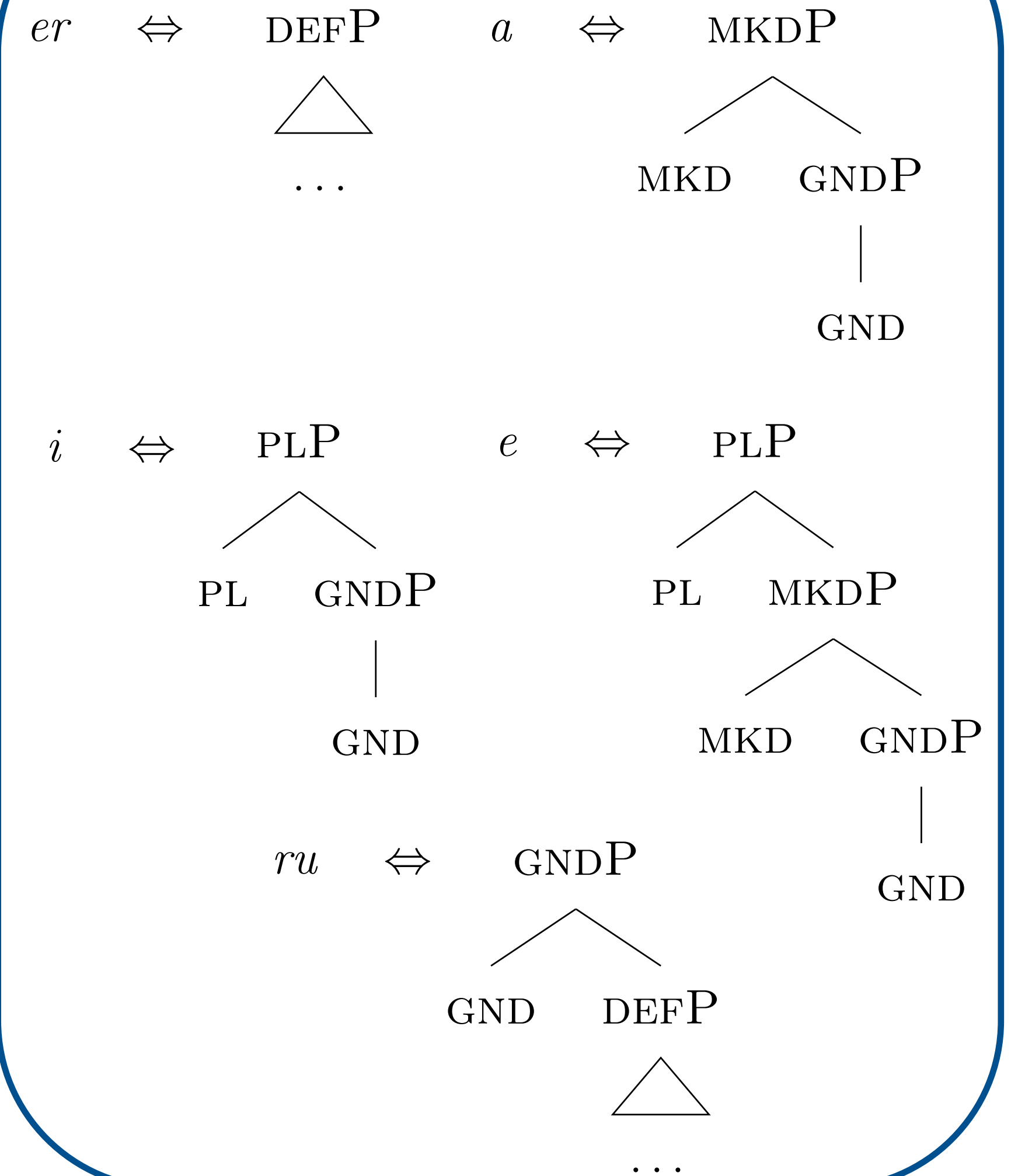
Syntactic derivation M.SG

We start from [defP]

