Morphosyntax

Pavel Caha

A puzzle

(1) a. t-a žen-a
the-fem.nom woman-fem.nom

A puzzle

(1) a. t-a žen-a
the-fem.nom woman-fem.nom

b. t-u žen-u
the-fem.acc woman-fem.acc

A puzzle

(1)

a. t-a žen-a
the-fem.nom woman-fem.nom

b. t-u žen-u
the-fem.acc woman-fem.acc

c. t-é žen-y
that-fem.gen woman-fem.gen

full paradigm, fem

	that, FEM.SG	woman, FEM.SG	good, FEM
NOM	žen-a	t-a	dobr-á
ACC	žen-u	t-u	dobr-ou
GEN	žen-y	t-é	dobr-é
LOC	žen-ě	t-é	dobr-é
DAT	žen-ě	t-é	dobr-é
INS	žen-ou	t-ou	dobr-ou

full paradigm, fem

	that, FEM.SG	woman, FEM.SG	good, FEM
NOM	žen-a	t-a	dobr-á
ACC	žen-u	t-u	dobr-ou
GEN	žen-y	t-é	dobr-é
LOC	žen-ě	t-é	dobr-é
DAT	žen-ě	t-é	dobr-é
INS	žen-ou	t-ou	dobr-ou

full paradigm, neut

	that, FEM.SG	woman, FEM.SG	good, FEM
NOM	lét-o	t-o	dobr-é
ACC	lét-o	t-o	dobr-é
GEN	lét-a	t-o-ho	dobr-é-ho
LOC	lét-ě	t-o-m	dobr-é-m
DAT	lét-ě	t-o-mu	dobr-é-mu
INS	lét-em	t-ím /i:m/	dobr-ým /i:m/

CLASS	PREFIX	DA	SC	OC	AC	a	b	c	d	e
1	u-m-	u	u-	m-	m-		u		m	
2	a-ba-	a-ba	ba-	ba-	ba-	a-		ba		
3	u-m-	u	u-	u-	m-		u		m	
4	i-mi-	i	i-	i-	mi-		i		mi	
5	i-li-	i-li	li-	li-	li-	i-		li		
6	a-ma-	a-	a-	a-	ma-		a		ma	
7	i-si-	i-si	si-	si-	si-	i-		si		
8	i-zi-	i-zi	zi-	zi-	zi-	i-		zi		
9	i-N-	i	i-	i-	i-N		i			N
10	i-zi-N	i-zi	zi-	zi-	zi-n	i-		zi		N

Russian

Table: Declension II and a feminine DEM (Timberlake 2004)

	woman DECL II	this FEM.SG	notebook III, FEM.SG
NOM	žen-a	et-a	tetráď-Ø
ACC	žen-u	et-u	tetráď-Ø
GEN	žen-y	et-o-j	tetráď-i
LOC	žen-e	et-o-j	tetráď-i
DAT	žen-e	et-o-j	tetráď-i
INS	žen-o-j	et-o-j(u)	tetráď-ju

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	woman DECL II	this FEM.SG	beautiful ADJ	notebook III, FEM.SG
NOM	žen-a	et-a	krasn-a-ja	tetráď-Ø
ACC	žen-u	et-u	krasn-u-ju	tetráď-Ø
GEN	žen-y	et-o-j	krasn-o-j	tetráď-i
LOC	žen-e	et-o-j	krasn-o-j	tetráď-i
DAT	žen-e	et-o-j	krasn-o-j	tetráď-i
INS	žen-o-j	et-o-j(u)	krasn-o-j	tetráď-ju

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NOM	žen-a	et-a	krasn-a-ja	tetráď-Ø
ACC	žen-u	et-u	krasn-u-ju ?	tetráď-Ø
GEN	žen-y	et-o-j	krasn-o-j	tetráď-i
LOC	žen-e	et-o-j	krasn-o-j	tetráď-i
DAT	žen-e	et-o-j	krasn-o-j	tetráď-i
INS	žen-o-j	et-o-j(u)	krasn-o-j	tetráď-ju

Russian

Table: Declension II and a feminine DEM (Timberlake 2004)

	woman DECL II	this FEM.SG	beautiful ADJ	notebook III, FEM.SG	this NEUT.SG
NOM	žen-a	et-a	krasn-a-ja	tetráď-Ø	et-o
ACC	žen-u	et-u	krasn-u-ju ?	tetráď-Ø	et-o
GEN	žen-y	et-o-j	krasn-o-j	tetráď-i	et-o-go
LOC	žen-e	et-o-j	krasn-o-j	tetráď-i	et-o-m
DAT	žen-e	et-o-j	krasn-o-j	tetráď-i	et-o-mu
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GEN	žen-y	**et-o**-j	krasn-o-j	tetráď-i	**et-o**-go
LOC	žen-e	**et-o**-j	krasn-o-j	tetráď-i	**et-o**-m
DAT	žen-e	**et-o**-j	krasn-o-j	tetráď-i	**et-o**-mu
INS	žen-o-j	**et-o**-j(u)	krasn-o-j	tetráď-ju	et-im

The problem of declension classes

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(2) Two noun stem (roots)

a. metel’- (snowstorm)

b. nedel’- (week)

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a. metel'- (snowstorm)
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- Declension class membership is arbitrary

The problem of declension classes

Table: The full paradigms (Timberlake 2004)

	lip II (FEM)	notebook, III (FEM)
NOM	gub-á	tetráď-Ø
ACC	gub-ú	tetráď-Ø
GEN	gub-ý	tetráď-i
LOC	gub-é	tetráď-i
DAT	gub-é	tetráď-i
INS	gub-ój	tetráď-ju

The problem of declension classes

Table: The four declensions (Timberlake 2004)

	factory I (MASC)	place IV (NEUT)	lip II (FEM)	notebook, III (FEM)
NOM	zavód-Ø	mést-o	gub-á	tetráď-Ø
ACC	zavód-Ø	mést-o	gub-ú	tetráď-Ø
GEN	zavód-a	mést-a	gub-ý	tetráď-i
LOC	zavód-e	mést-e	gub-é	tetráď-i
DAT	zavód-u	mést-u	gub-é	tetráď-i
INS	zavód-om	mést-om	gub-ój	tetráď-ju

Introduction

- how to force that week-INS is nedel'-ju
  and not *nedel'-ej

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(5) a. nedel' = [N, II]

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(5) a. nedel' = [N, II]
b. *-ju* $\Longleftrightarrow$ INS / _ [II]

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(5) a. nedel' = [N, II]
b. *-ju* $\Leftrightarrow$ INS / _ [II]

(6) Müller (2003)

a. I: $[+\alpha, -\beta]$
b. II: $[-\alpha, +\beta]$
c. III: $[-\alpha, -\beta]$
d. IV: $[+\alpha, +\beta]$

Introduction

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(7) *-ju* $\Leftrightarrow$ INS / _ $[-\alpha, +\beta]$

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(7) *-ju* $\Leftrightarrow$ INS / _ $[-\alpha, +\beta]$

- "Inflection class features are arbitrary and irreducible by definition; this is reflected in the labels. Still, it is worth emphasizing that the features $[+/-\alpha]$, $[+/-\beta]$ are no more arbitrary than standardly adopted features like [class I], [class II]."

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- Full decomposition (Stockall & Marantz 2006):

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⇒ Words are more than pure sums of their parts and should not be decomposed

- Arbitrary diacritics are only needed to “restore information about the co-occurrence of stems and exponents” (which has been lost after decomposition).

Declension Features vs. UG

Chomsky (2004):

FL appears to be a species property, close to uniform across a broad range. It has a genetically-determined initial state S_0, which determines the possible states it can assume. [...] S_0 determines the set {F} of properties ("features") available for languages.

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Haspelmath (2007):
"descriptive linguists still have no choice but to adopt the Boasian approach of positing special language-particular categories for each language. Theorists often resist it, but the crosslinguistic evidence is not converging on a smallish set of possibly innate categories" (p. 119).

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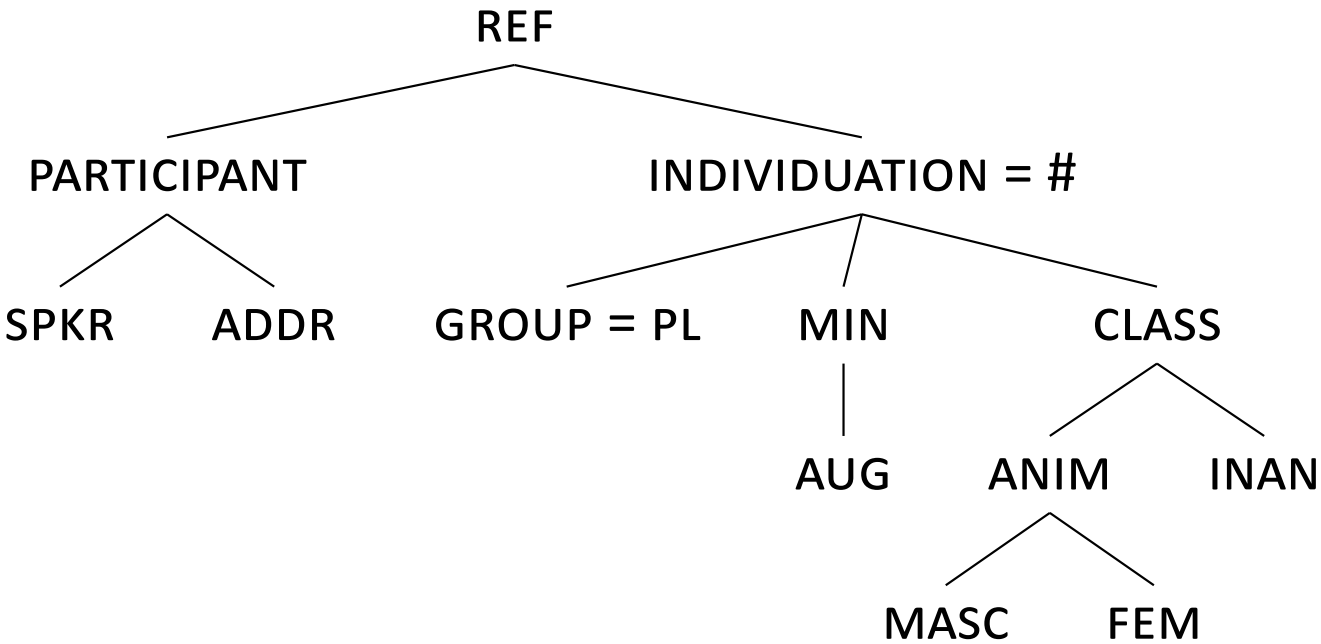
- What we need:
  (i) phrasal spellout
  (ii) a hierarchy of features
- As a side-effect, the analysis also avoids context specifications

Harley & Ritter (2002)



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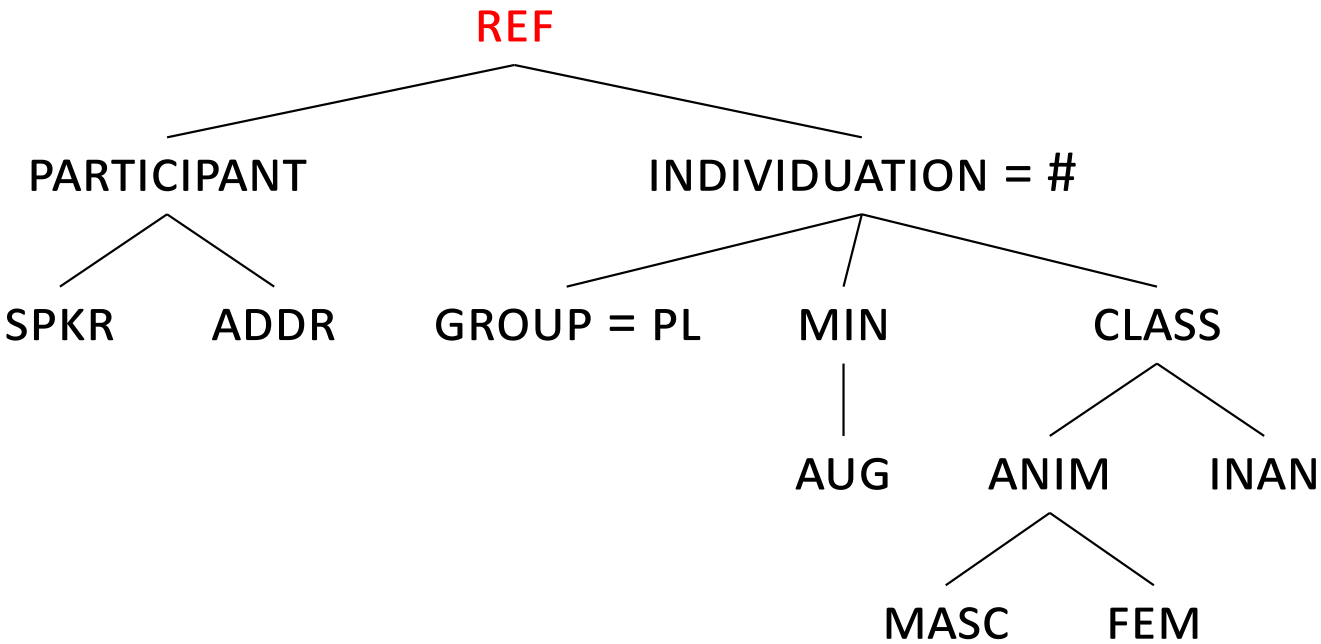

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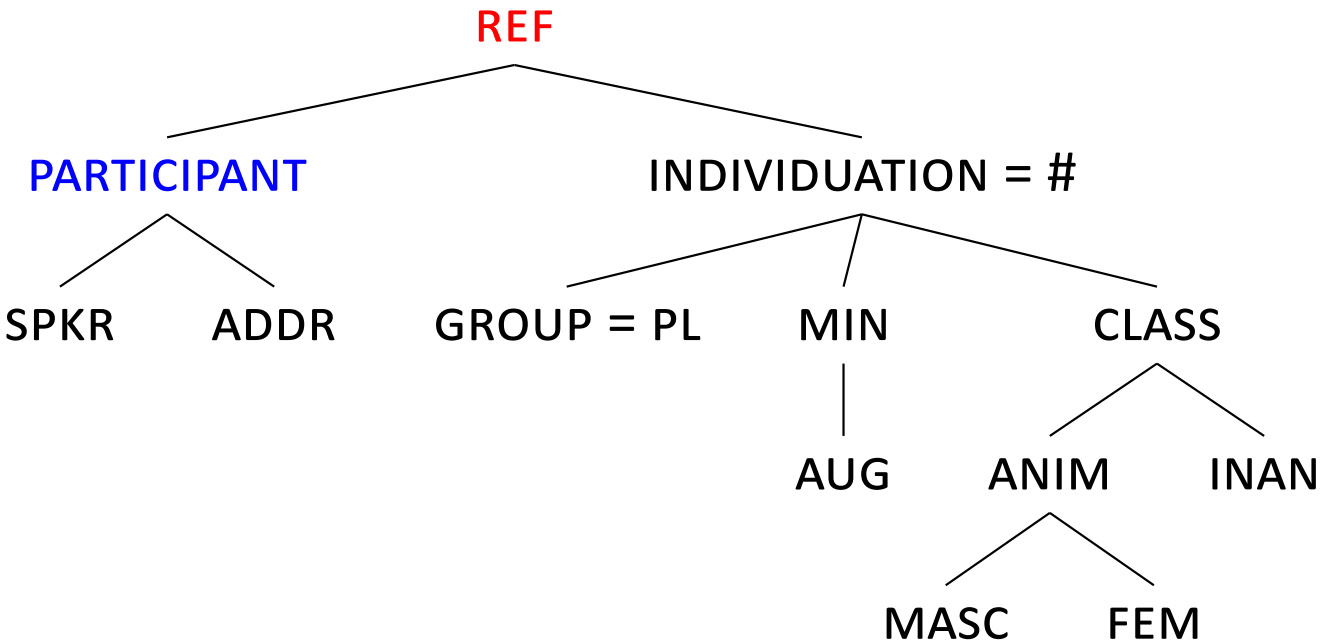

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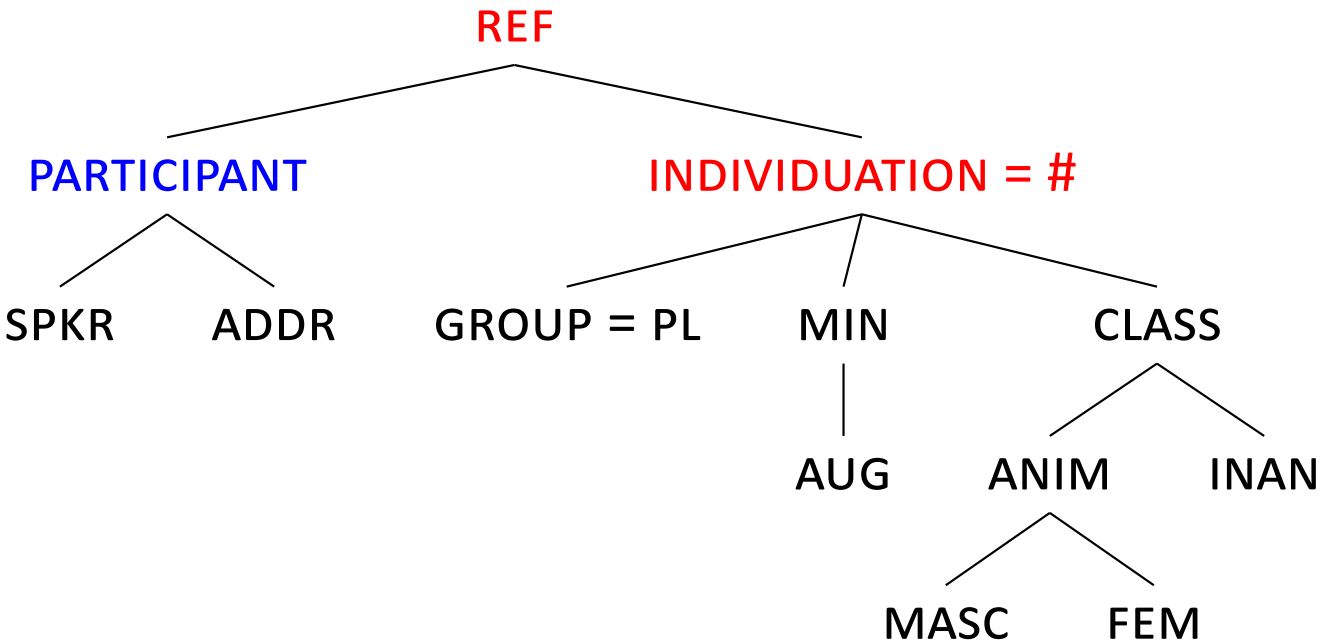

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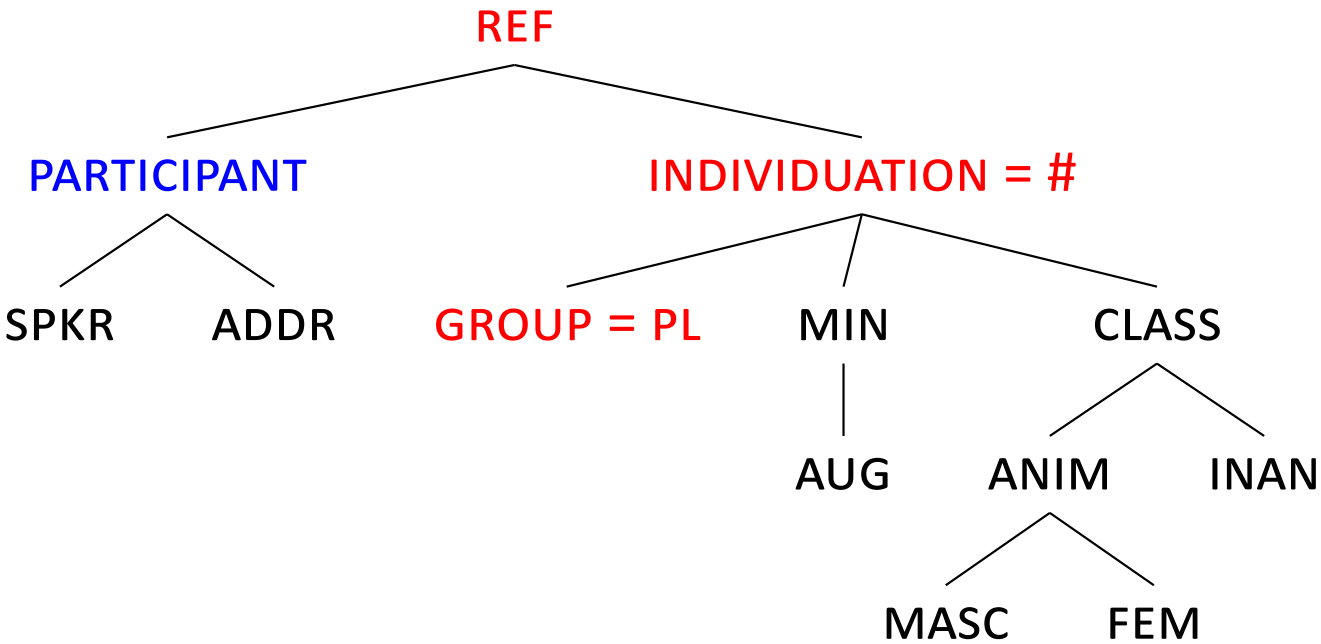

