# Semantic maps

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dat-all-loc

numerals

How does this help

An important footnote on ‘singular’

Tripartite systems

Split systems I: Gender/Class

Conclusions

Appendix Adding case

(1) Japanese (Takamine 2010: 55,57)

a. Taro-ga tomodach-**ni** hon-o ageta.
Taro-NOM friend-DAT book-ACC gave
'Taro gave a book to his friend.' Recipient

b. Kodomotachi-wa futatu-no kooen-**ni** itta.
children-TOP two.cl-GEN park-ALL went
'The children went to two parks.' Goal

c. Akiyama & Akiyama (2002: 51)
Ginza-wa Tokyo-**ni** arimasu.
Ginza-TOP Tokyo-LOC is
'Ginza is in Tokyo.' Location

(2) Pite Saami (Wilbur 2014: 86-7,90)

a. vadda Jåssjå-**j** aj
give.IMP Josh-DAT too
'Give (one) to Josh, too!' Recipient

b. da vuodja bijla-jn Ornvika-**j**
now drive.3PL car.COM Ornvika-ALL
'Now one drives to Ornvika by car.' Goal

c. vágge-**n** Sálvo-jåhkkå =I
valley-LOC Sálvo-creek.NOM.SG is
'Sálvo Creek is in the valley.' Location

(3) Chol (Vázquez Álvarez 2011: 281-2)

a. mi k-mäñ-ø ts'ak **cha'añ** k-papaj
IMPF 1ST-buy-3RD medicin for my-father
'I buy medicin for my father.' Recipient

b. tyi majliy-o' **tyi** Jolsibakil
PERF go-3.PL PREP Jolsibakil
'They went to Jolsibakil.' Goal

c. käläx=ix kixtyañuj **tyi** Mexikuj
many=already people PREP Mexico
'Many people are in Mexico' Location

(4) The syncretism patterns summed up

| | DATIVE | ALLATIVE | LOCATIVE |
|---|---|---|---|
| Japanese | | | |
| Pite Saami | | | |
| Chol | | | |
| NOT ATTESTED | A | B | A |

(5) Macedonian allative: DAT-LOC-N

a. Mu go dal podarokot **na** sina i
him.textscdat it.ACC gave present.DEF DAT son her
'He gave the present to her son.' (Tomič 2006: p.78)
Recipient

b. Odam **na** **kaj** parkot.
I-go DAT LOC park
'I am going to the park.' (Pantcheva 2011: 36) Goal

c. **Kaj** parkot sum.
LOC park.DEF am
'I am at the park.' (Pantcheva 2011: 36) Location

(6) Malayalam allative: N-LOC-DAT (Asher & Kumari 1997: 107,113)

a. Hanipha eni-**kk**ə ii pustakan tannu
Hanifa I-DAT this book gave
'Hanifa gave me this book.' Recipient

b. kiḷihaḷ kunʈʈ-**il-eekk**ə parannu pookunnu
birds nest-LOC-DAT fly-PP goPRES
'The birds fly to their nests.' Goal

c. Viiʈʈ-**il** aarokke uɳʈə
house-LOC who all be-PRES
'Who are there at home?' Location

(7) Meaning decomposition

a. $\textsc{dat} = [\quad \textsc{dat}]$

b. $\textsc{all} = [\textsc{loc},\ \textsc{dat}]$

c. $\textsc{loc} = [\textsc{loc}\quad ]$

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a. $\textsc{dat} = [\quad \textsc{dat}]$

b. $\textsc{all} = [\textsc{loc}, \textsc{dat}]$

c. $\textsc{loc} = [\textsc{loc} \quad ]$

(8) The syncretism patterns to be derived

| | DATIVE [B] | ALLATIVE [A,B] | LOCATIVE [A] |
|---|---|---|---|
| Japanese | *-ni* | | |
| Pite Saami | *-j* | | *-n* |
| Chol | *cha'añ* | *tyi* | |
| NOT ATTESTED | A | B | A |