DEFP

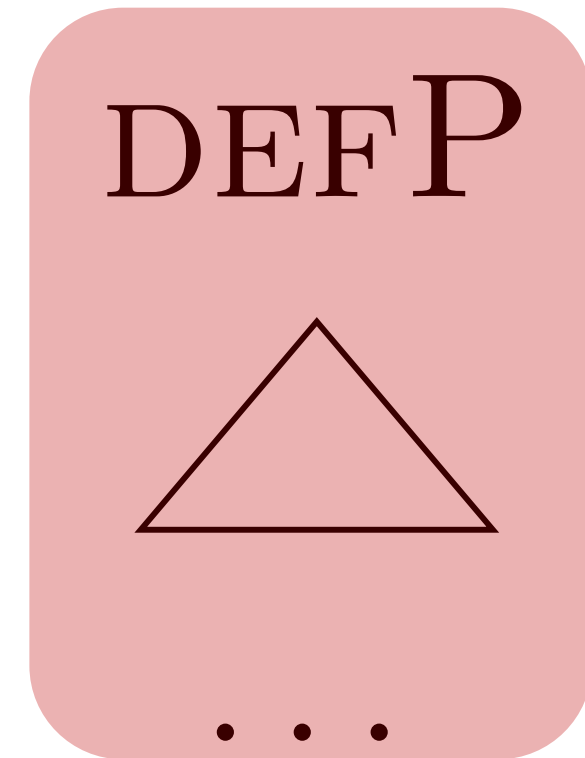


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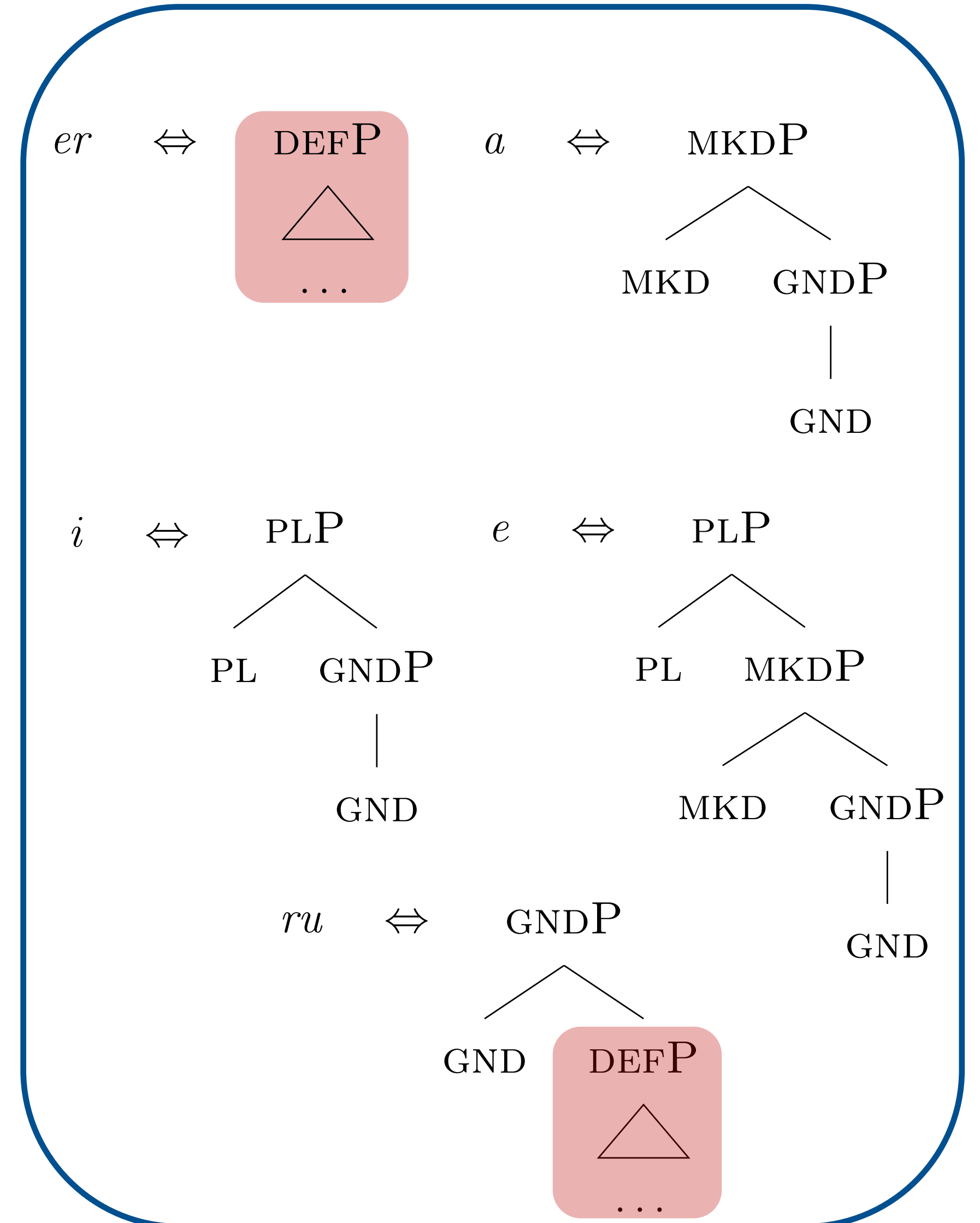