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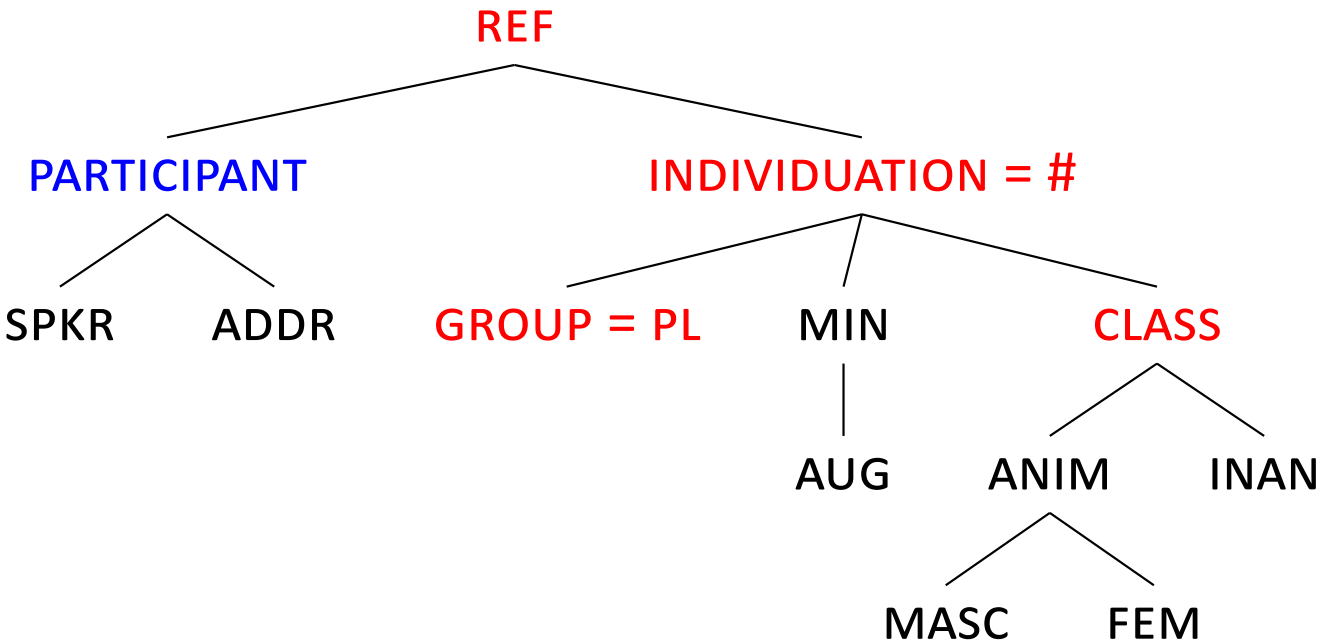

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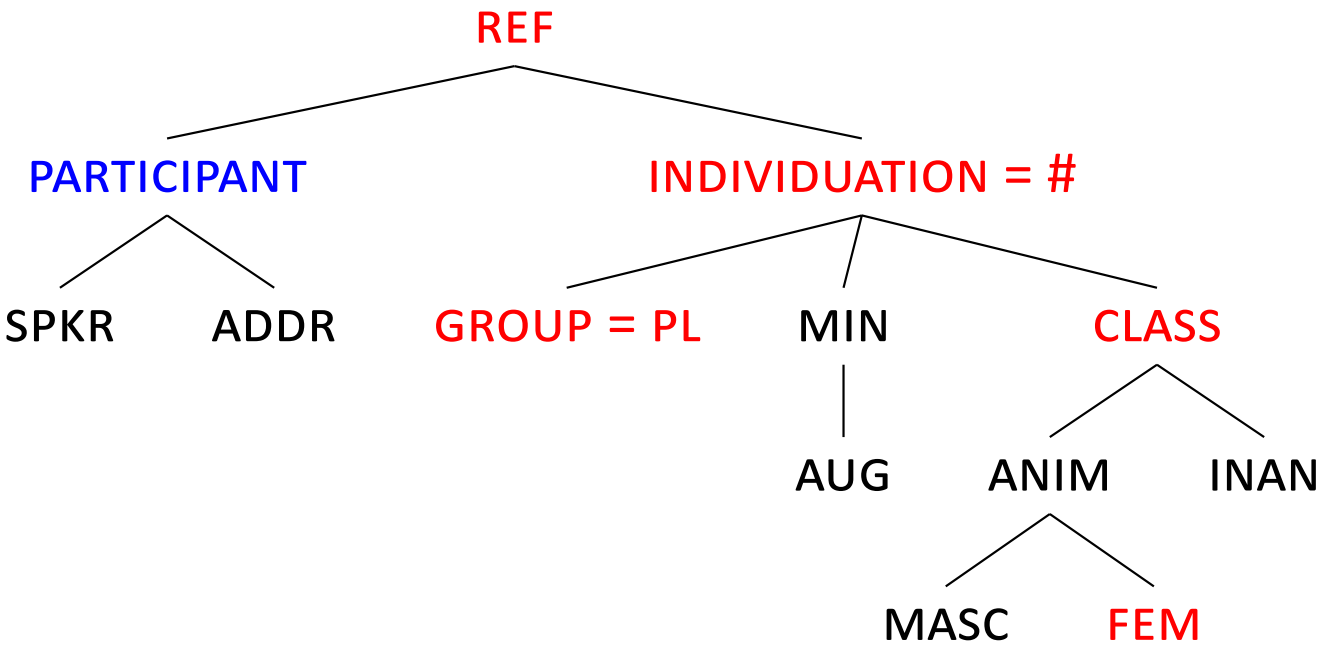

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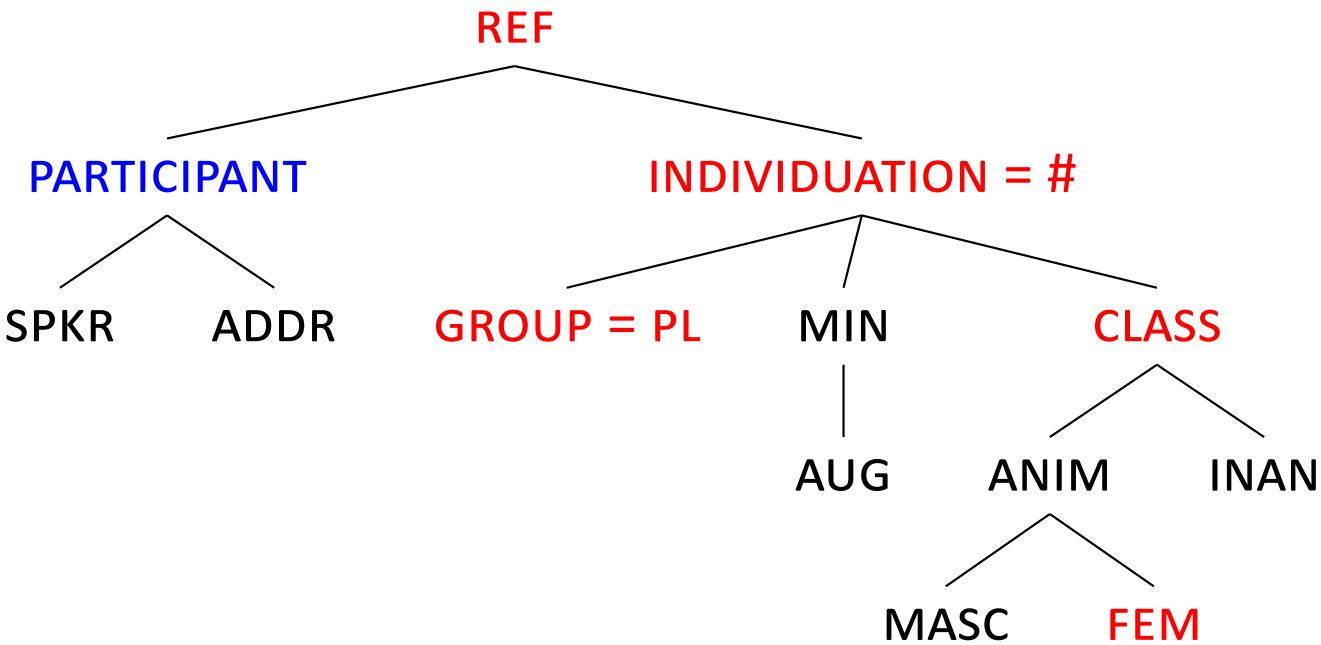
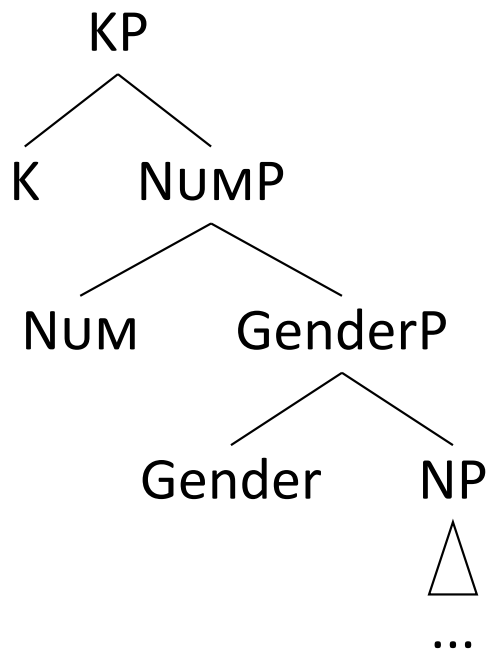
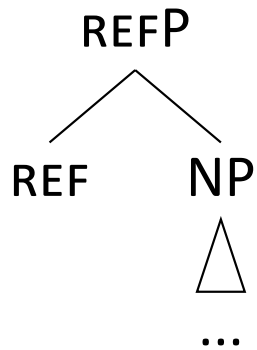


I also need case features

The general architecture of the NP

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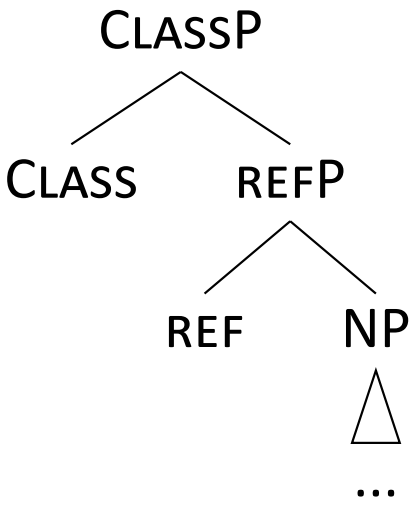
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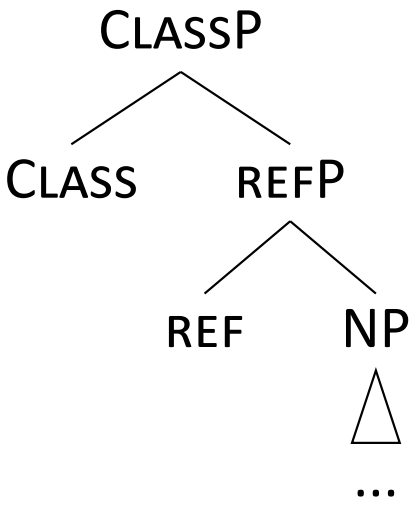
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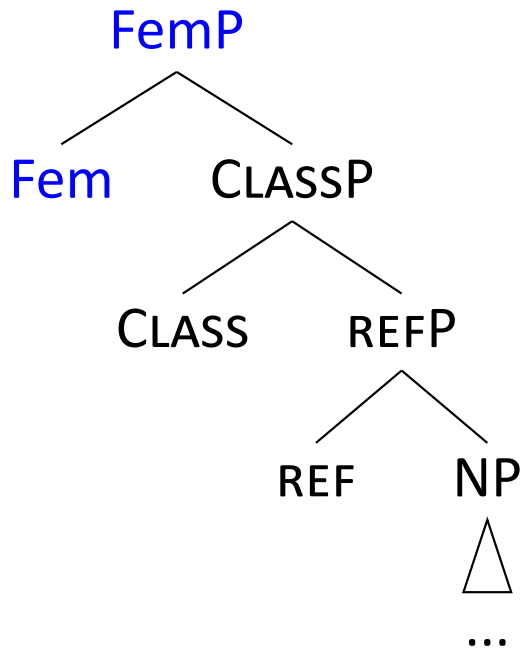
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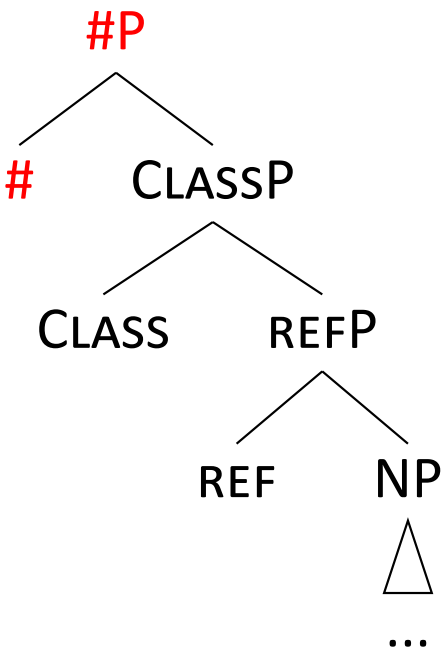
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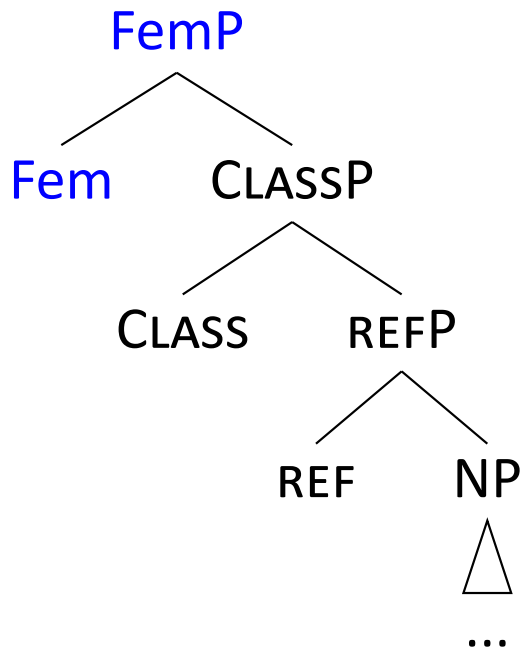
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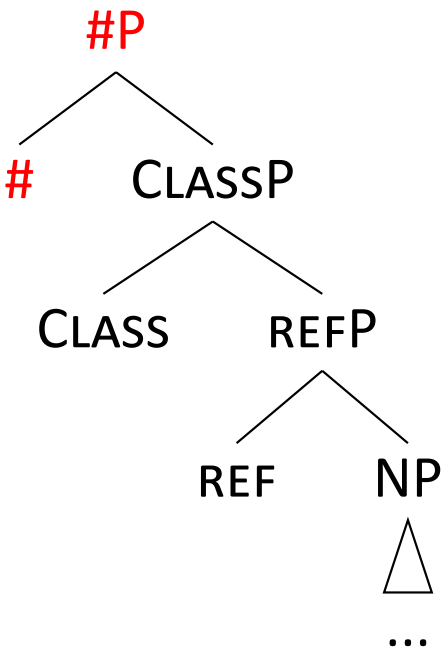
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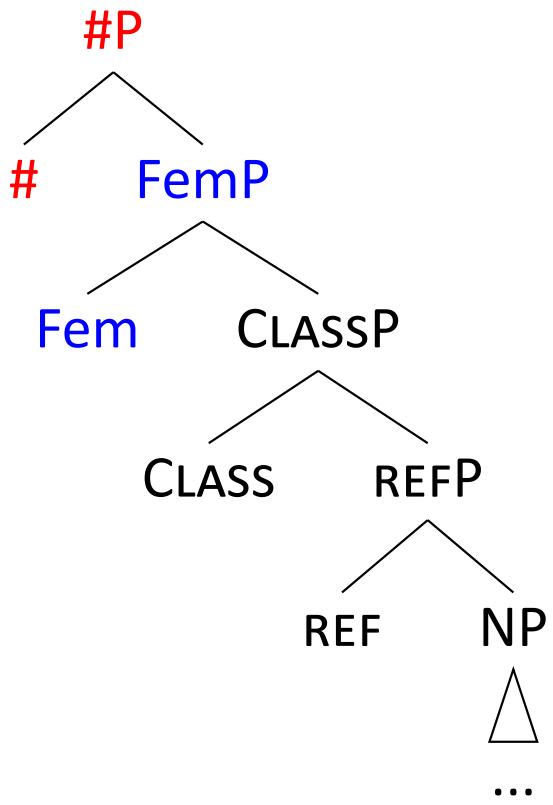
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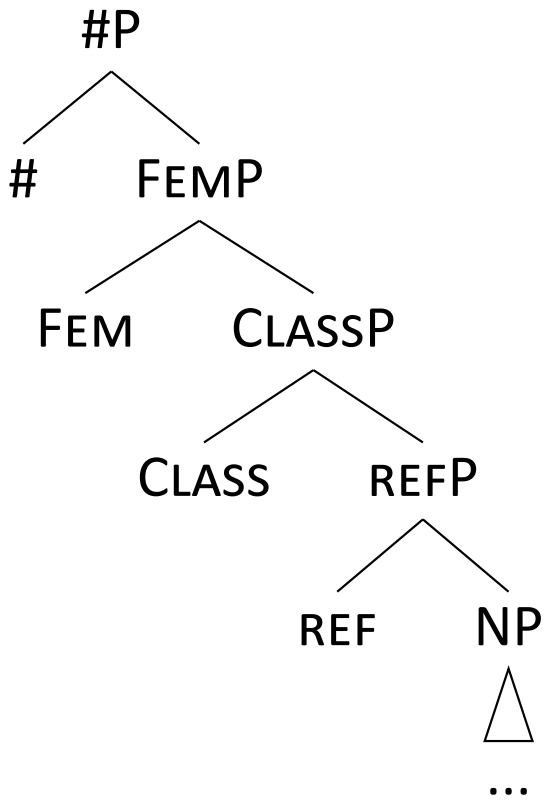
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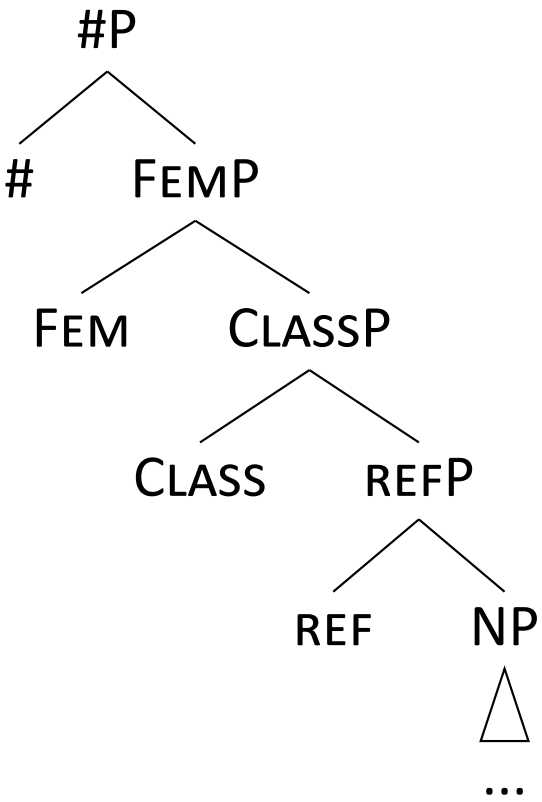
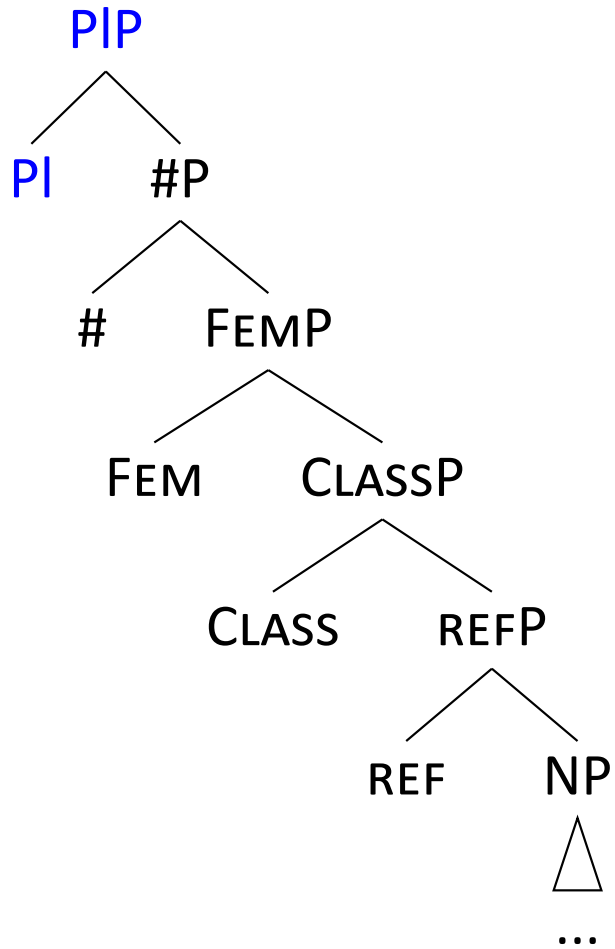
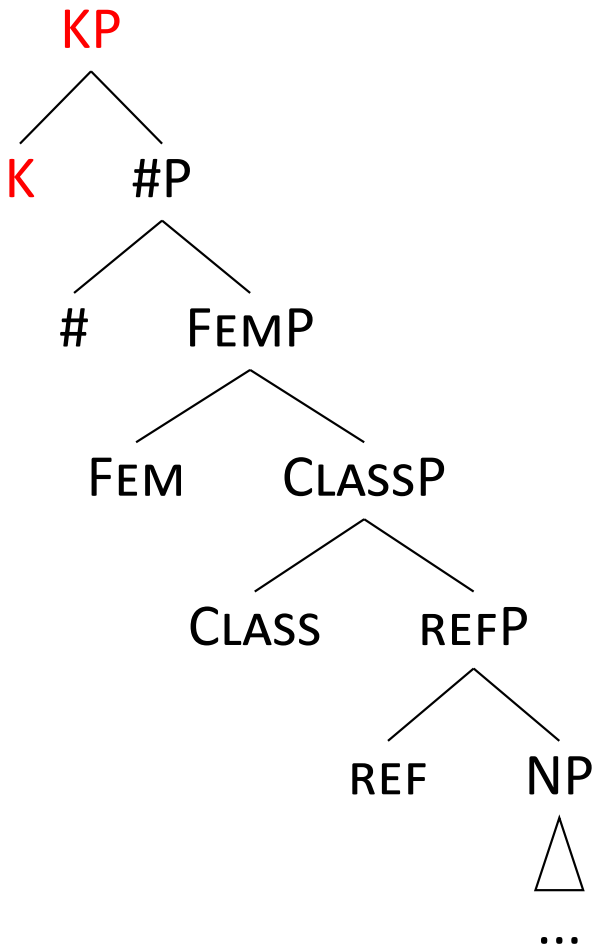
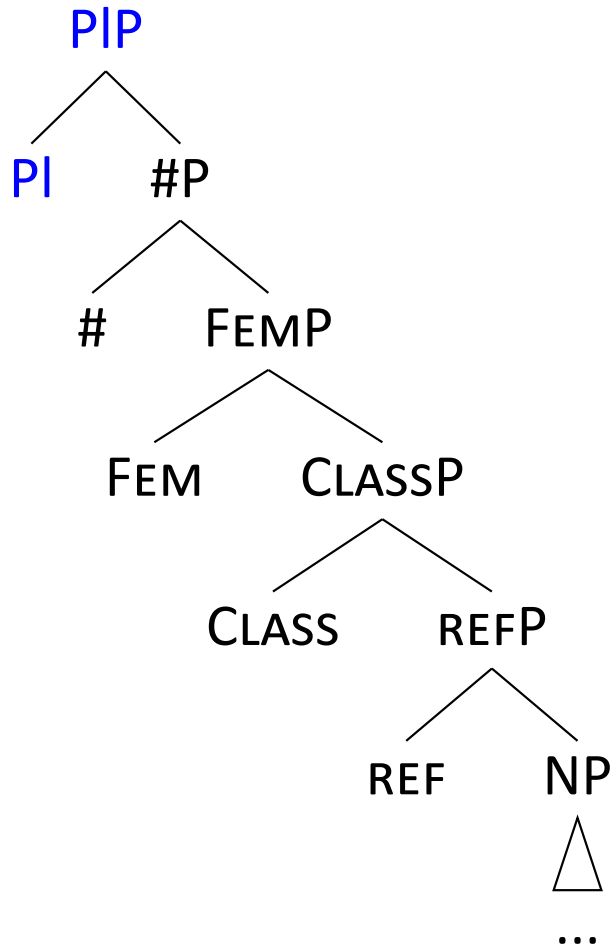
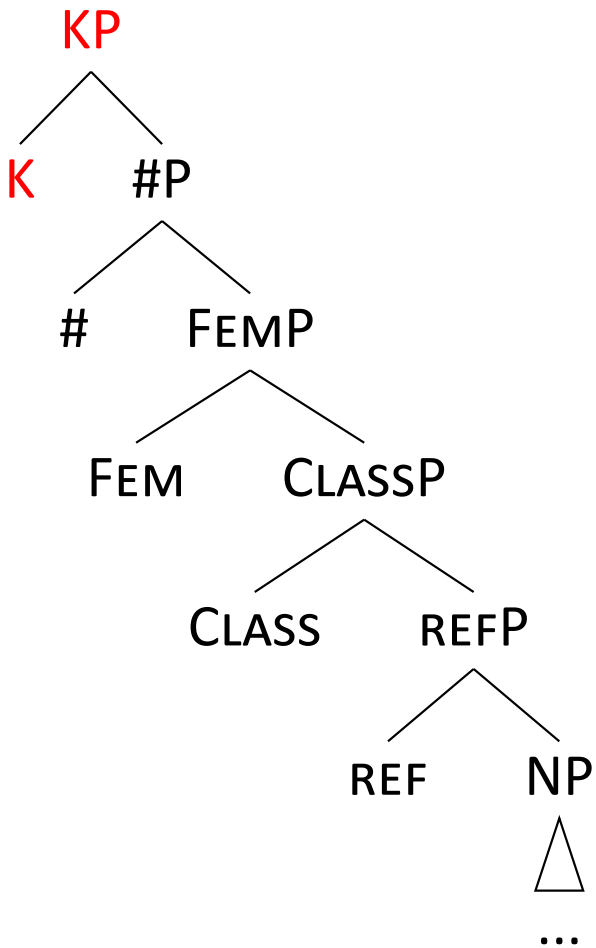
NP
...