(9) *ni* ⇔ [LOC,DAT]

(10) The syncretism patterns to be derived

| | DATIVE [DAT] | ALLATIVE [LOC,DAT] | LOCATIVE [LOC] |
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(11) *-n* wins in competition (it is more specific)

| | DATIVE [DAT] | ALLATIVE [LOC,DAT] | LOCATIVE [LOC] |
|---|---|---|---|
| *-n* ⇔ $[_K$ LOC] | | | |
| *-j* ⇔ $[_K$ LOC,DAT] | | | |
| AFTER COMPETITION | *-j* | *-j* | *-n* |

(12) *cha'añ* wins in competition (it is more specific)

| | DATIVE [DAT] | ALLATIVE [LOC,DAT] | LOCATIVE [LOC] |
|---|---|---|---|
| *cha'añ* ⇔ $[_K$ DAT] | | | |
| *tyi* ⇔ $[_K$ LOC,DAT] | | | |
| AFTER COMPETITION | *cha'añ* | *tyi* | *tyi* |

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# The basic facts

(13) English

a. one boy
b. two boy-s
c. *two boy

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(13) English

a. one boy
b. two boy-s
c. *two boy

(14) Turkish

a. bir çocuk
   one boy(sg)
b. iki çocuk
   two boy(sg)
c. *iki çocuk-lar
   two boy-PL

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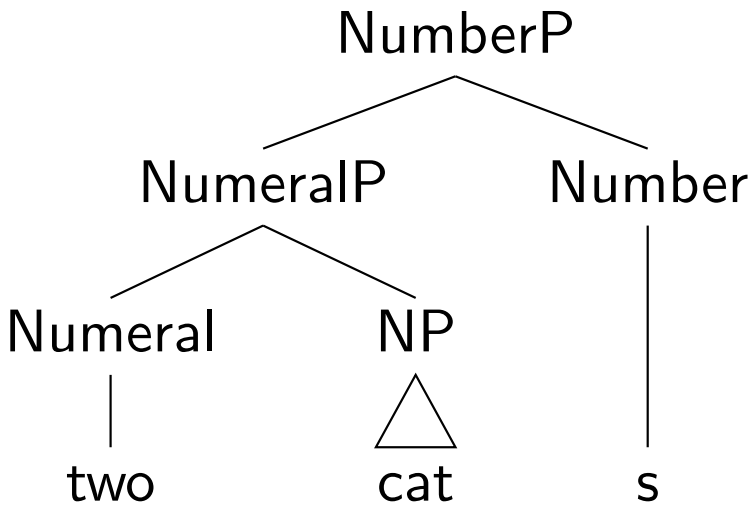

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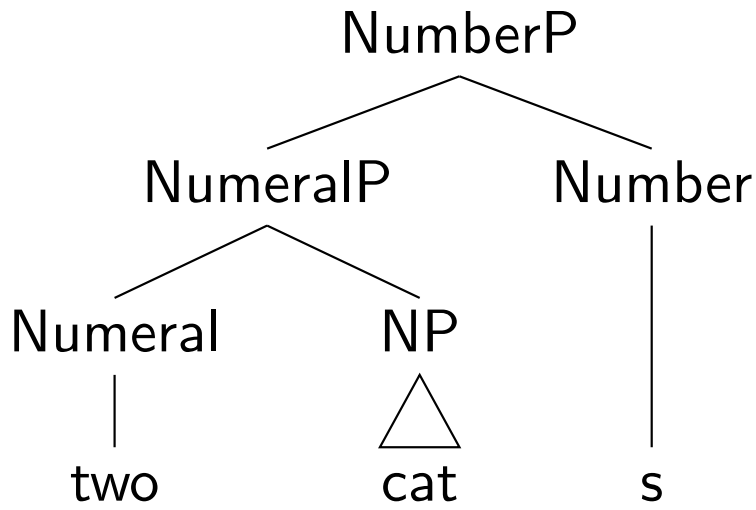