Syntactic derivation M.SG

Lexicalization with /er/

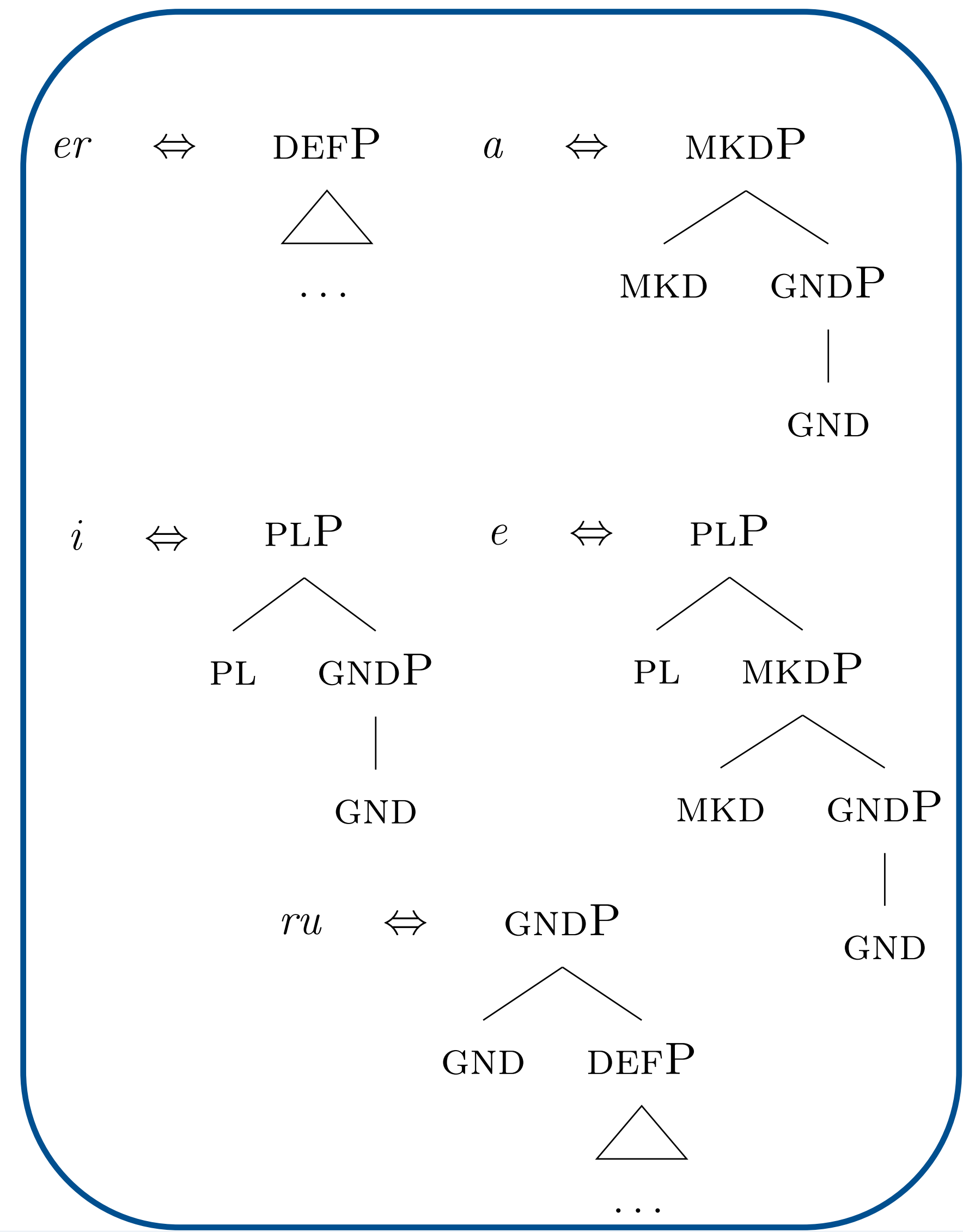
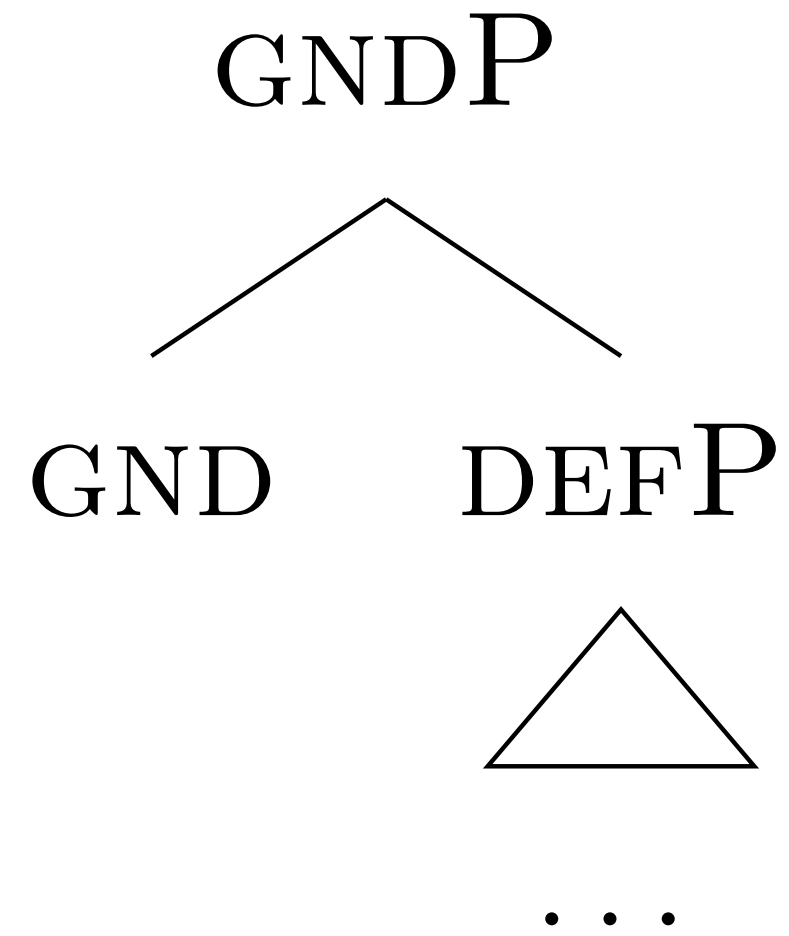