#P
#
FEMP
FEM
CLASSP
CLASS
REFP
REF
NP
...


PlP
Pl
#P
#
FEMP
FEM
CLASSP
CLASS
REFP
REF
NP
...


KP
K
#P
#
FEMP
FEM
CLASSP
CLASS
REFP
REF
NP
...


PlP
Pl
#P
#
FEMP
FEM
CLASSP
CLASS
REFP
REF
NP
...


KP
K
#P
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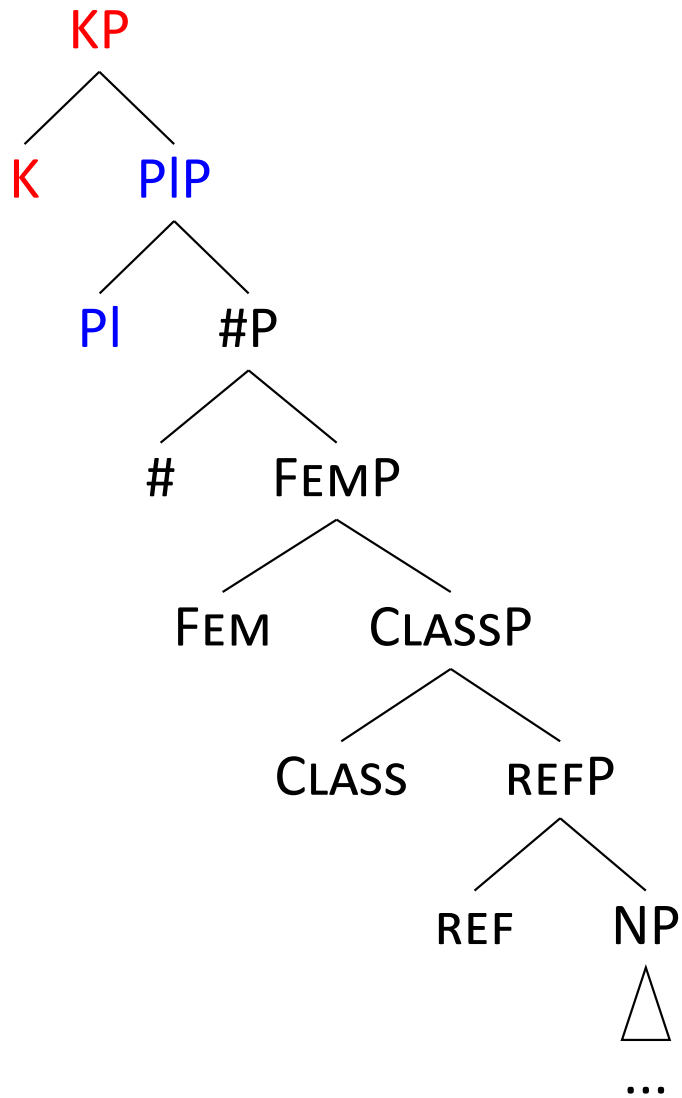
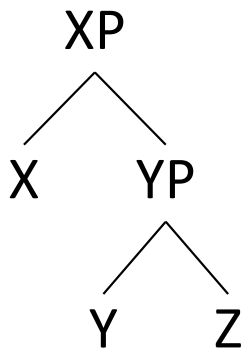
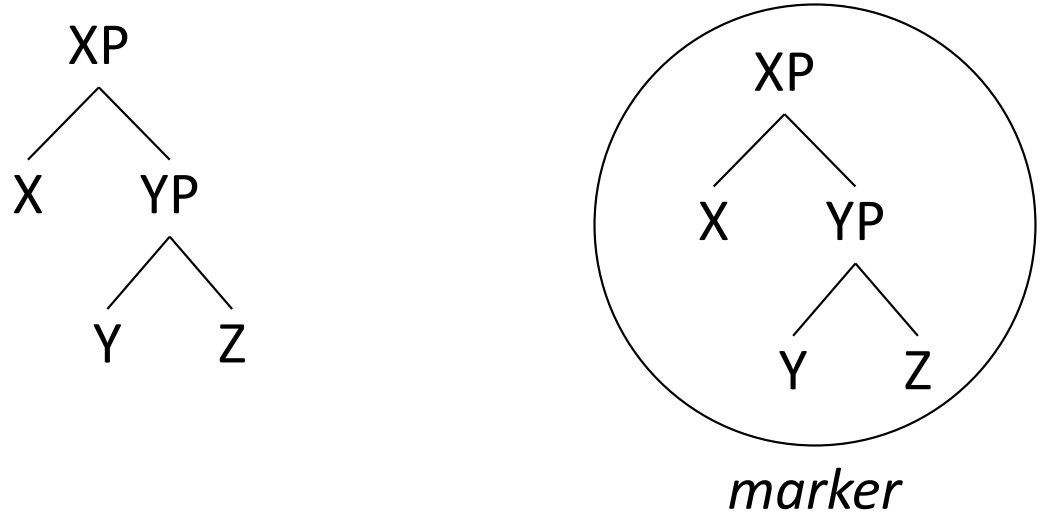
FEMP
FEM
CLASSP
CLASS
REFP
REF
NP
...


KP
K
PlP
Pl
#P
#
FEMP
FEM
CLASSP
CLASS
REFP
REF
NP
...

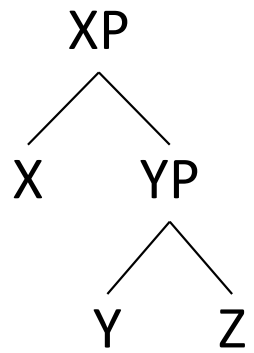
Phrasal spellout (Starke 2018)

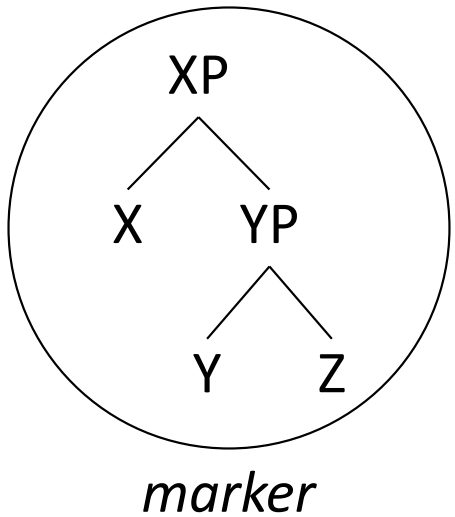


Phrasal spellout (Starke 2018)

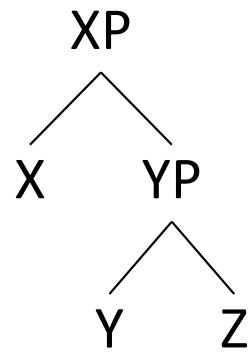


Phrasal spellout (Starke 2018)





marker ⟺

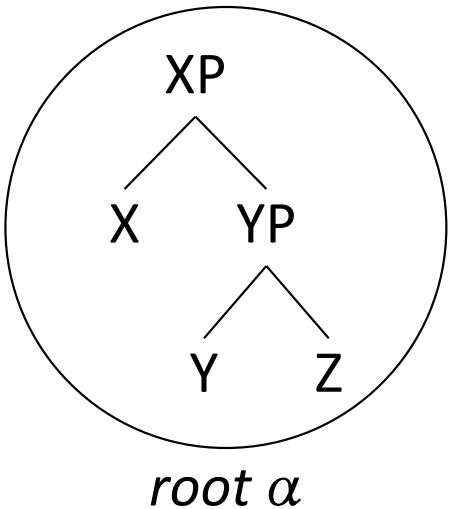


Phrasal spellout (Starke 2018)

- Roots come in different sizes Vanden Wyngaerd et al. 2020)

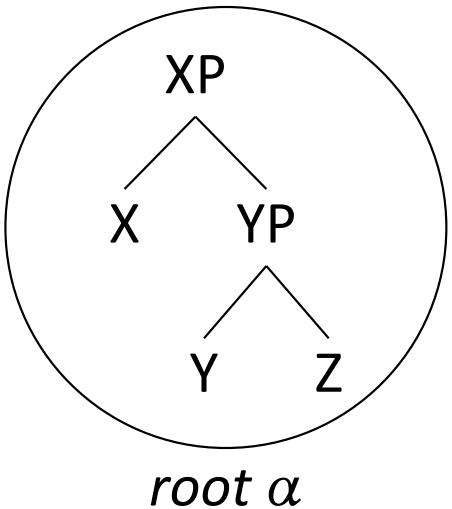
Phrasal spellout (Starke 2018)

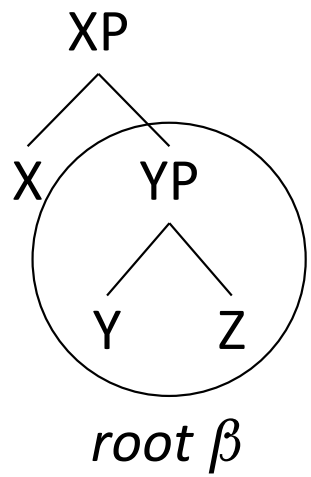
- Roots come in different sizes Vanden Wyngaerd et al. 2020)



Phrasal spellout (Starke 2018)

- Roots come in different sizes Vanden Wyngaerd et al. 2020)





Phrasal spellout (Starke 2018)

(8) English plural

Phrasal spellout (Starke 2018)

(8) English plural

a. sheep — sheep (syncretism)

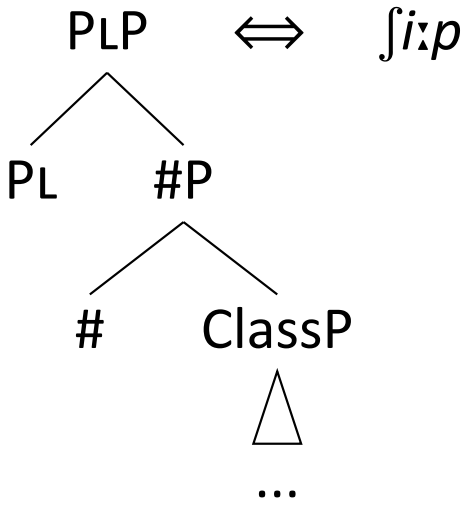
Phrasal spellout (Starke 2018)

(8) English plural

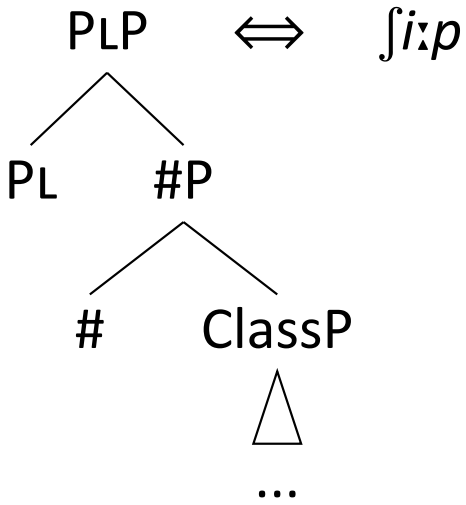
a. sheep — sheep (syncretism)

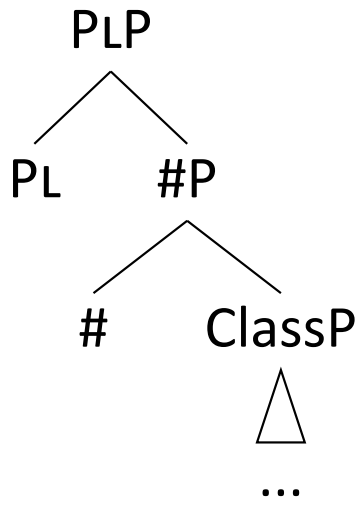
b. cat — cat-s (stacking)

Phrasal spellout (Starke 2018)