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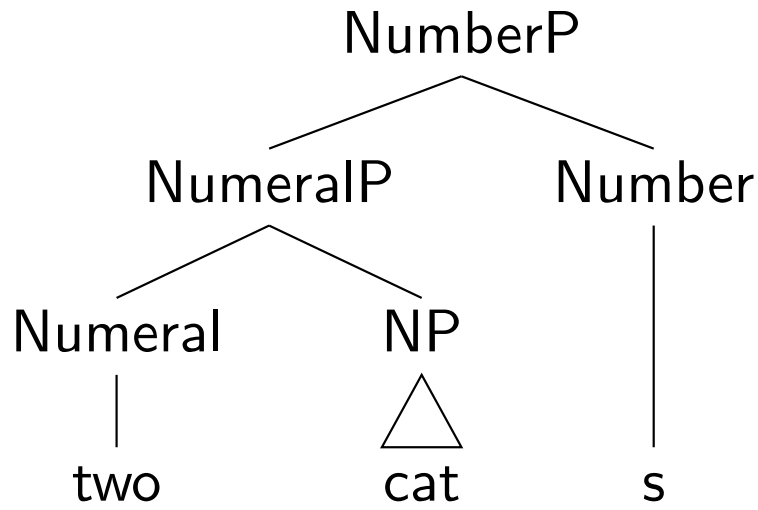


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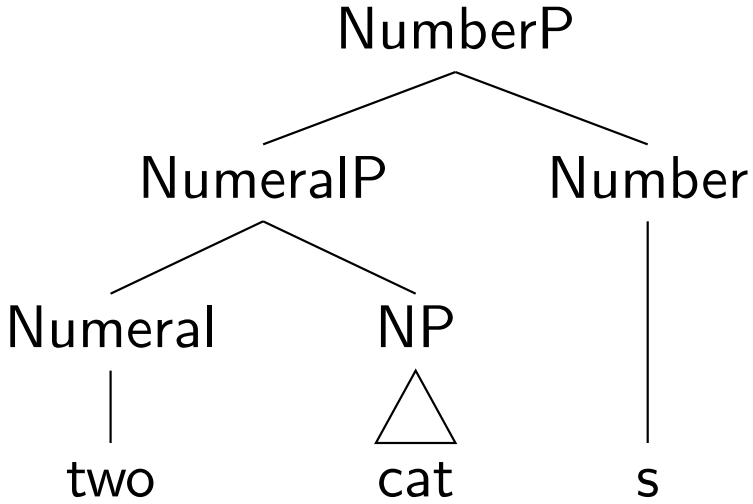


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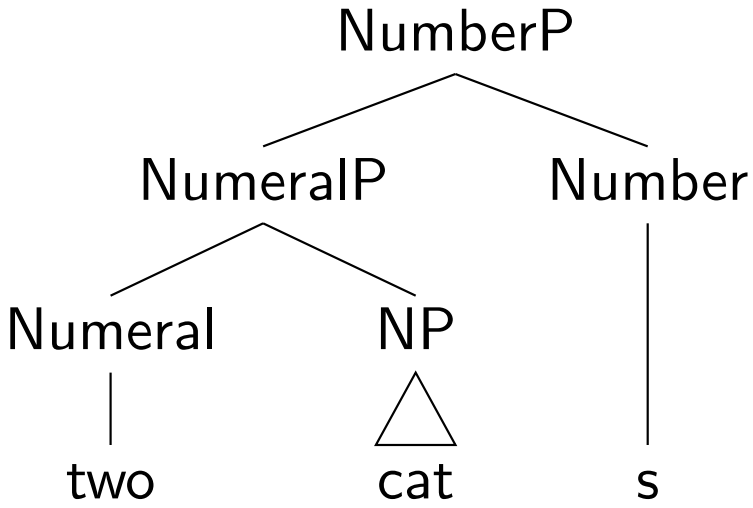