1. /er/
2. /ru/



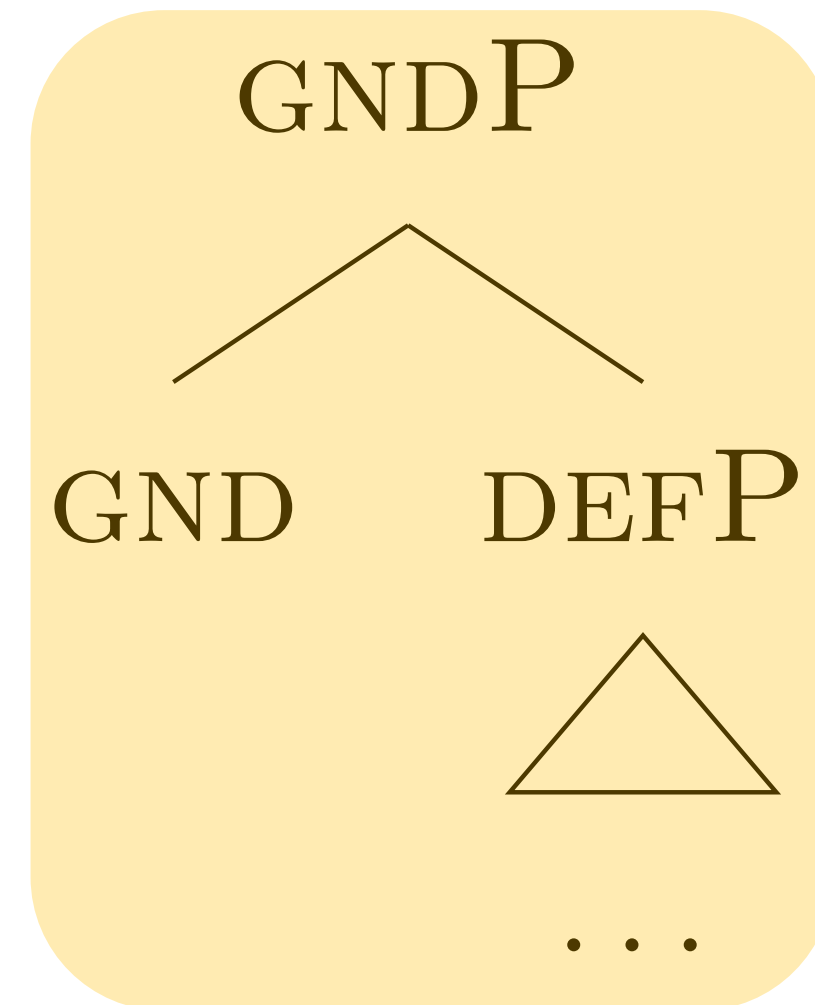
Syntactic derivation M.SG

Merge {gnd}

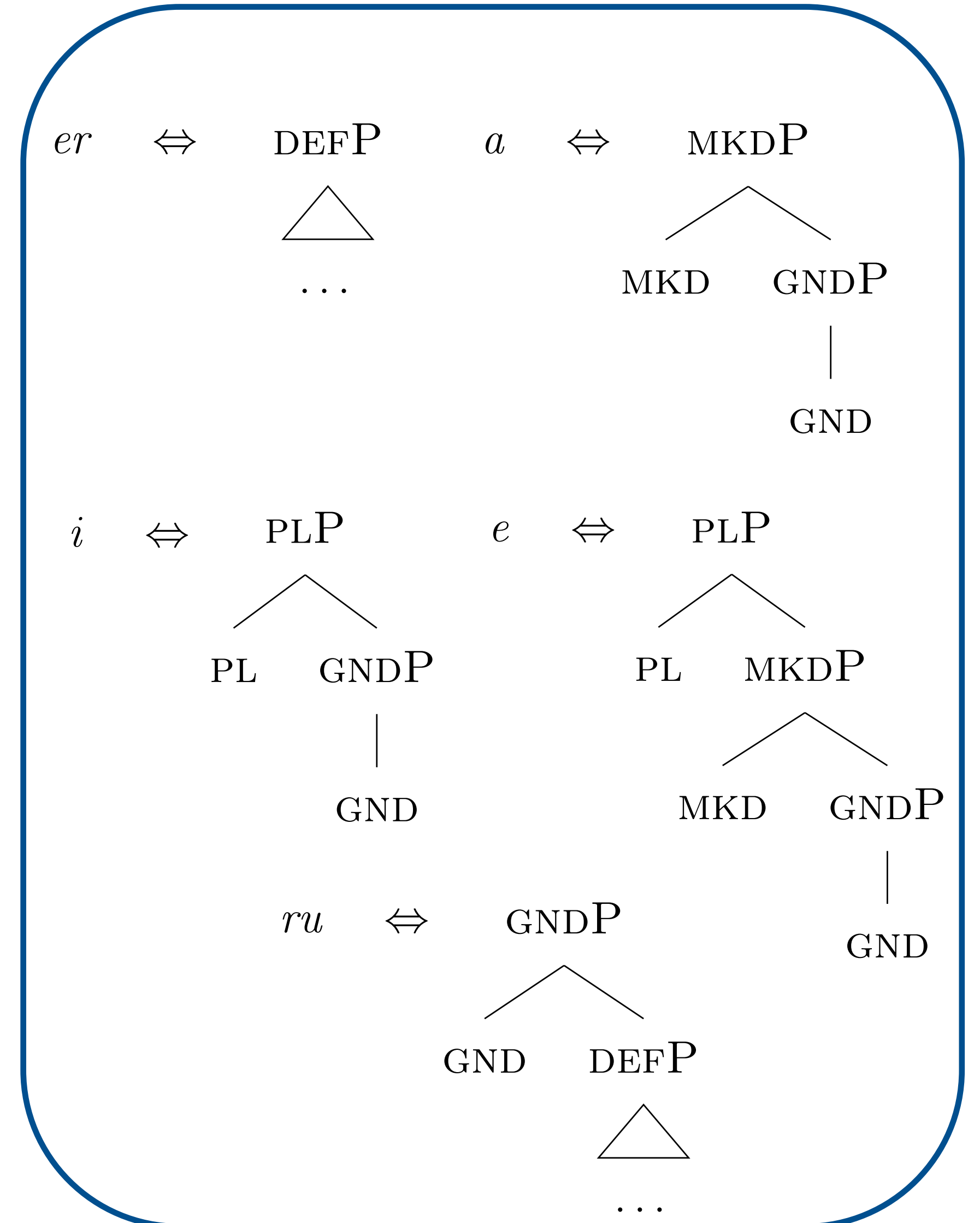


Syntactic derivation M.SG

No access to the lexicon, reranking of the inherited list [1. /er/, 2. /ru/]



1. /ru/
2. /er/



Syntactic derivation M.SG

When deriving M.SG definite, the syntactic derivation is over, and the ranked list [1. /ru/, 2. /er/] is shipped to Phonology.