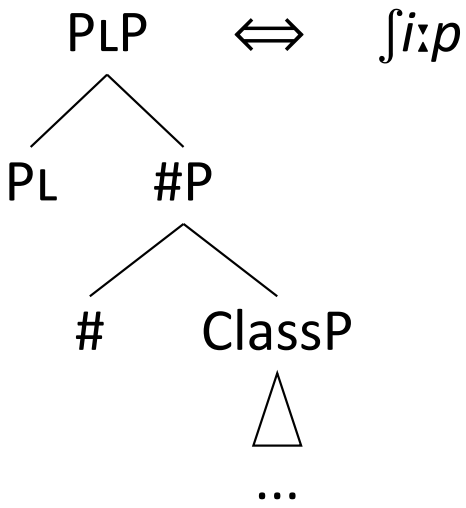


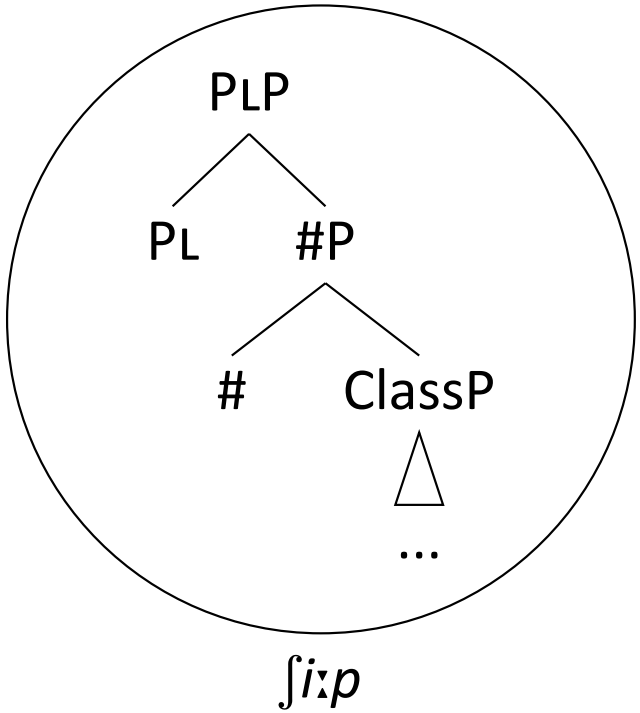
Phrasal spellout (Starke 2018)





Phrasal spellout (Starke 2018)





(9) *Superset Principle* (Starke 2009)
A lexically stored tree L matches a syntactic node S iff L contains the syntactic tree dominated by S as a subtree

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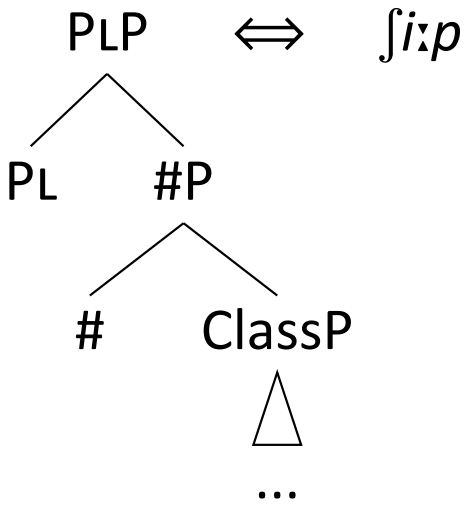
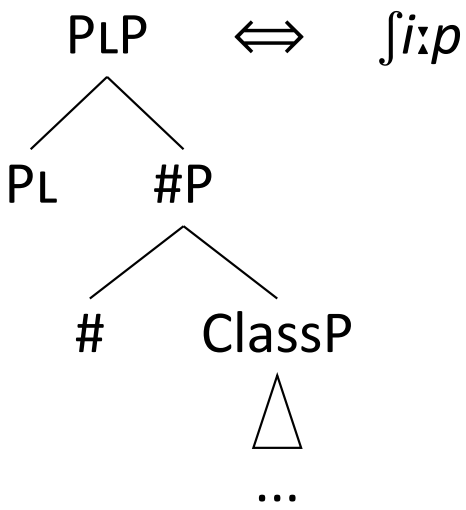
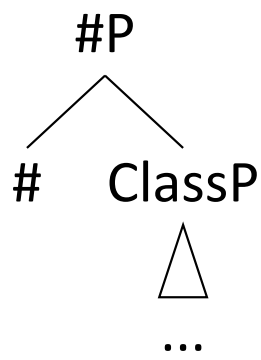
A lexically stored tree L matches a syntactic node S iff L contains the syntactic tree dominated by S as a subtree

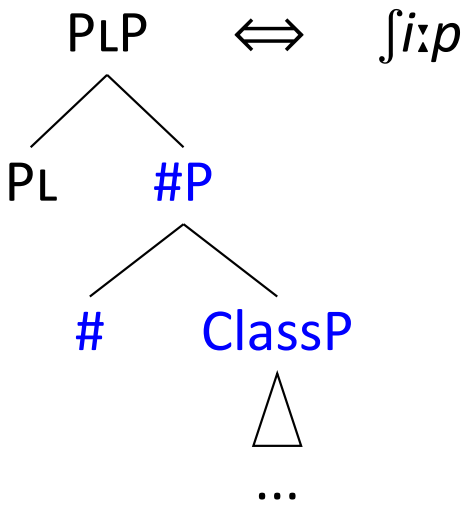


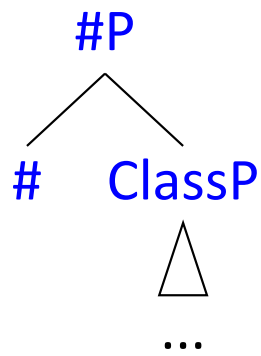
(9) *Superset Principle* (Starke 2009)
A lexically stored tree L matches a syntactic node S iff L contains the syntactic tree dominated by S as a subtree



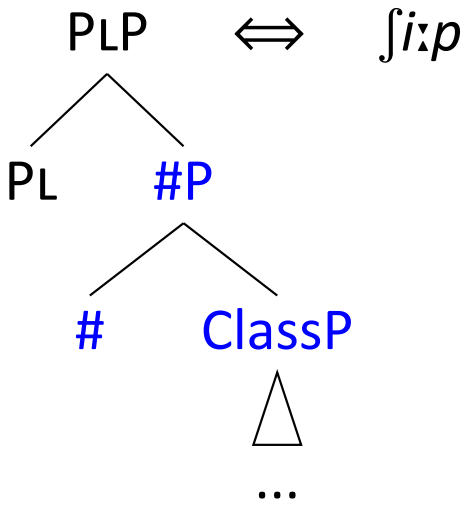


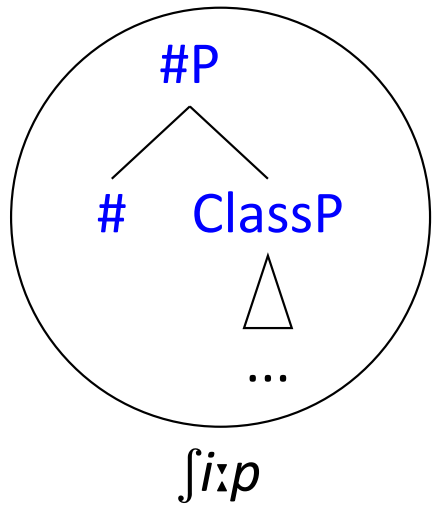
(10) *Superset Principle* (Starke 2009)
A lexically stored tree L matches a syntactic node S iff L contains the syntactic tree dominated by S as a subtree

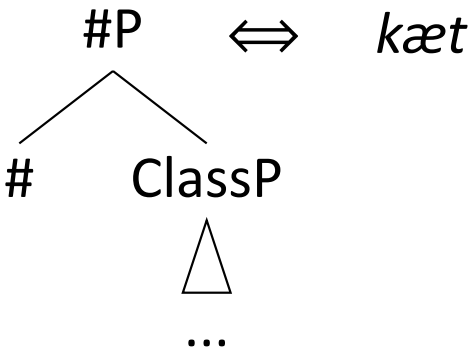


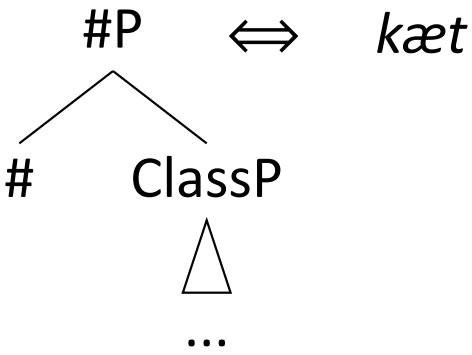


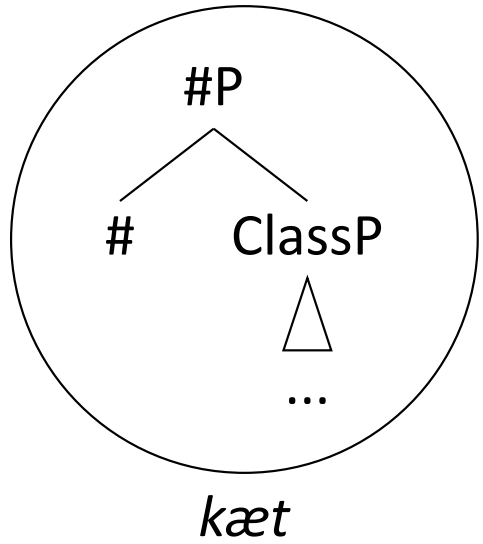
(11) *Superset Principle* (Starke 2009)
A lexically stored tree L matches a syntactic node S iff L contains the syntactic tree dominated by S as a subtree

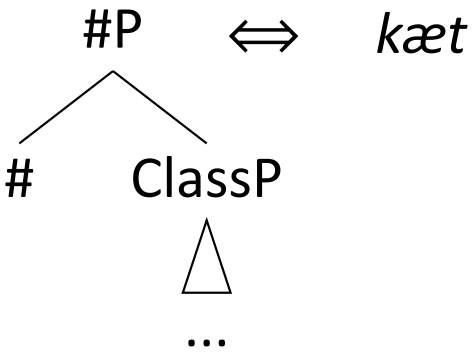


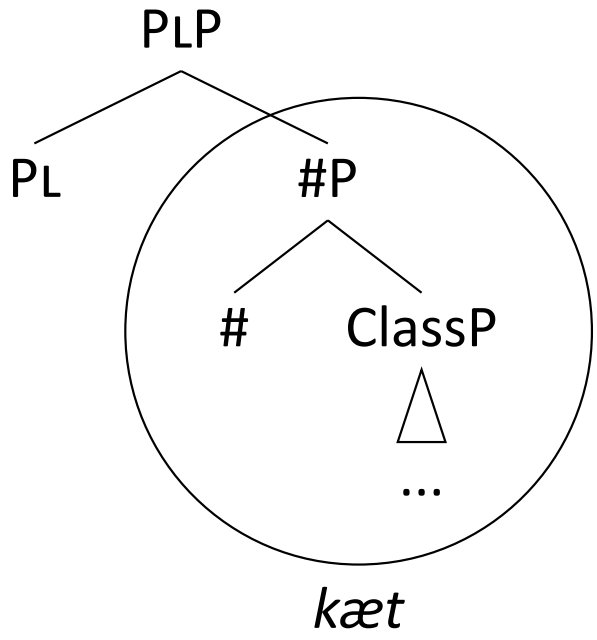


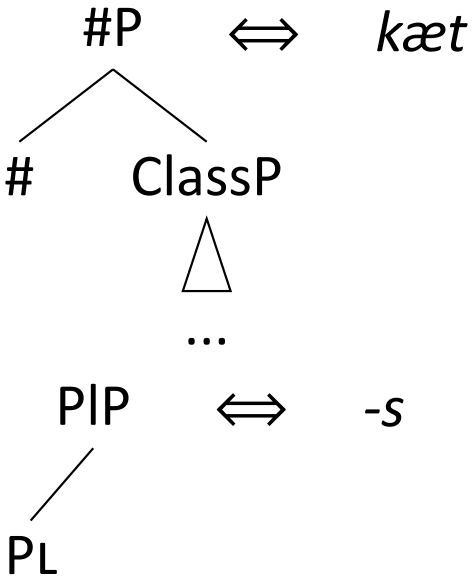

#P
⇔
kæt
#
ClassP
...

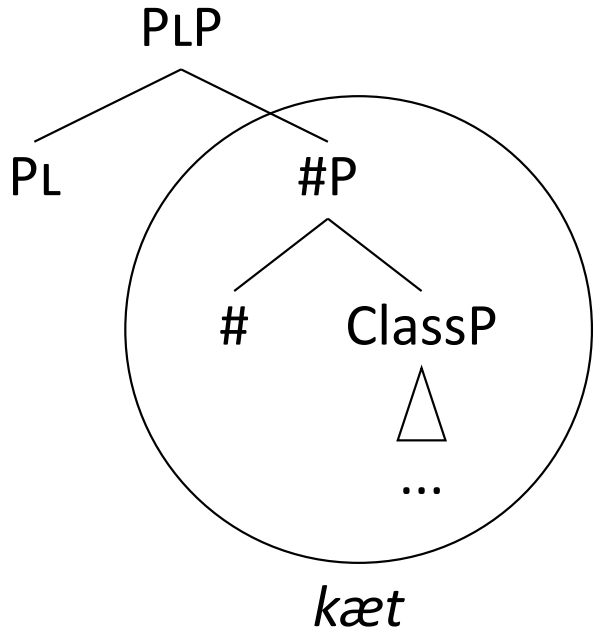

#P
⟺
kæt
#
ClassP
...

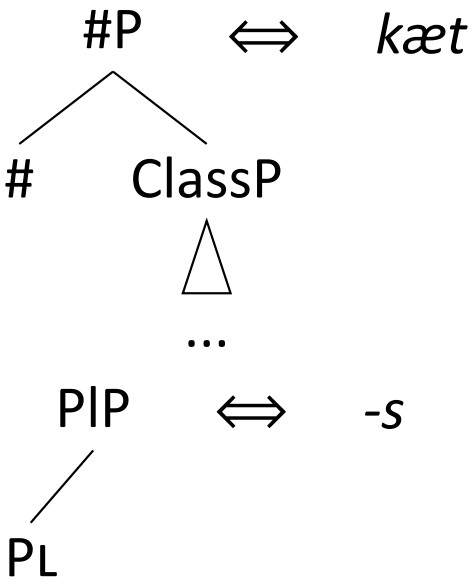

#P
#
ClassP
...
kæt

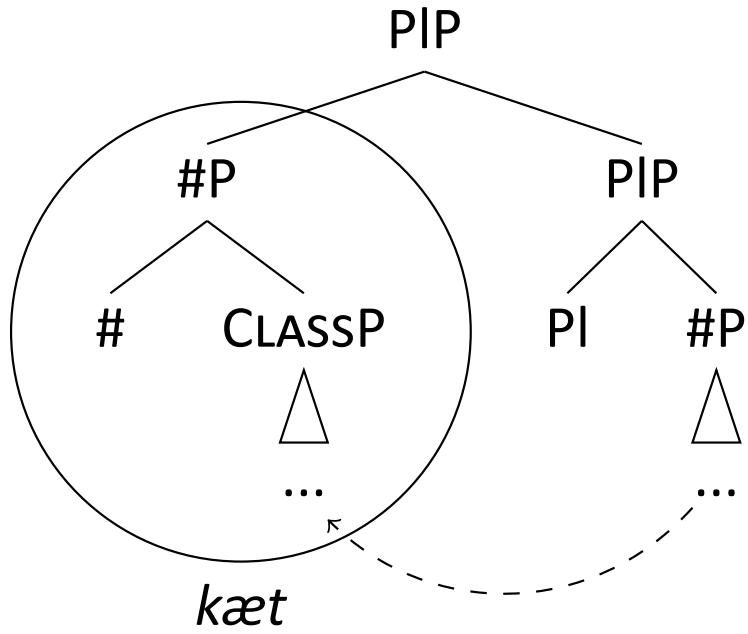

#P
⇔
kæt
#
ClassP
...

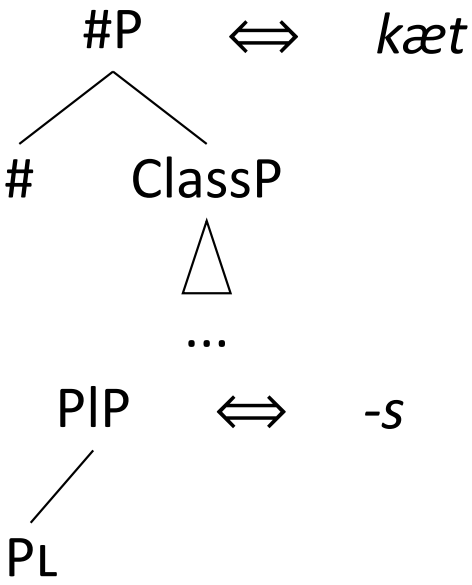

PLP
PL
#P
#
ClassP
...
kæt

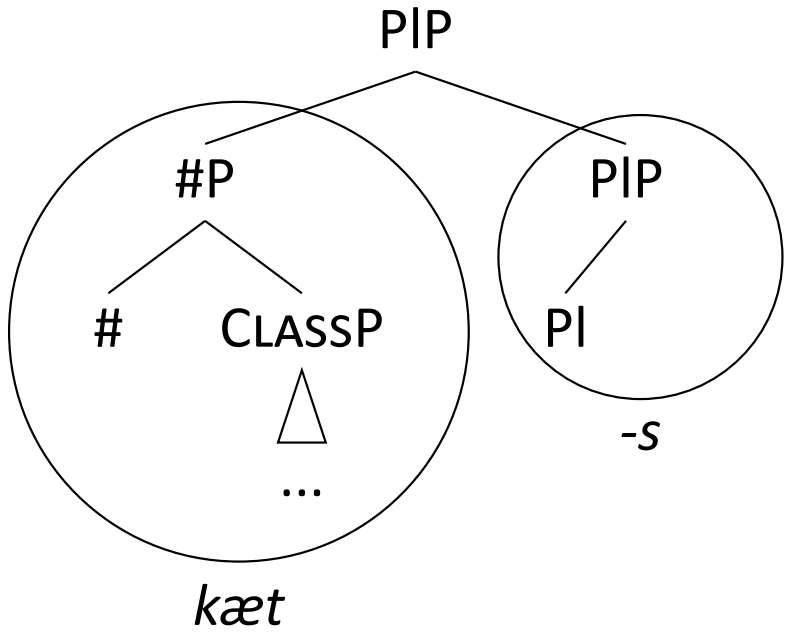

#P ⟺ kæt
#
ClassP
...
PlP ⟺ -s
PL


PLP
PL
#P
#
ClassP
...
kæt


#P ⟺ kæt
#
ClassP
...
PlP ⟺ -s
PL


PlP
#P
PlP
#
CLASSP
Pl
#P
...
...
kæt


#P ⟺ kæt
#
ClassP
...
PlP ⟺ -s
PL


PlP
#P
PlP
#
CLASSP
Pl
...
-s
kæt

Phrasal spellout

- Different roots have different ‘sizes’

Phrasal spellout

- Different roots have different ‘sizes’
  - *sheep* is of the size PLP (it does not need the plural *-s*)

Phrasal spellout

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Phrasal spellout

- Different roots have different ‘sizes’
  - *sheep* is of the size PLP (it does not need the plural *-s*)
  - *cat* is of the size #P (it can not express plural)
  - When a root cannot express all the features, it moves to the left and a suffix appears

(12) Zero marking

a. metel’-Ø (III)

(12) Zero marking

a. metel’-Ø (III)

b. sheep-Ø

(12) Zero marking

a. metel’-Ø (III)

b. sheep-Ø

(13) Overt marking

a. nedel’-a (II)