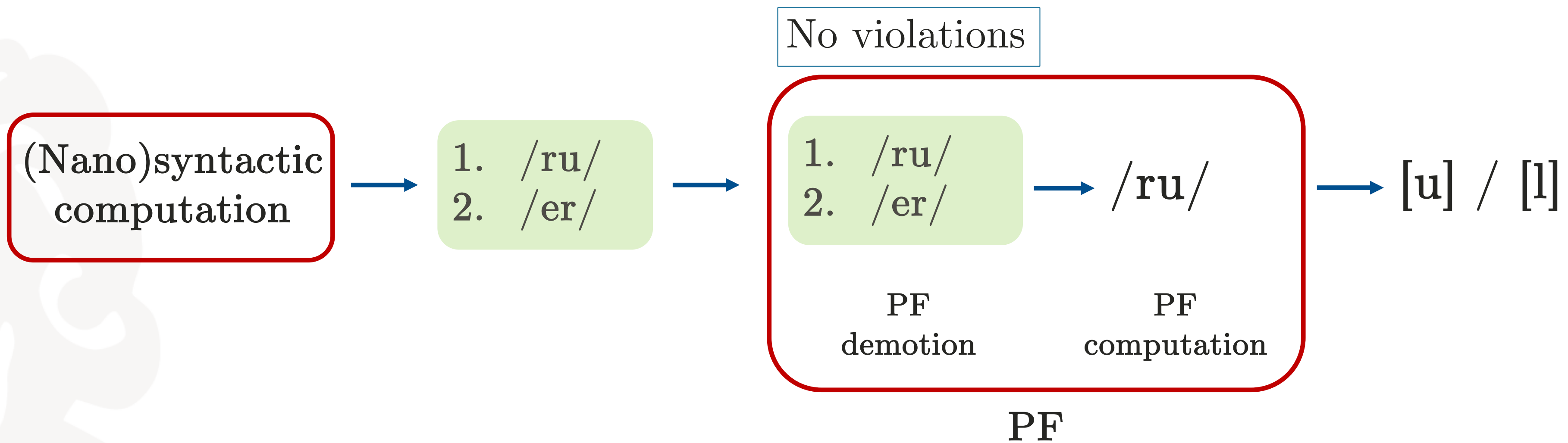
Phonological demotion

As for the phonological derivation, we propose that it takes place in two steps.

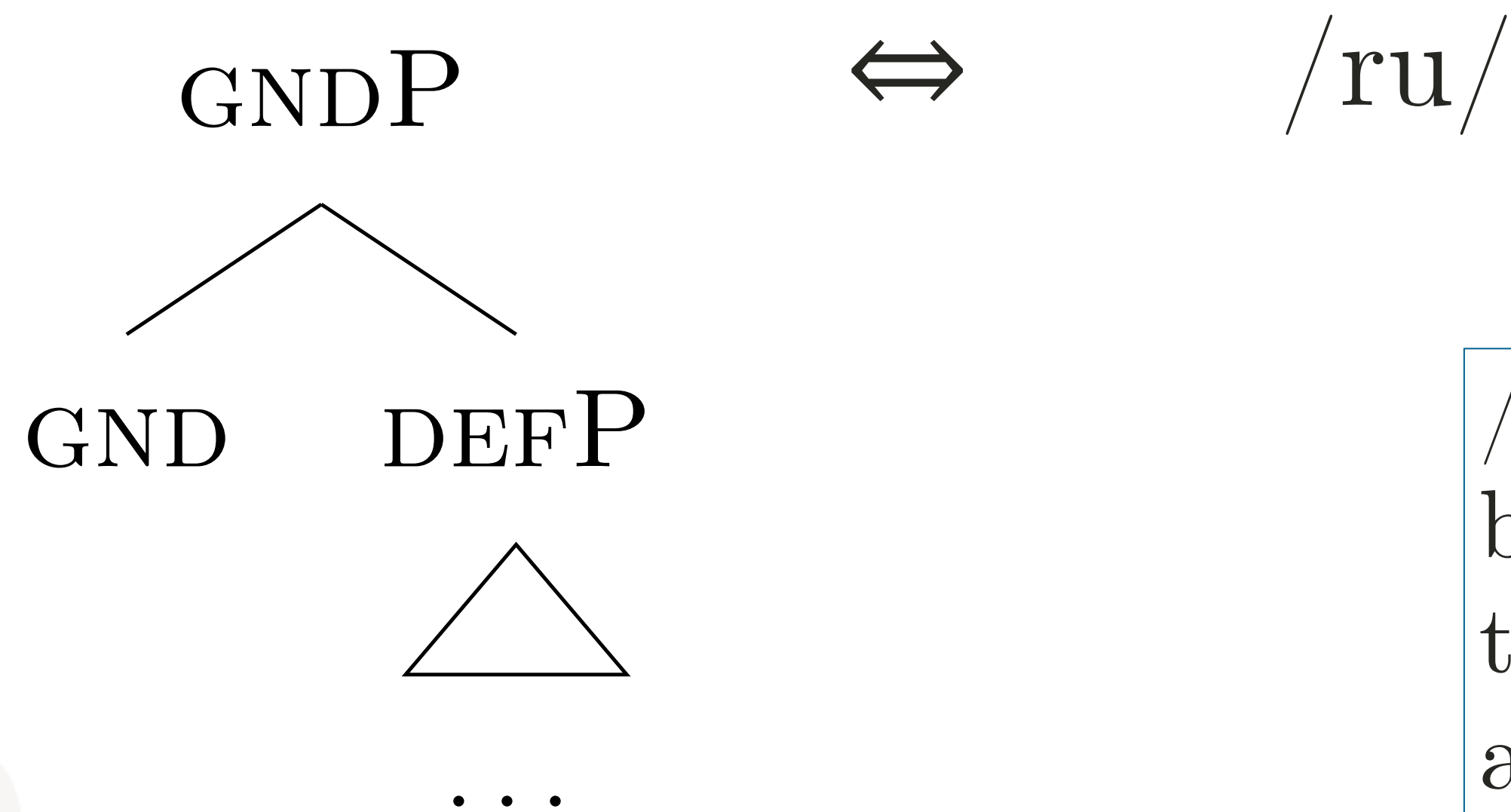
- **Phonological Demotion:** the ranked list of candidates is evaluated starting from the highest-ranking candidate. Based on language specific phonological violations, the candidate can be demoted to the end of the list. If this happens, the second candidate is evaluated following the same principles. The process stops and a candidate is selected when either a candidate raises no violations or when an already demoted candidate would be evaluated for a second time.
- “standard” Phonological computation.

Any context besides [lab] [vel] Cs

Phonological demotion (none in this case).



Any context besides [lab] [vel] Cs



/u/ never alternates with zero before a C (*u nos, u spus*) therefore it is lexically associated.



Any context besides [lab] [vel] Cs

[u 'nos] 'the nose'

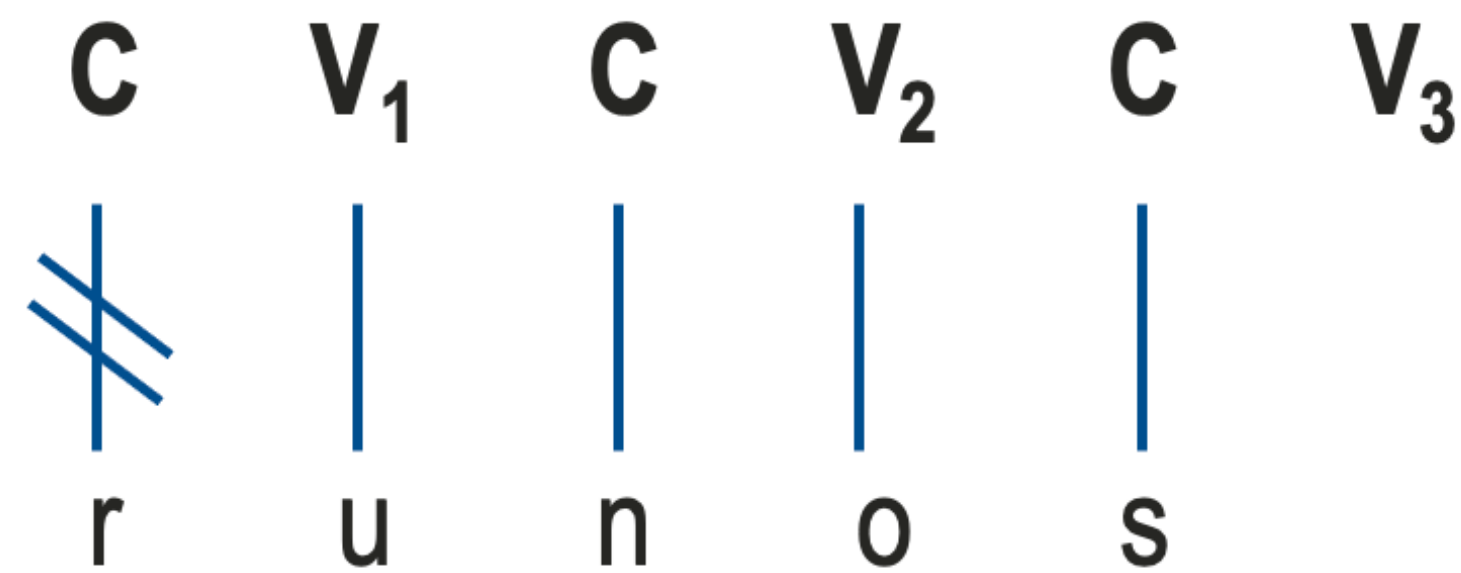
C	V₁	C	V₂	C	V₃
r	u	n	o	s	

[r 'amif] 'the friend'