(12) Zero marking

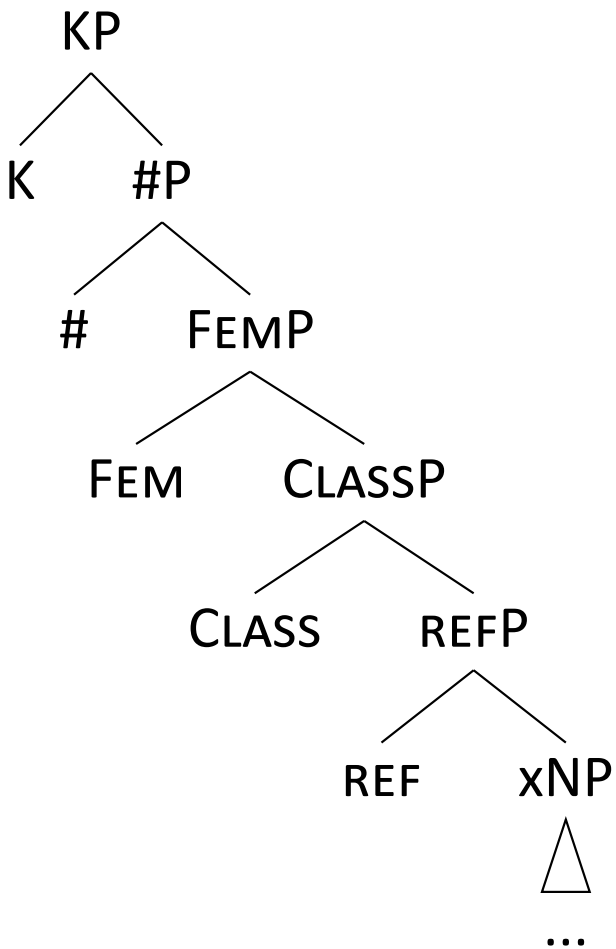
a. metel’-Ø (III)

b. sheep-Ø

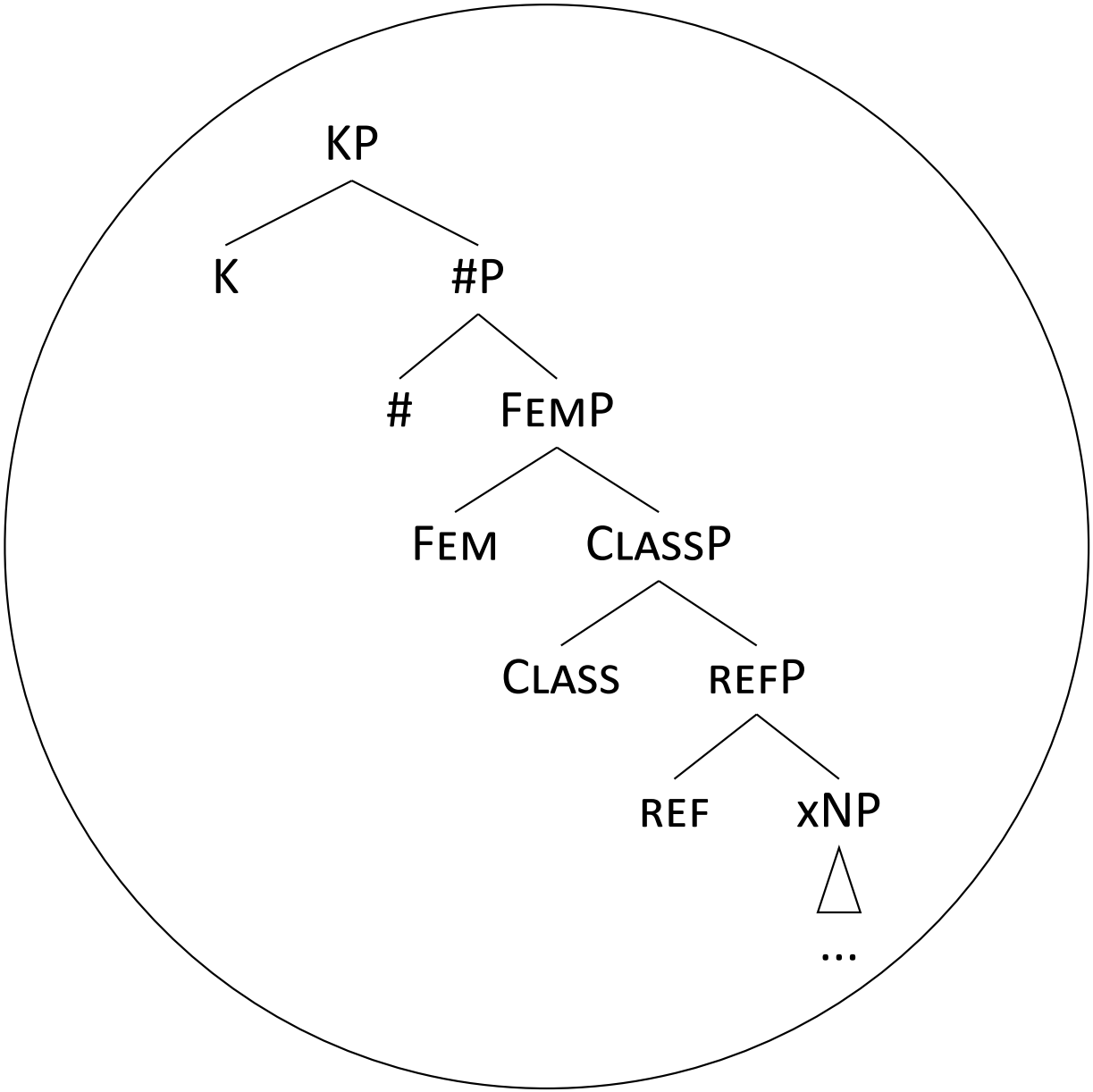
(13) Overt marking

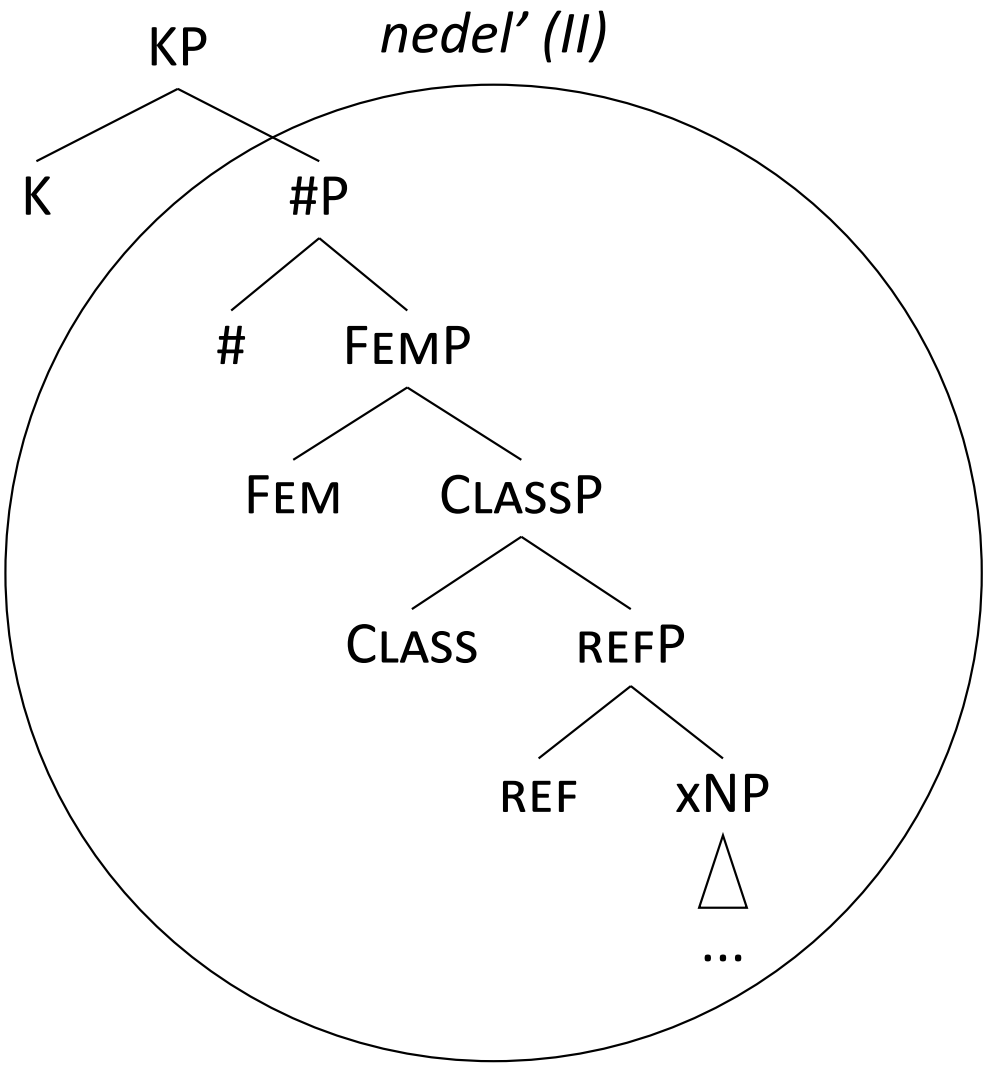
a. nedel’-a (II)

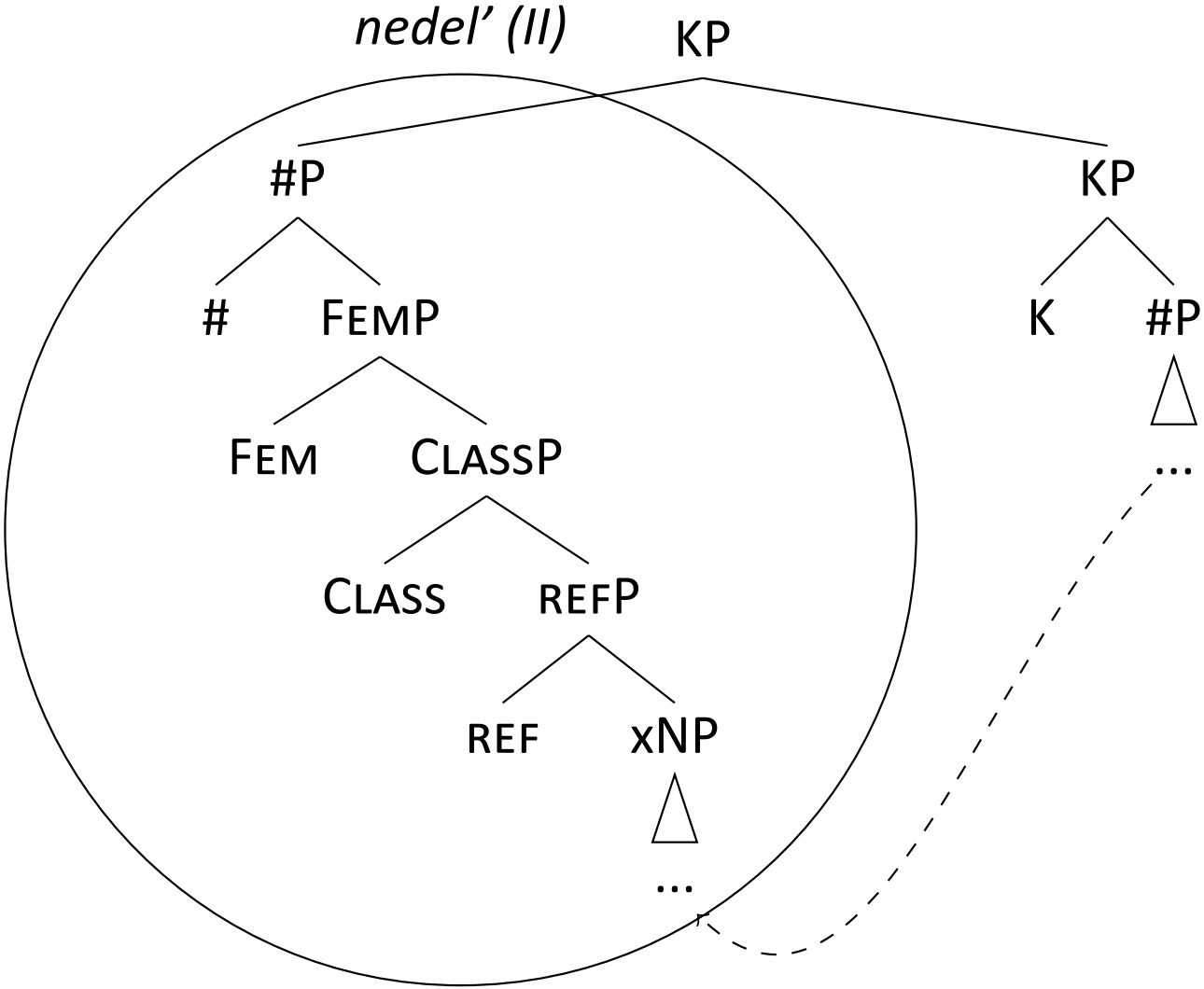
b. cat-s

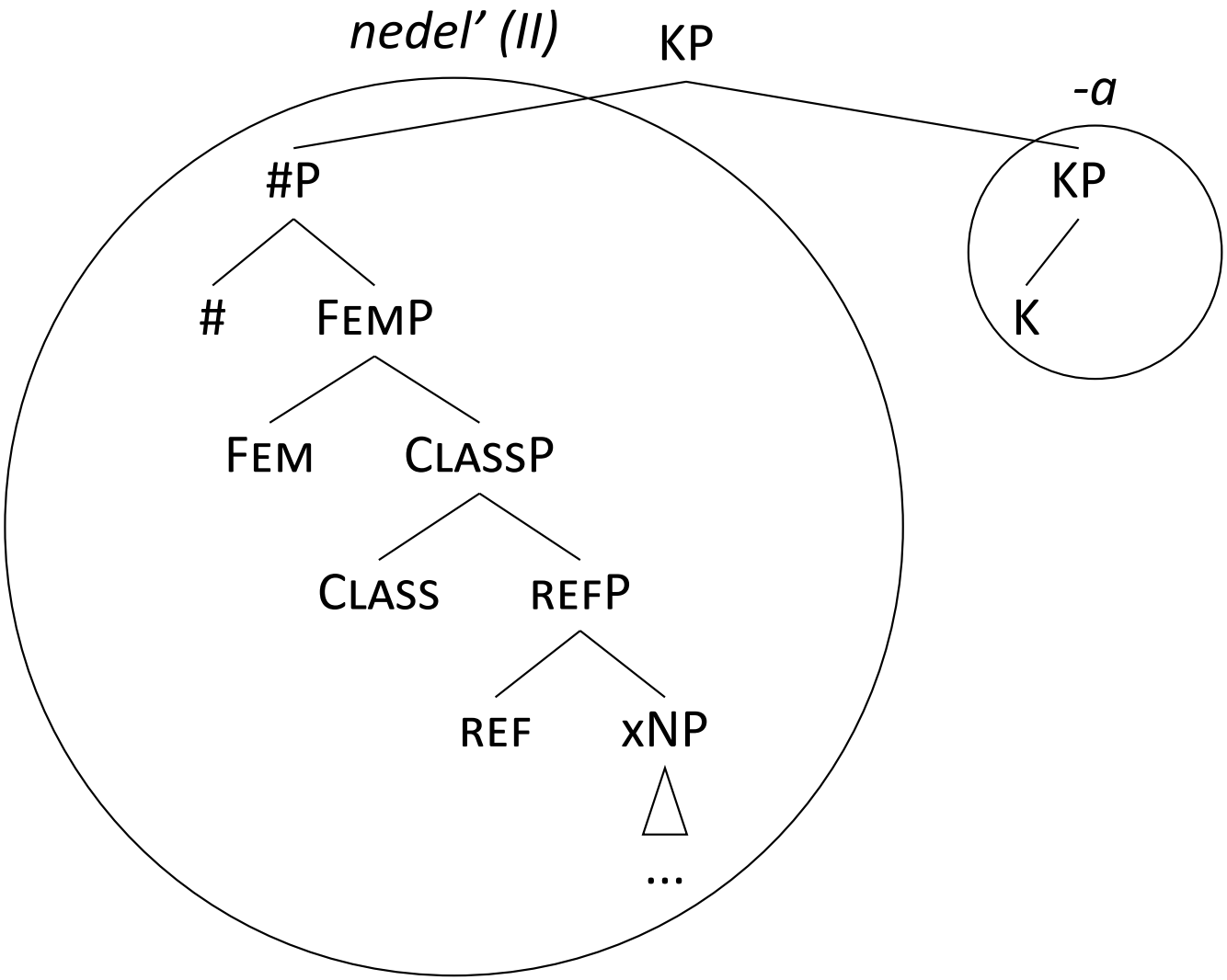

KP
K
#P
#
FEMP
FEM
CLASSP
CLASS
REFP
REF
xNP
...

metel' (III)




KP
nedel' (II)
K
#P
#
FEMP
FEM
CLASSP
CLASS
REFP
REF
xNP
...


nedel' (II)
KP
#P
KP
#
FEMP
K
#P
FEM
CLASSP
...
CLASS
REFP
REF
xNP
...


nedel' (II)
KP
-a
#P
KP
#
FEMP
K
FEM
CLASSP
CLASS
REFP
REF
xNP
...

- Declension classes reduce to differences in ‘root size’

- Declension classes reduce to differences in ‘root size’
- The difference in root size is arbitrary → declension classes are arbitrary

- Declension classes reduce to differences in ‘root size’
- The difference in root size is arbitrary → declension classes are arbitrary
- Declension classes exist – but are not encoded via declension features

(14) The locative

a. metel’-i (snowstorm)

(14) The locative

a. metel’-i (snowstorm)

b. nedel’-e (week)

*ABA

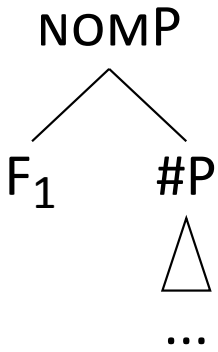
Syncretism in Russian (McCreight & Chvany 1991)

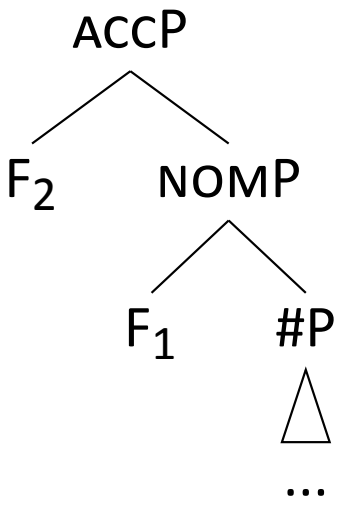
	window, sg.	teacher, pl.	both, m.i.	book, sg.	100
NOM	OKN-O	učitel-ja	dv-a	knig-a	st-o
ACC	OKN-O	UČITEL-EJ	dv-a	knig-u	st-o
GEN	okn-a	UČITEL-EJ	DV-UX	knig-y	ST-A
LOC	okn-e	učitel-jax	DV-UX	KNIG-E	ST-A
DAT	okn-u	učitel-am	dv-um	KNIG-E	ST-A
INS	okn-om	učitel-ami	dv-umja	knig-oj	ST-A

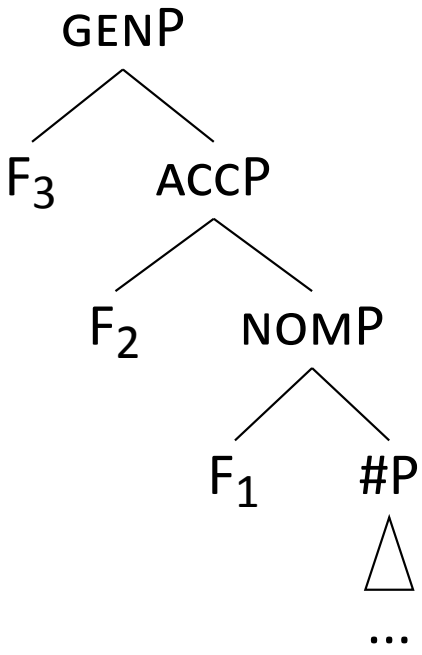
Caha (2009)

Table: Cummulative feature decomposition

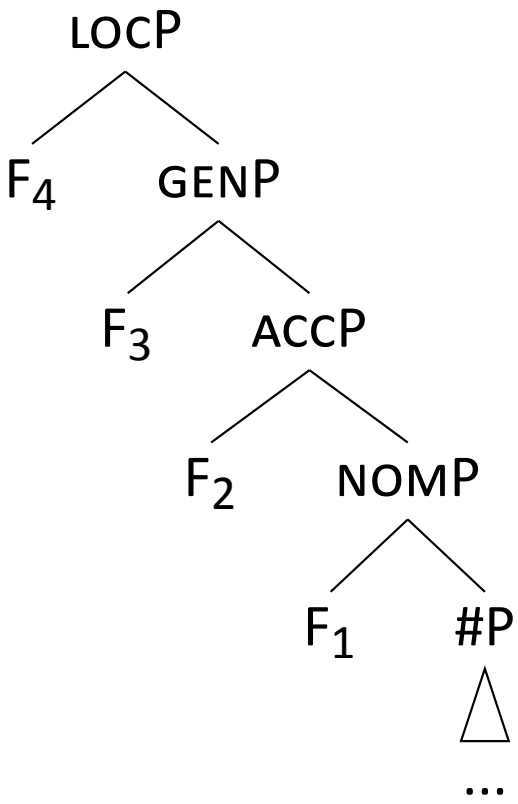
CASE	FEATURES
NOM	F1
ACC	F1, F2
GEN	F1, F2, F3
LOC	F1, F2, F3, F4
DAT	F1, F2, F3, F4, F5
INS	F1, F2, F3, F4, F5, F6


NOMP
F_1
#P
...

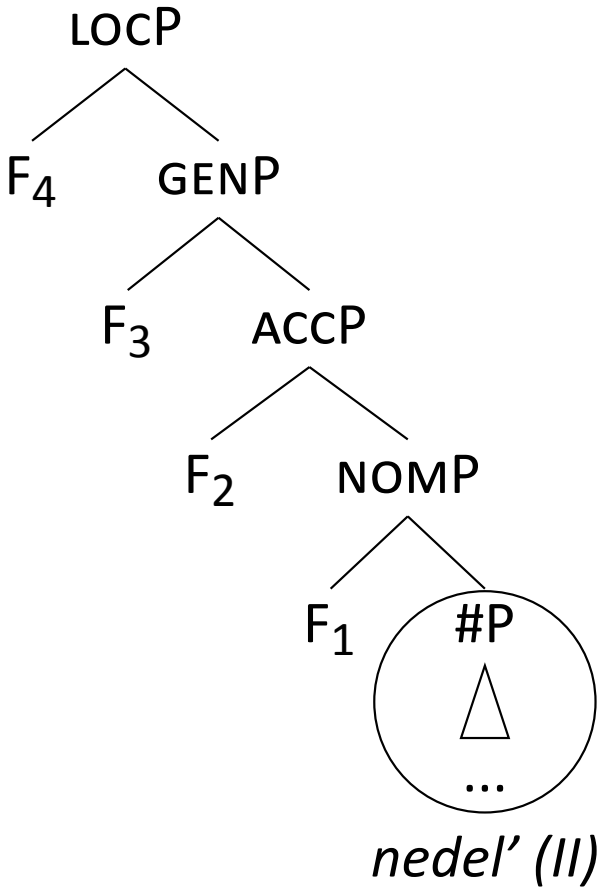

ACCP
F2
NOMP
F1
#P
...


GENP
F3
ACCP
F2
NOMP
F1
#P
...

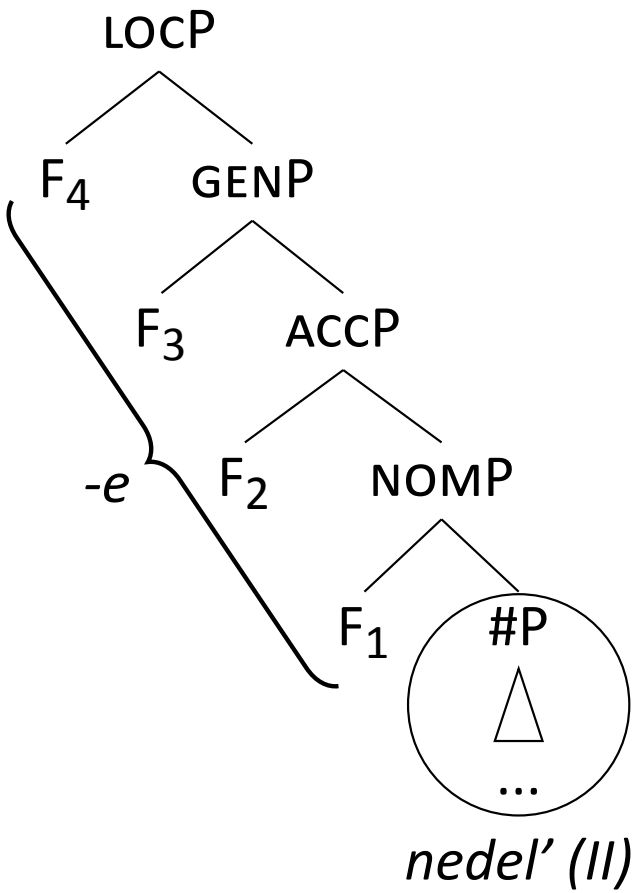
Decomposing case



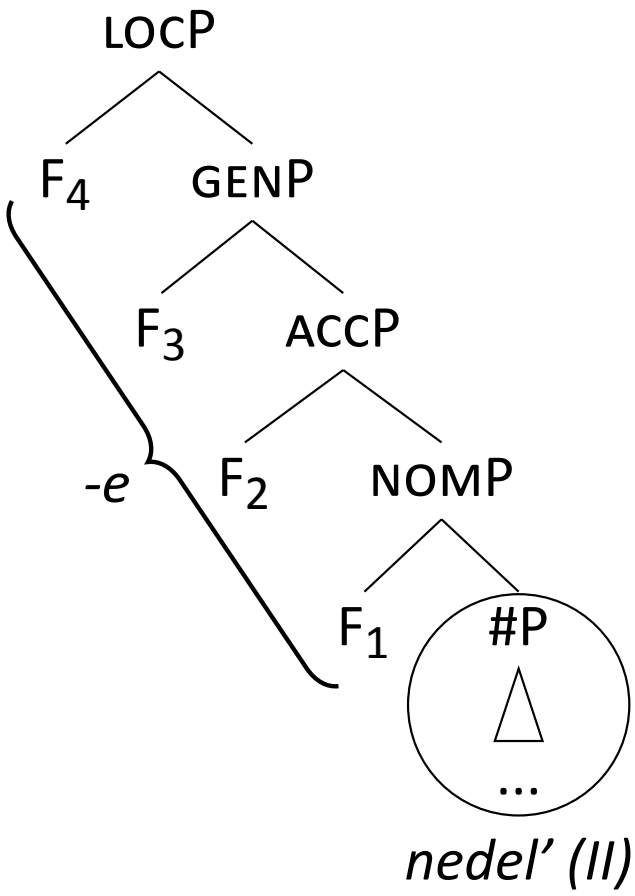
Decomposing case

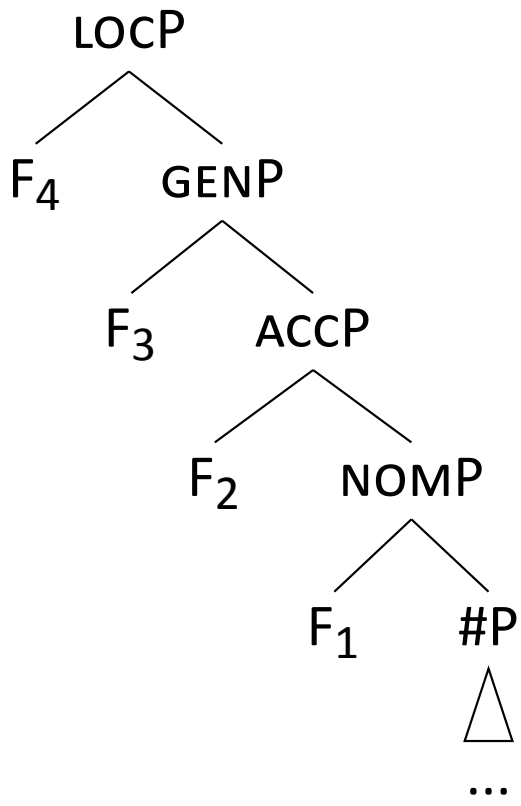


Decomposing case

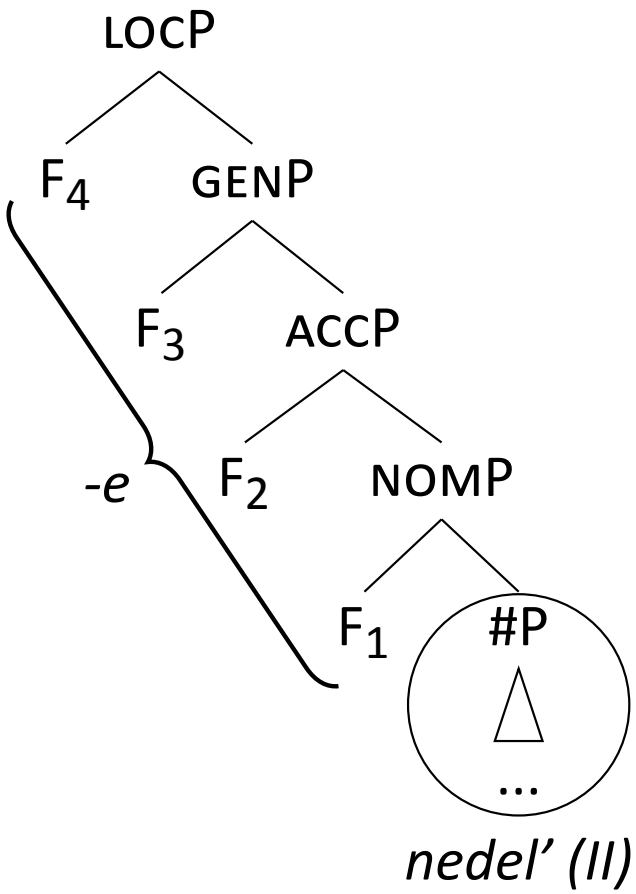


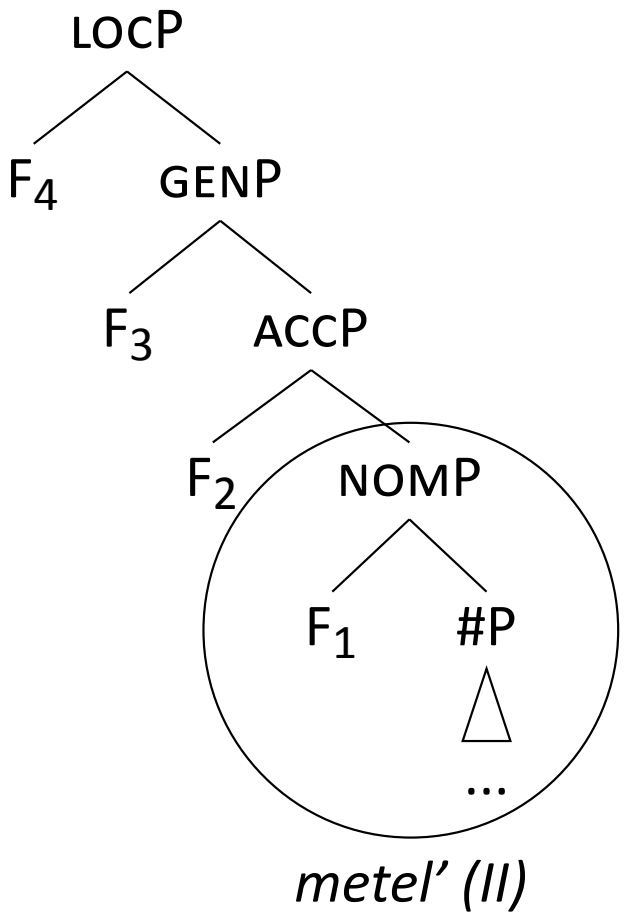
Decomposing case



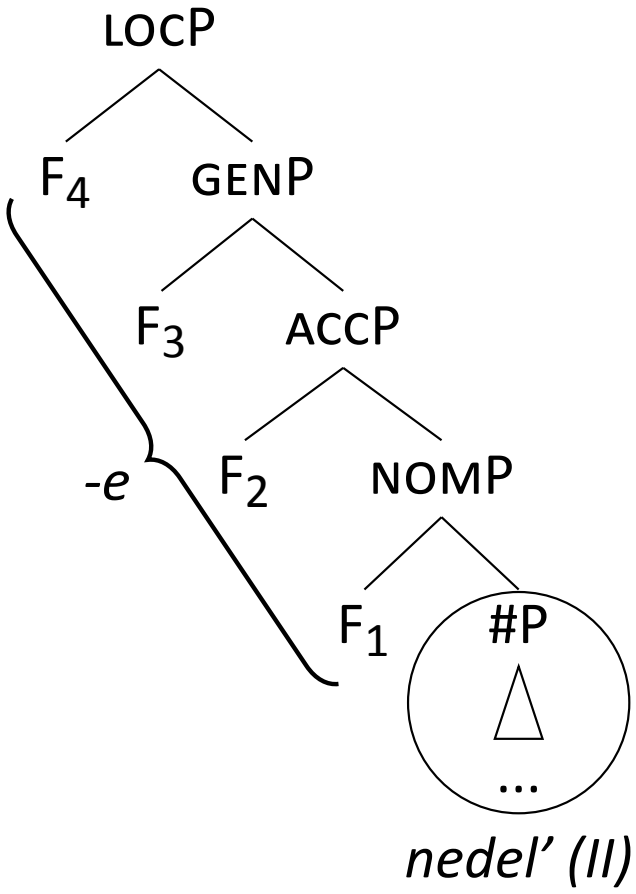


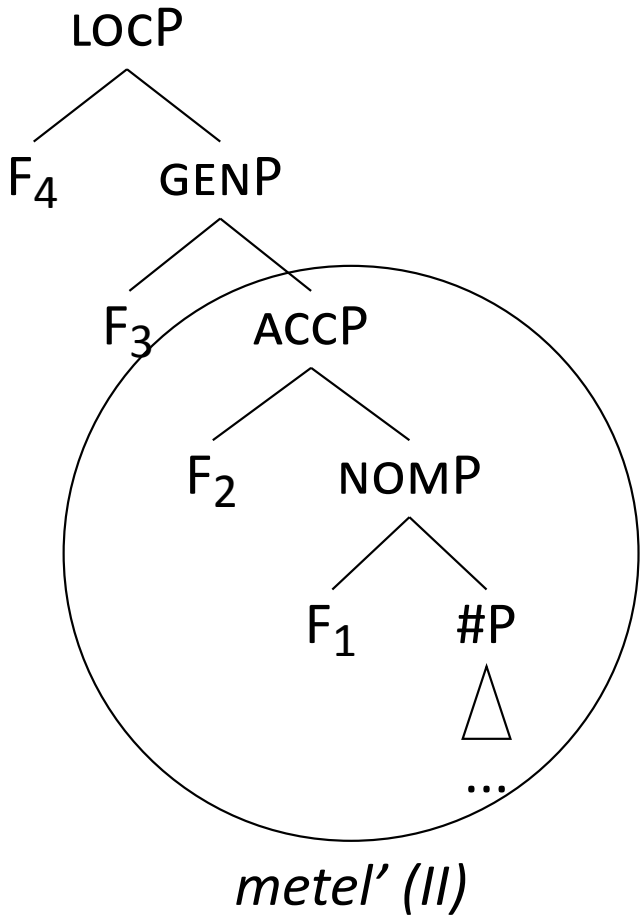
Decomposing case



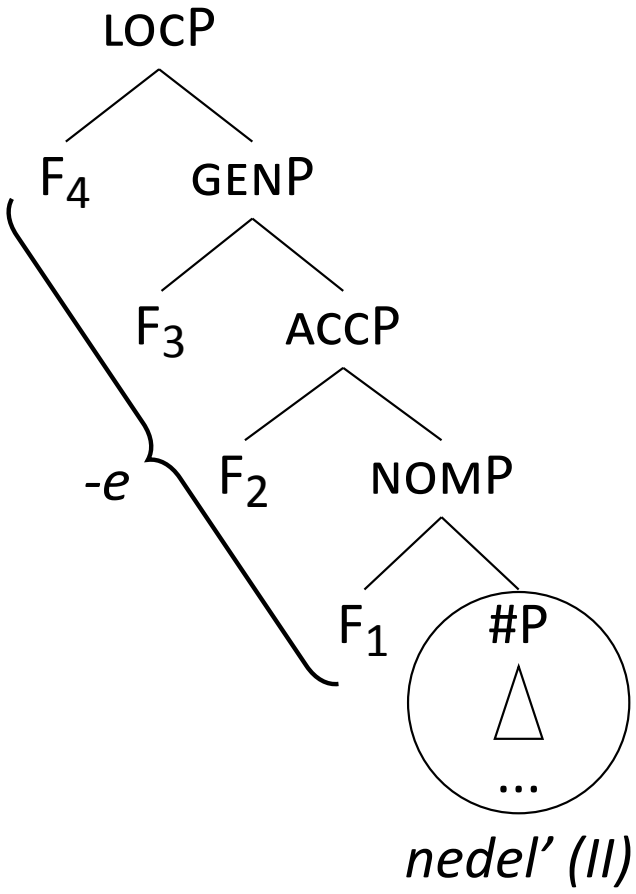


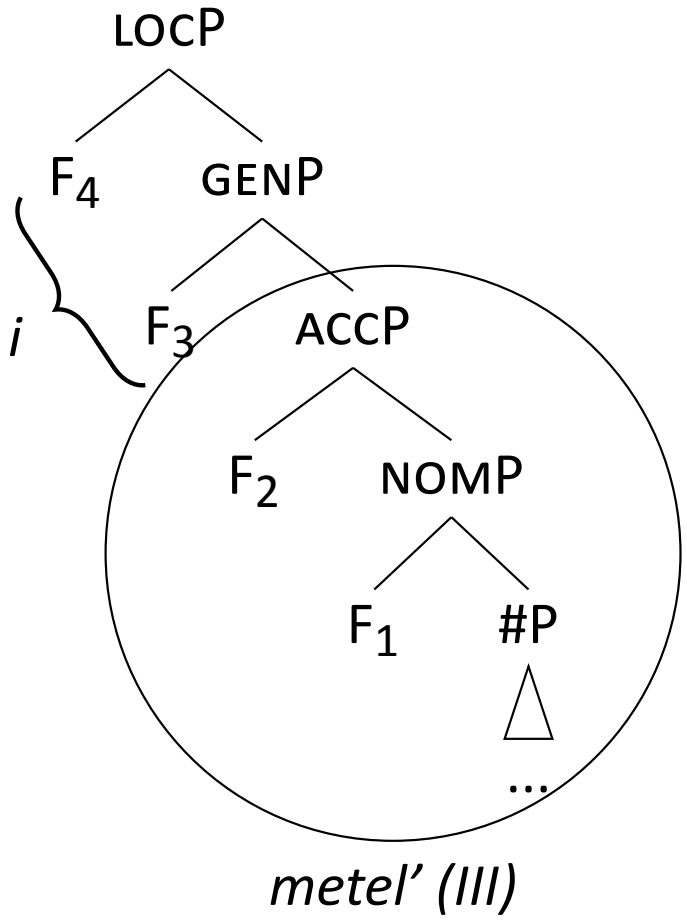
Decomposing case





Decomposing case





Decomposing case

	xNP	REF	CLASS	FEM	#	F1	F2	F3	F4	F5	F6
NOM	III (metel')										
ACC	III (metel')										
GEN	III (metel')							i			
LOC	III (metel')								i		
DAT	III (metel')									i	
INS	III (metel')										ju

Decomposing case

	xNP	REF	CLASS	FEM	#	F1	F2	F3	F4	F5	F6
NOM	III (metel')										
ACC	III (metel')										
GEN	III (metel')							i			
LOC	III (metel')								i		
DAT	III (metel')									i	
INS	III (metel')										ju
NOM	II (nedel')					a					
ACC	II (nedel')						u				
GEN	II (nedel')							i			
LOC	II (nedel')								e		
DAT	II (nedel')									e	
INS	II (nedel')										ej

Number, Gender, declension

(15) Declensions and gender, inanimates (Corbett 1982)

Number, Gender, declension

(15) Declensions and gender, inanimates (Corbett 1982)

a. I → masculine

Number, Gender, declension

(15) Declensions and gender, inanimates (Corbett 1982)

a. I $\rightarrow$ masculine

b. II $\rightarrow$ feminine

Number, Gender, declension

(15) Declensions and gender, inanimates (Corbett 1982)

a. I → masculine

b. II → feminine

c. III → feminine (15 exceptions)

Number, Gender, declension

(15) Declensions and gender, inanimates (Corbett 1982)

a. I → masculine
b. II → feminine
c. III → feminine (15 exceptions)
d. IV → neuter