C	V₁	C	V₂	C	V₃	C	V₄
r	u		a	m	i	f	

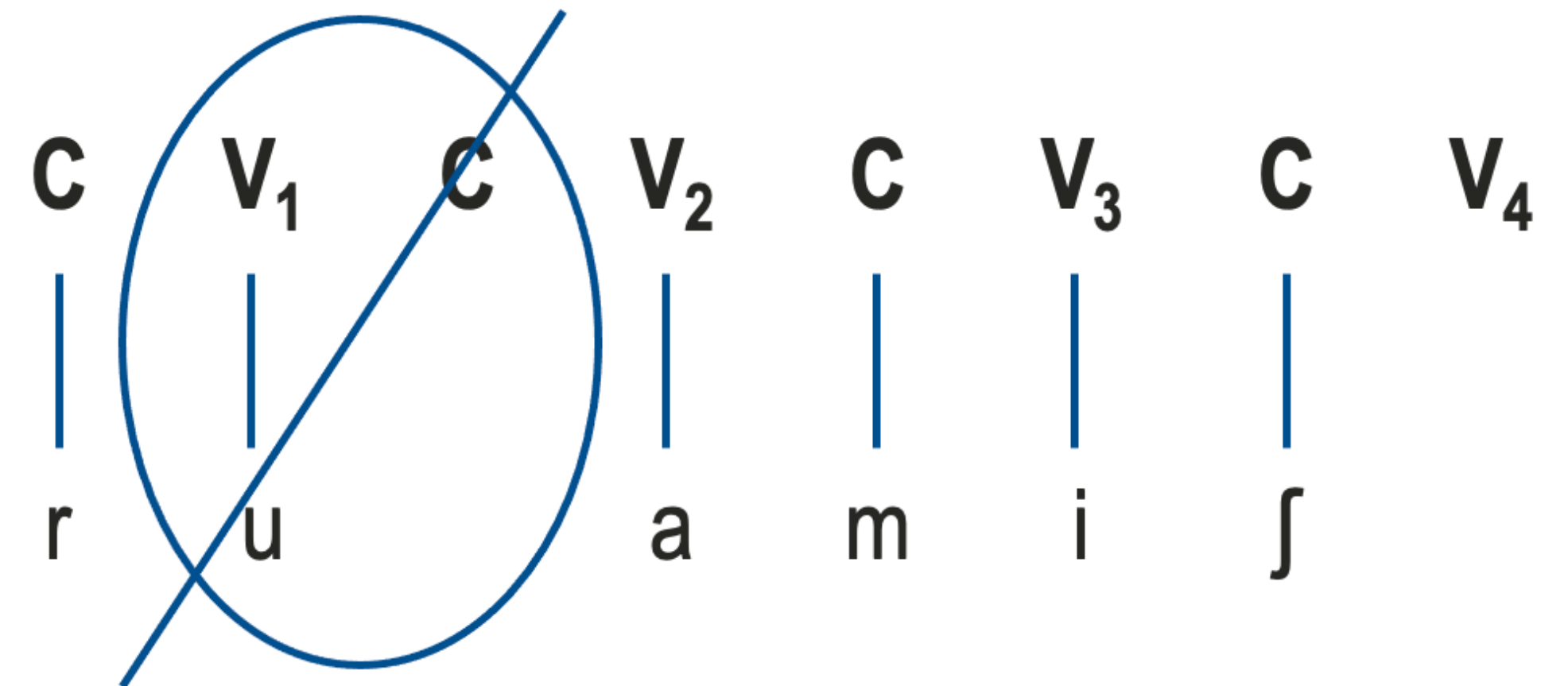
Any context besides [lab] [vel] Cs

[u 'nos] 'the nose'



r/l > ∅

[r 'amif] 'the friend'

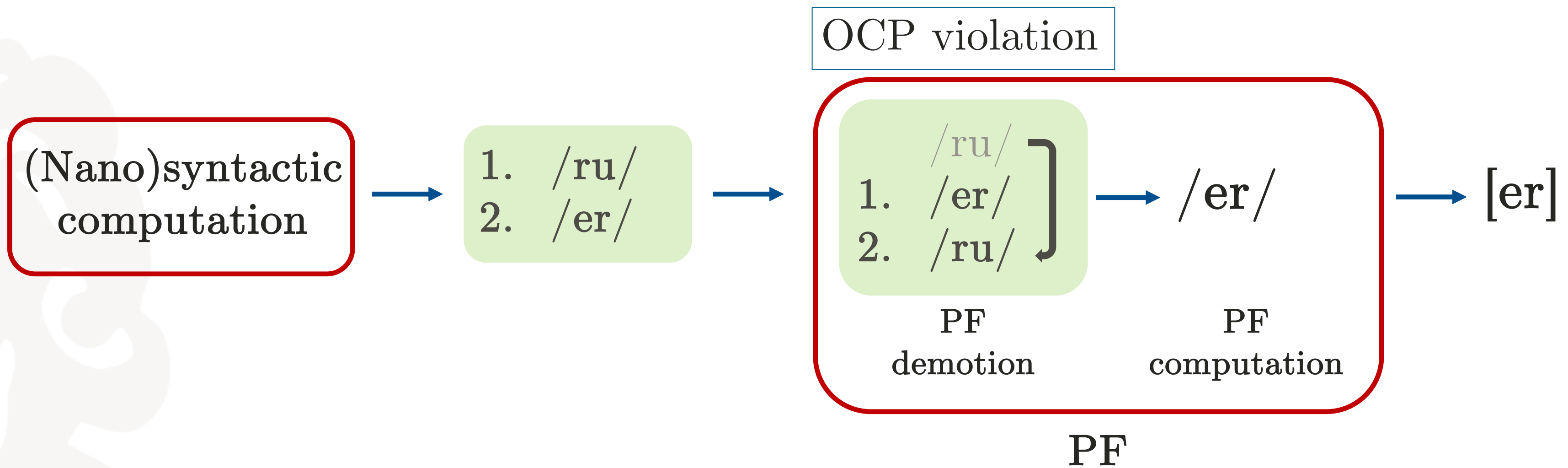


Hiatus resolution via deletion

These processes apply asymmetrically in the paradigm!

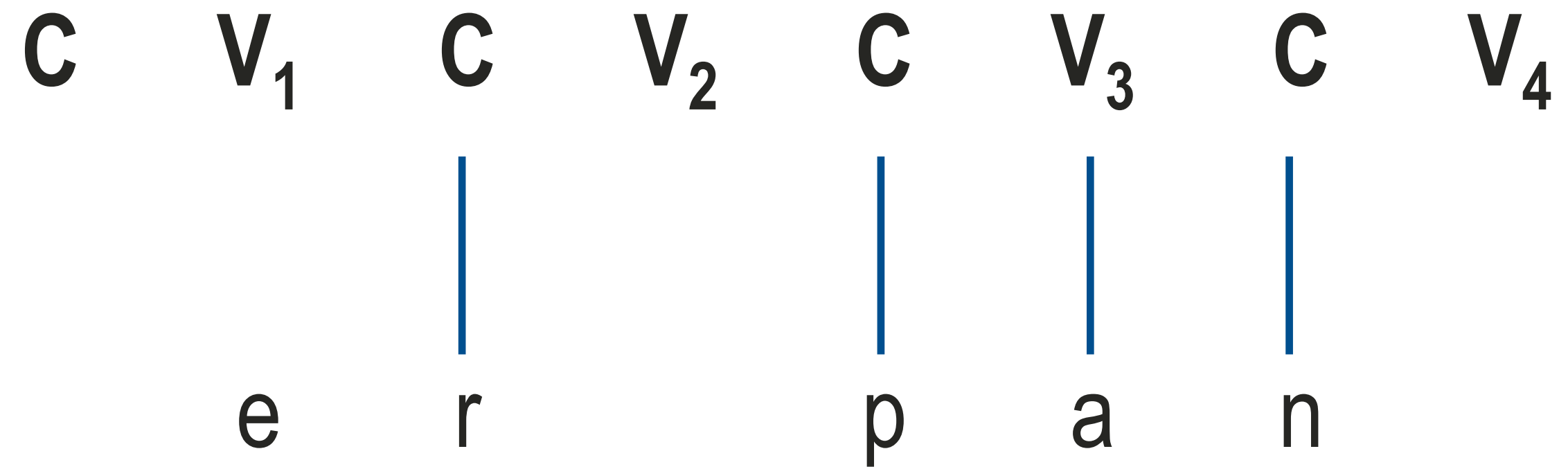
Before [lab] [vel] Cs

Phonological demotion (active in this case).