Number, Gender, declension

	xNP	REF	CLASS	FEM	#	F1	F2	F3	F4	F5	F6
NOM			žen			a					
ACC			žen			u					
GEN			žen			y					
LOC			žen			e					
DAT			žen			e					
INS			žen			oj					

Number, Gender, declension

	xNP	REF	CLASS	FEM	#	F1	F2	F3	F4	F5	F6
NOM			žen			a					
ACC			žen			u					
GEN			žen			y					
LOC			žen			e					
DAT			žen			e					
INS			žen			oj					
	xNP	REF	CLASS		#	F1	F2	F3	F4	F5	F6

Number, Gender, declension

	xNP	REF	CLASS	FEM	#	F1	F2	F3	F4	F5	F6
NOM	žen					a					
ACC	žen					u					
GEN	žen					y					
LOC	žen					e					
DAT	žen					e					
INS	žen					oj					

	xNP	REF	CLASS	#	F1	F2	F3	F4	F5	F6
NOM	meuter				a					

Number, Gender, declension

	xNP	REF	CLASS	FEM	#	F1	F2	F3	F4	F5	F6
NOM			žen			a					
ACC			žen				u				
GEN			žen					y			
LOC			žen						e		
DAT			žen							e	
INS			žen								oj

	xNP	REF	CLASS	#	F1	F2	F3	F4	F5	F6
NOM			meuter		a					
ACC			meuter			u				
GEN			meuter				y			
LOC			meuter					e		
DAT			meuter						e	
INS			meuter							oj

Number, Gender, declension

	xNP	REF	CLASS	FEM	#	F1	F2	F3	F4	F5	F6
NOM			žen			a					
ACC			žen			u					
GEN			žen			y					
LOC			žen			e					
DAT			žen			e					
INS			žen			oj					

Number, Gender, declension

	xNP	REF	CLASS	FEM	#	F1	F2	F3	F4	F5	F6
NOM	žen				a						
ACC	žen					u					
GEN	žen						y				
LOC	žen							e			
DAT	žen								e		
INS	žen									oj	

Number, Gender, declension

Table: SG. vs. PL. (Timberlake 2004)

	woman, ll (SG)	woman, ll (PL)
NOM	žen-a	žen-y
ACC	žen-u	žen-y
GEN	žen-y	žen-Ø
LOC	žen-e	žen-ax
DAT	žen-e	žen-am
INS	žen-oj	žen-ami

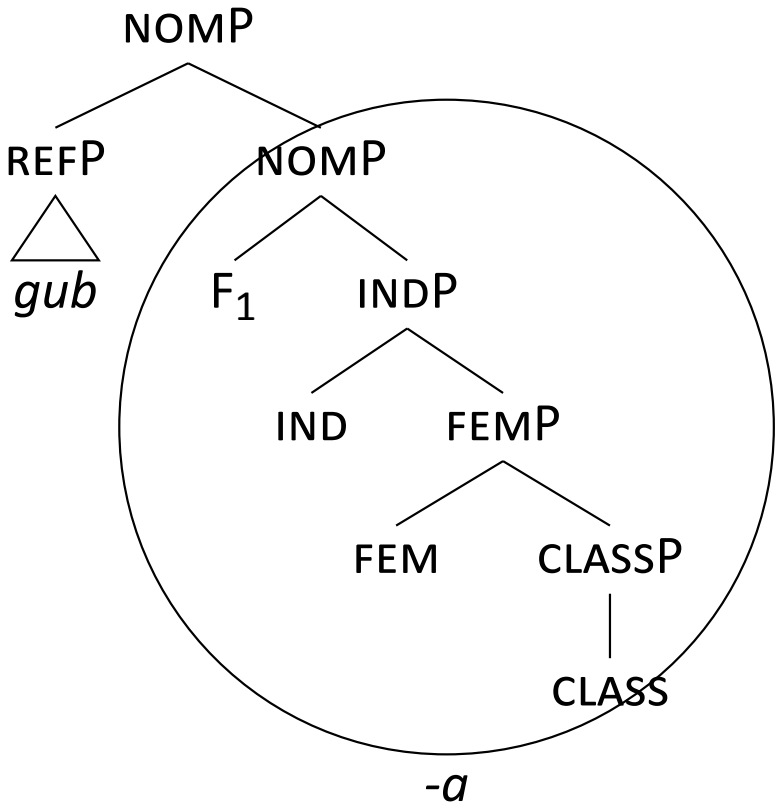
Number, Gender, declension

	xNP	REF	CLASS	FEM	#	F1	F2	F3	F4	F5	F6
NOM		žen			a						
ACC		žen				u					
GEN		žen					y				
LOC		žen						e			
DAT		žen							e		
INS		žen								oj	

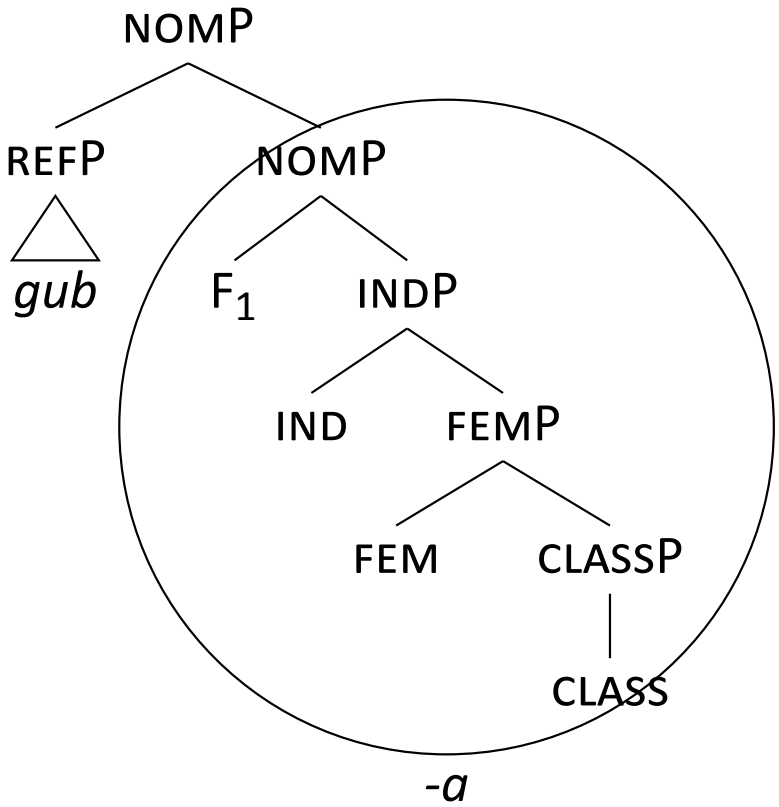
Number, Gender, declension

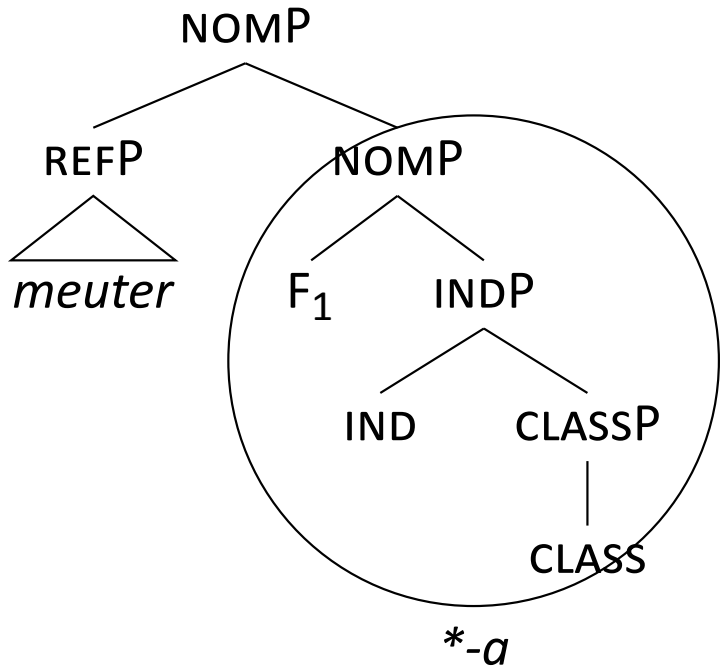
	xNP	REF	CLASS	FEM	#	F1	F2	F3	F4	F5	F6
NOM	žen			a							
ACC	žen			u							
GEN	žen			y							
LOC	žen			e							
DAT	žen			e							
INS	žen			oj							

Number, Gender, declension



Number, Gender, declension





Number, Gender, declension

	xNP	REF	CLASS	FEM	#	F1	F2	F3	F4	F5	F6
NOM	žen			a							
ACC	žen			u							
GEN	žen			y							
LOC	žen			e							
DAT	žen			e							
INS	žen			oj							

Number, Gender, declension

	xNP	REF	CLASS	FEM	#	F1	F2	F3	F4	F5	F6
NOM	žen			a							
ACC	žen			u							
GEN	žen			y							
LOC	žen			e							
DAT	žen			e							
INS	žen			oj							
	xNP	REF	CLASS		#	F1	F2	F3	F4	F5	F6

Number, Gender, declension

	xNP	REF	CLASS	FEM	#	F1	F2	F3	F4	F5	F6
NOM	žen			a							
ACC	žen			u							
GEN	žen			y							
LOC	žen			e							
DAT	žen			e							
INS	žen			oj							

	xNP	REF	CLASS	#	F1	F2	F3	F4	F5	F6
NOM	meut		*a							

Number, Gender, declension

	xNP	REF	CLASS	FEM	#	F1	F2	F3	F4	F5	F6
NOM	žen					a					
ACC	žen					u					
GEN	žen					y					
LOC	žen					e					
DAT	žen					e					
INS	žen					oj					

	xNP	REF	CLASS	#	F1	F2	F3	F4	F5	F6
NOM	meut				*a					
ACC	meut				*u					
GEN	meut				*y					
LOC	meut				*e					
DAT	meut				*e					
INS	meut				*oj					

Number, Gender, declension

	xNP	REF	CLASS	FEM	#	F1	F2	F3	F4	F5	F6
NOM	žen			a							
ACC	žen			u							
GEN	žen			y							
LOC	žen			e							
DAT	žen			e							
INS	žen			oj							

	xNP	REF	CLASS	#	F1	F2	F3	F4	F5	F6
NOM	mest		o							
ACC	mest		o							
GEN	mest		a							
LOC	mest		e							
DAT	mest		u							
INS	mest		om							

Declension III

(16) Declensions and genders for inanimates (Corbett 1982)

a. I → masculine
b. II → feminine
c. III → feminine (15 exceptions)
d. IV → neuter

Declension III

(17) Declensions and genders for inanimates (Corbett 1982)

a. I → masculine

b. II → feminine

c. III → feminine (15 exceptions)

d. IV → neuter

Declension III

	xNP	REF	CLASS	FEM	#	F1	F2	F3	F4	F5	F6
NOM	žen					a					
ACC	žen					u					
GEN	žen					y					
LOC	žen					e					
DAT	žen					e					
INS	žen					oj					

	xNP	REF	CLASS	FEM	#	F1	F2	F3	F4	F5	F6
NOM	tetrád’										
ACC	tetrád										
GEN	tetrád							i			
LOC	tetrád								i		
DAT	tetrád									i	
INS	tetrád									ju	

Declension III

	xNP	REF	CLASS	FEM	#	F1	F2	F3	F4	F5	F6
NOM	žen			a							
ACC	žen			u							
GEN	žen			y							
LOC	žen			e							
DAT	žen			e							
INS	žen			oj							

	xNP	REF	CLASS	FEM	#	F1	F2	F3	F4	F5	F6
NOM	tetrád’					Ø					
ACC	tetrád					Ø					
GEN	tetrád					i					
LOC	tetrád					i					
DAT	tetrád					i					
INS	tetrád					ju					

Declension III

	xNP	REF	CLASS	FEM	#	F1	F2	F3	F4	F5	F6
NOM	žen			a							
ACC	žen			u							
GEN	žen			y							
LOC	žen			e							
DAT	žen			e							
INS	žen			oj							

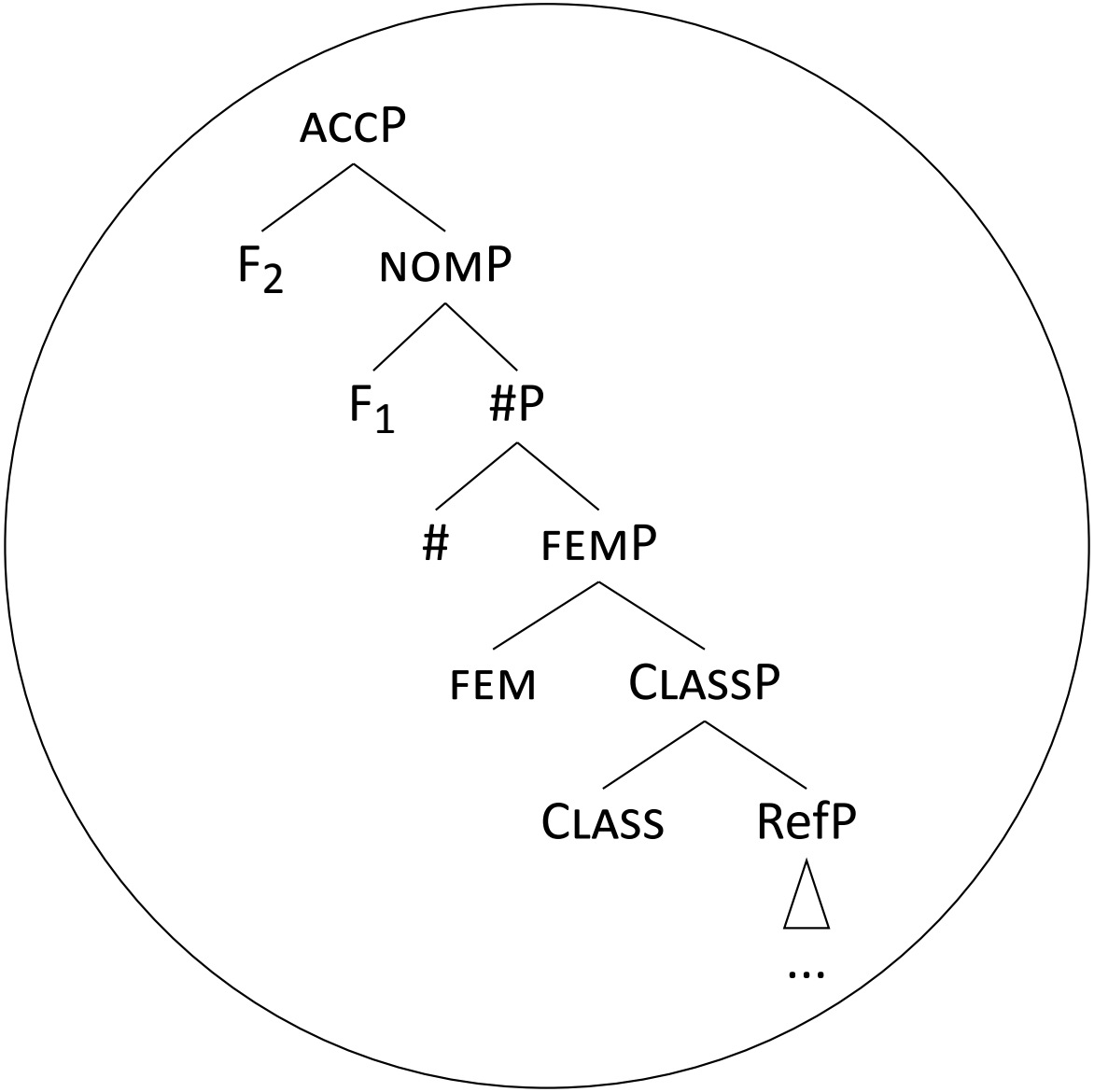
	xNP	REF	CLASS	FEM	#	F1	F2	F3	F4	F5	F6
NOM	tetrád’					Ø					
ACC	tetrád					Ø					
GEN	tetrád					i					
LOC	tetrád					i					
DAT	tetrád					i					
INS	tetrád					ju					

Declension III

	xNP	REF	CLASS	FEM	#	F1	F2	F3	F4	F5	F6
NOM	žen			a							
ACC	žen			u							
GEN	žen			y							
LOC	žen			e							
DAT	žen			e							
INS	žen			oj							

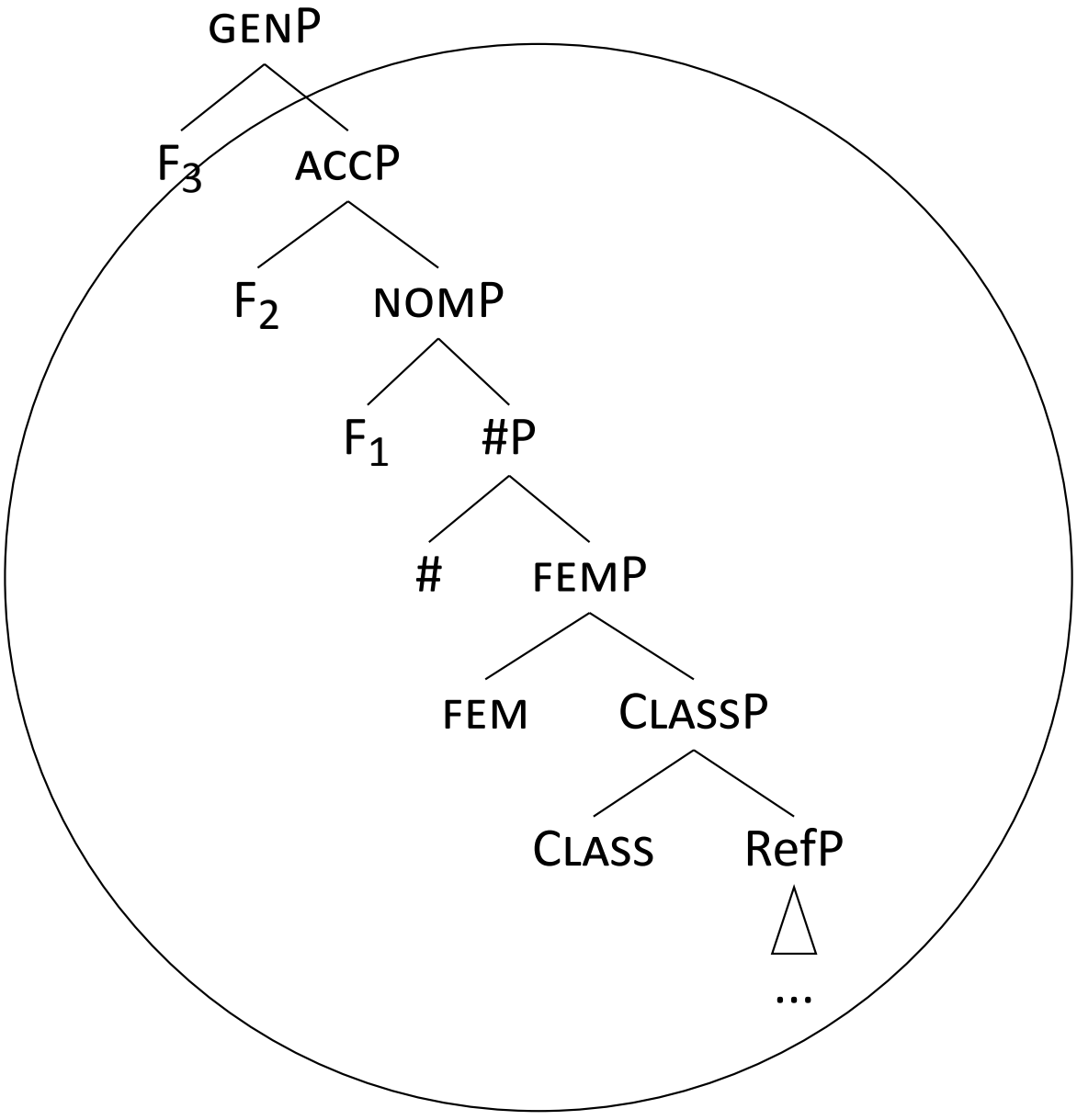
	xNP	REF	CLASS	FEM	#	F1	F2	F3	F4	F5	F6
NOM	tetrád’				Ø						
ACC	tetrád				Ø						
GEN	tetrád				i						
LOC	tetrád				i						
DAT	tetrád				i						
INS	tetrád				ju						

Declension III



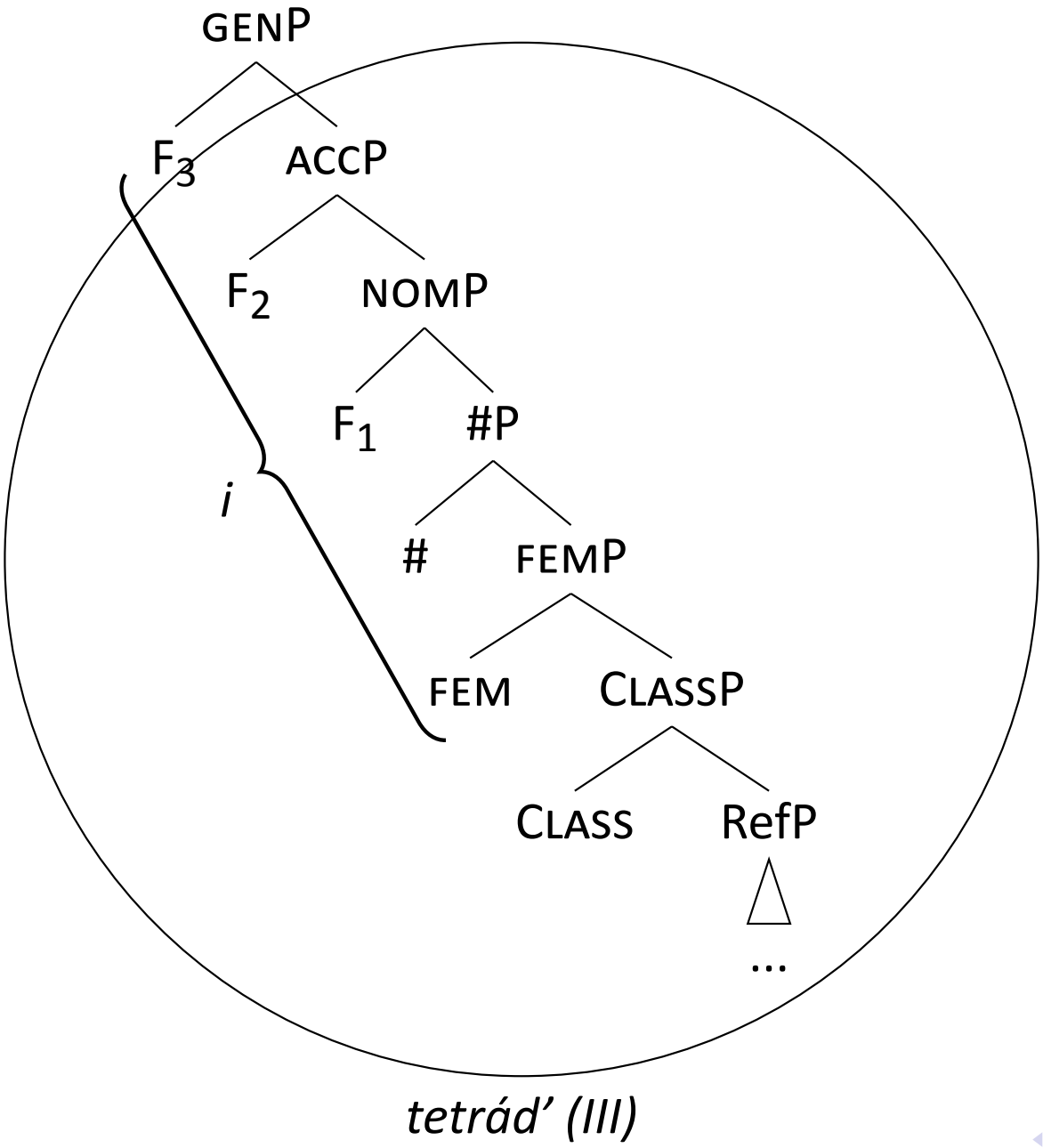
tetrád' (III)

Declension III

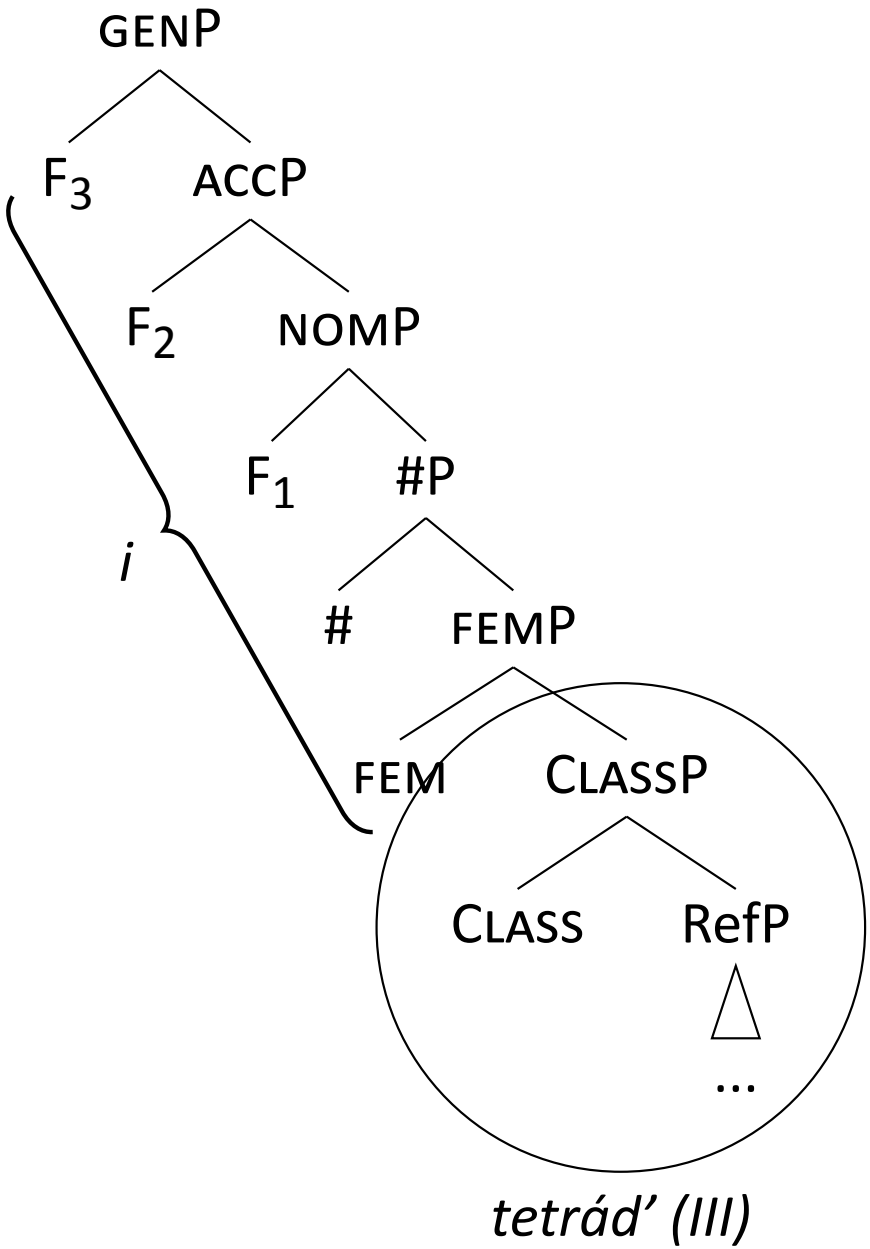


tetrád' (III)

Declension III



Backtracking (Starke 2018; Vanden Wyngaerd et al. 2020)



Declension III

	xNP	REF	CLASS	FEM	#	F1	F2	F3	F4	F5	F6
NOM	žen			a							
ACC	žen			u							
GEN	žen			y							
LOC	žen			e							
DAT	žen			e							
INS	žen			oj							

	xNP	REF	CLASS	FEM	#	F1	F2	F3	F4	F5	F6
NOM	tetráď										
ACC	tetráď										
GEN	tetráď					i					
LOC	tetráď					i					
DAT	tetráď					i					
INS	tetráď					ju					

Declension IV

(18) Declensions and genders for inanimates (Corbett 1982)

a. I → masculine
b. II → feminine
c. III → feminine (15 exceptions)
d. IV → neuter

Declension IV

Table: The non-feminine declensions (Timberlake 2004)

	factory I (MASC)	place IV (NEUT)
NOM	zavód-Ø	mést-o
ACC	zavód-Ø	mést-o
GEN	zavód-a	mést-a
LOC	zavód-e	mést-e
DAT	zavód-u	mést-u
INS	zavód-om	mést-om

Declension IV

	xNP	REF	CLASS	#	F1	F2	F3	F4	F5	F6
NOM	mest		o							
ACC	mest		o							
GEN	mest		a							
LOC	mest		e							
DAT	mest		u							
INS	mest		om							
	xNP	REF	CLASS	#	F1	F2	F3	F4	F5	F6

Declension IV

	xNP	REF	CLASS	#	F1	F2	F3	F4	F5	F6
NOM	mest		o							
ACC	mest		o							
GEN	mest		a							
LOC	mest		e							
DAT	mest		u							
INS	mest		om							

	xNP	REF	CLASS	#	F1	F2	F3	F4	F5	F6
NOM	zavód									
ACC	zavód									

Declension IV

	xNP	REF	CLASS	#	F1	F2	F3	F4	F5	F6
NOM	mest		o							
ACC	mest		o							
GEN	mest		a							
LOC	mest		e							
DAT	mest		u							
INS	mest		om							

	xNP	REF	CLASS	#	F1	F2	F3	F4	F5	F6
NOM	zavód									
ACC	zavód									
GEN	zavód		a							
LOC	zavód		e							
DAT	zavód		u							
INS	zavód		om							

A thought experiment

A thought experiment

	xNP	REF	CLASS	FEM	#	F1	F2	F3	F4	F5	F6
NOM	žen			a							
ACC	žen				u						
GEN	žen					y					
LOC	žen						e				
DAT	žen							e			
INS	žen								oj		

	xNP	REF	CLASS	FEM	#	F1	F2	F3	F4	F5	F6
NOM	tetráď										
ACC	tetráď										
GEN	tetráď					i					
LOC	tetráď						i				
DAT	tetráď							i			
INS	tetráď								ju		

	xNP	REF	CLASS	#	F1	F2	F3	F4	F5	F6
NOM	mest		o							
ACC	mest			o						
GEN	mest				a					
LOC	mest					e				
DAT	mest						u			
INS	mest							om		

A thought experiment

	xNP	REF	CLASS	FEM	#	F1	F2	F3	F4	F5	F6
NOM	žen			a							
ACC	žen			u							
GEN	žen			y							
LOC	žen			e							
DAT	žen			e							
INS	žen			oj							

	xNP	REF	CLASS	FEM	#	F1	F2	F3	F4	F5	F6
NOM	tetráď										
ACC	tetráď										
GEN	tetráď			i							
LOC	tetráď			i							
DAT	tetráď			i							
INS	tetráď			ju							

	xNP	REF	CLASS	#	F1	F2	F3	F4	F5	F6
NOM	mest		o							
ACC	mest		o							
GEN	mest		a							
LOC	mest		e							
DAT	mest		u							
INS	mest		om							

	xNP	REF	CLASS	FEM	#	F1	F2	F3	F4	F5	F6

A thought experiment

	xNP	REF	CLASS	FEM	#	F1	F2	F3	F4	F5	F6
NOM	žen			a							
ACC	žen			u							
GEN	žen			y							
LOC	žen			e							
DAT	žen			e							
INS	žen			oj							

	xNP	REF	CLASS	FEM	#	F1	F2	F3	F4	F5	F6
NOM	tetráď										
ACC	tetráď										
GEN	tetráď					i					
LOC	tetráď					i					
DAT	tetráď					i					
INS	tetráď					ju					

	xNP	REF	CLASS	#	F1	F2	F3	F4	F5	F6
NOM	mest		o							
ACC	mest		o							
GEN	mest		a							
LOC	mest		e							
DAT	mest		u							
INS	mest		om							

	xNP	REF	CLASS	FEM	#	F1	F2	F3	F4	F5	F6
NOM	X			???							
ACC	X			???							
GEN	X			???							
LOC	X			???							
DAT	X			???							
INS	X			???							

A thought experiment

	xNP	REF	CLASS	FEM	#	F1	F2	F3	F4	F5	F6
NOM	žen					a					
ACC	žen					u					
GEN	žen					y					
LOC	žen					e					
DAT	žen					e					
INS	žen					oj					

	xNP	REF	CLASS	FEM	#	F1	F2	F3	F4	F5	F6
NOM	tetráď										
ACC	tetráď										
GEN	tetráď					i					
LOC	tetráď					i					
DAT	tetráď					i					
INS	tetráď					ju					

	xNP	REF	CLASS	#	F1	F2	F3	F4	F5	F6
NOM	mest		o							
ACC	mest		o							
GEN	mest		a							
LOC	mest		e							
DAT	mest		u							
INS	mest		om							

	xNP	REF	CLASS	FEM	#	F1	F2	F3	F4	F5	F6
NOM	X		o		???						
ACC	X		o		???						
GEN	X		o		???						
LOC	X		o		???						
DAT	X		o		???						
INS	X		o		???						

A thought experiment

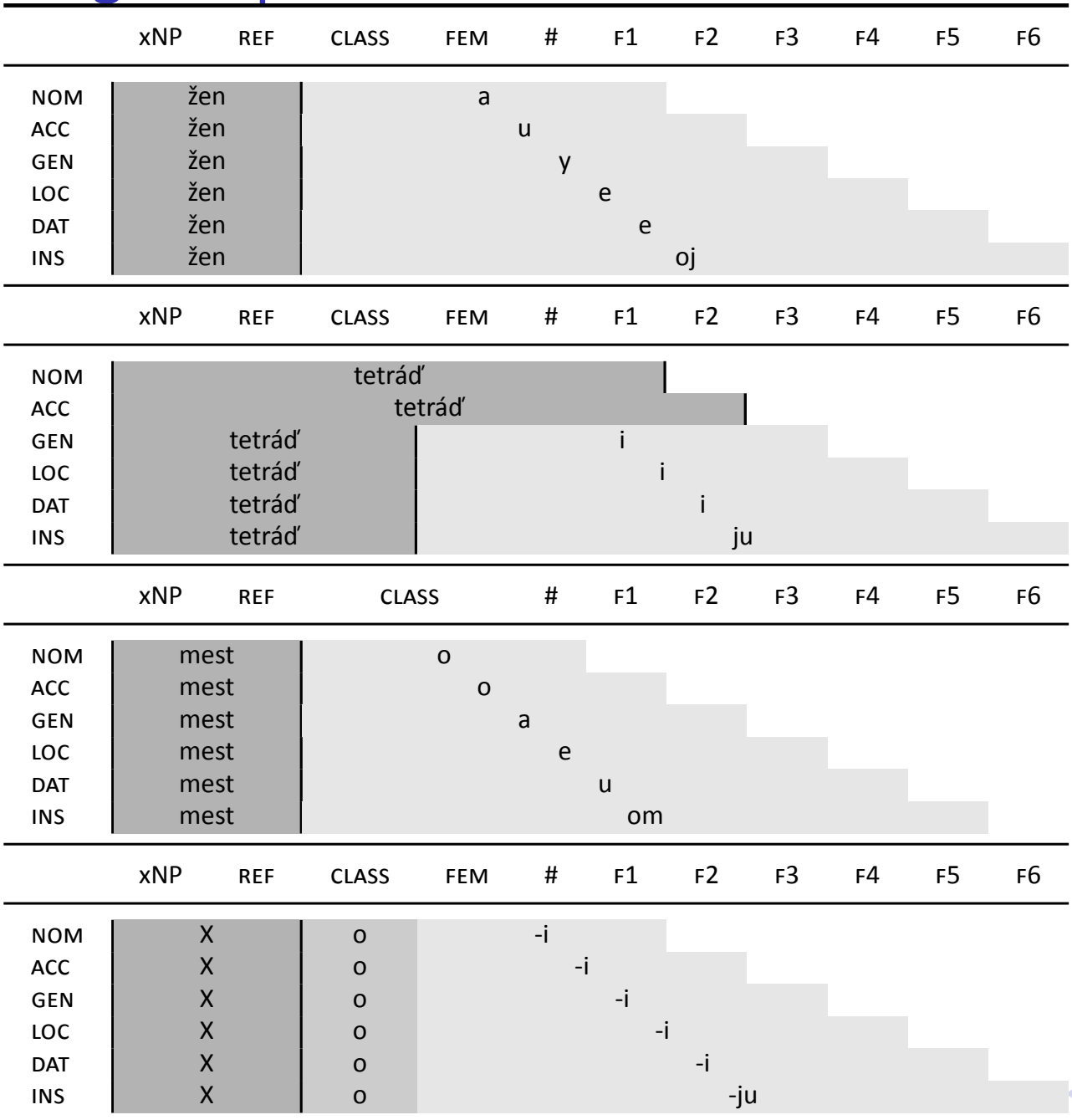


Table: Declension II and a feminine DEM (Timberlake 2004)

	woman FEM.SG	hypothetical FEM.SG	this FEM.SG
NOM	žen-a	wug-o-j	et-a
ACC	žen-u	wug-o-j	et-u
GEN	žen-y	wug-o-j	et-o-j
LOC	žen-e	wug-o-j	et-o-j
DAT	žen-e	wug-o-j	et-o-j
INS	žen-o-j	wug-o-ju	et-o-j(u)

Blevins, James P. 2016. *Word and paradigm morphology*. Oxford: Oxford University Press.

Caha, Pavel. 2009. *The nanosyntax of case*: CASTL, University of Tromsødissertation. `lingbuzz/000956`.

Caha, Pavel, Karen De Clercq & Guido Vanden Wyngaerd. 2019. The fine structure of the comparative. *Studia Linguistica* 73(2). 470–521.

Chomsky, Noam. 2004. Beyond explanatory adequacy. In Adriana Belletti (ed.), *Structures and beyond* (The cartography of syntactic structures 3), 104–131. Oxford: Oxford University Press.

Corbett, Greville G. 1982. Gender in Russian: An account of gender specification and its relationship to declension. *Russian Linguistics* 6. 197–232.

Harley, Heidi & Elizabeth Ritter. 2002. Person and number in pronouns: A feature-geometric analysis. *Language* 78(3). 482–526.

Haspelmath, Martin. 2007. Pre-established categories don't exist: Consequences for language description and typology. *Linguistic typology* 11(1). 119–132.

McCreight, Katherine & Catherine V. Chvany. 1991. Geometric representation of paradigms in a modular theory of grammar. In Frans Plank (ed.), *Paradigms: The economy of inflection*, 91–112. Berlin, New York: Mouton de Gruyter.

Müller, Gereon. 2003. A Distributed Morphology approach to syncretism in Russian noun inflection. In Olga Arnaudova, Wayles Brown, Maria-Luisa Rivero & Danijela Stojanovic (eds.), *Formal Approaches to Slavic Linguistics 12: The Ottawa meeting*, 353–373. Ann Arbor, Mich.: Michigan Slavic Publications.

Starke, Michal. 2009. Nanosyntax. A short primer to a new approach to language. In Peter Svenonius, Gillian Ramchand, Michal Starke & Tarald Taraldsen (eds.), *Nordlyd 36: Special issue on Nanosyntax*, 1–6. Tromsø: University of Tromsø. `lingbuzz/001230`.

Starke, Michal. 2018. Complex left branches, spellout, and prefixes. In Lena Baunaz, Karen De Clercq, Liliane Haegeman & Eric Lander (eds.), *Exploring nanosyntax*, 239–249. Oxford: Oxford University Press.

Stockall, Linnaea & Alec Marantz. 2006. A single route, full decomposition model of morphological complexity: MEG evidence. *The mental lexicon* 1(1). 85–123.

Timberlake, Alan. 2004. *A reference grammar of Russian*. Cambridge: Cambridge University Press.

Vanden Wyngaerd, Guido, Michal Starke, Karen De Clercq & Pavel Caha. 2020. How to be positive. *Glossa: a journal of general linguistics* 5(1). 23.