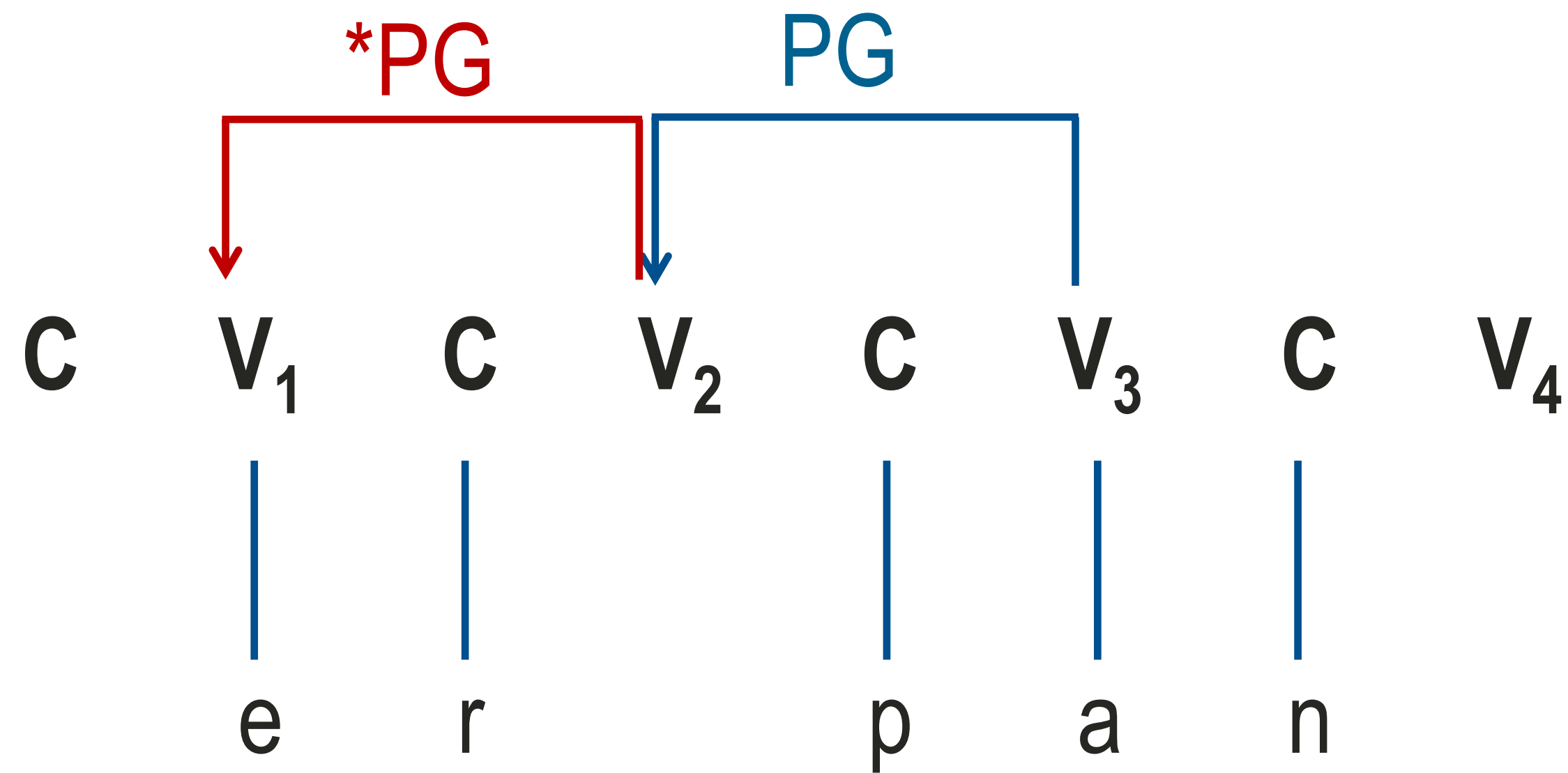
Before [lab] [vel] C

[er 'pan] 'the bread'



Before [lab] [vel] C

[er 'pan] 'the bread'



Concluding remarks and further issues

In this presentation we proposed to account for PCA as a demotion mechanism happening in PF on phonological grounds.

- The syntactic derivation (even in its interface with lexical selection) is blind to and cannot be based on phonological features.

Asymmetric vowel deletion with hiatus

The hiatus resolution via deletion of the final vowel active for all forms but M.PL is a general process whose distribution escapes clear formalizations (a similar asymmetry targeting only F.PL is observed for It.).

The asymmetry seems to be constrained by syntactic containment relationships, so that if the process applies to a form on the right of the scale, it will also apply to the forms on the left:

$$\begin{array}{l} \text{m.sg} < \text{f.sg} < \text{f.pl} \\ \text{m.sg} < \text{m.pl} \end{array}$$

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m.sg	<	f.sg	<	f.pl
m.sg	<	m.pl		

(Val Bormida)

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$$\begin{array}{l}
 \boxed{\text{m.sg} < \text{f.sg}} < \text{f.pl} \\
 \boxed{\text{m.sg} < \text{m.pl}}
 \end{array}
 \quad (\text{Italian})$$

Asymmetric r/l deletion

The r/l deletion process which we assume for both M forms is asymmetrically attested in many central and southern Italo-Romance varieties too and the asymmetry seems to be based on the same implicational scales:

$$\boxed{\text{m.sg}} < \text{f.sg} < \text{f.pl} \quad (\text{Val Bormida})$$

$$\boxed{\text{m.sg} < \text{m.pl}}$$

We don't have a working proposal for capturing these facts, but the observation will lead to further developments!

Thank you!



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