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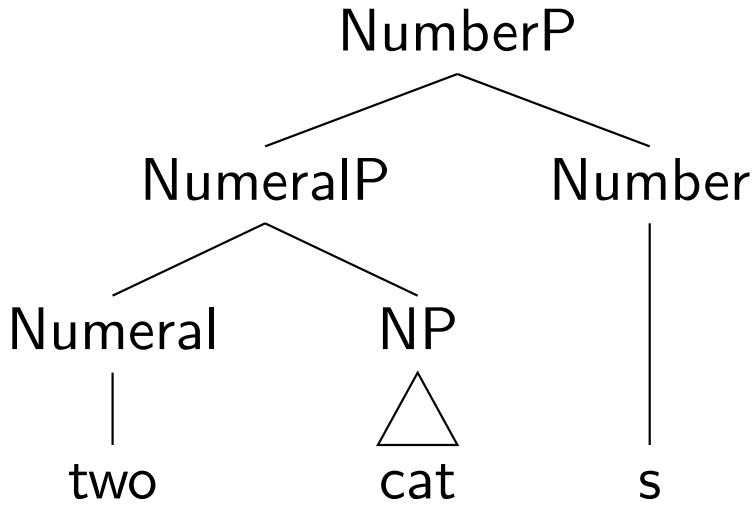


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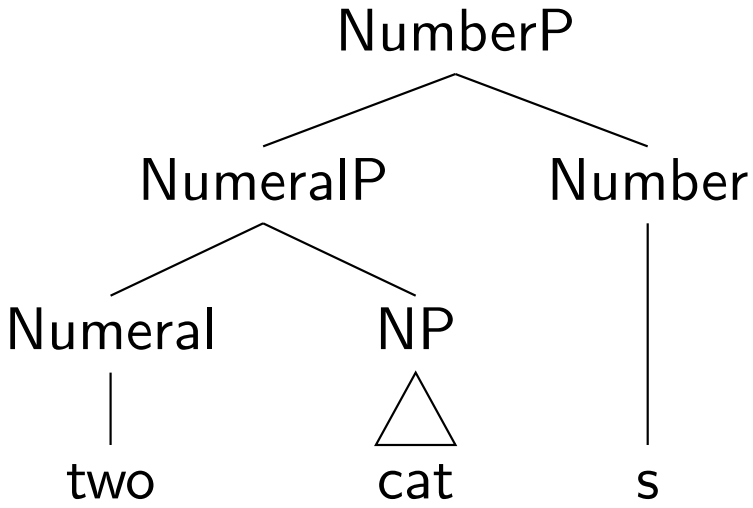


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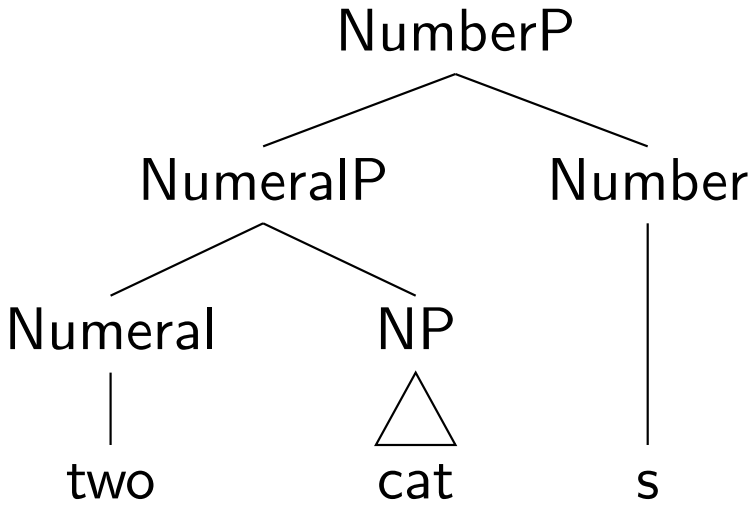


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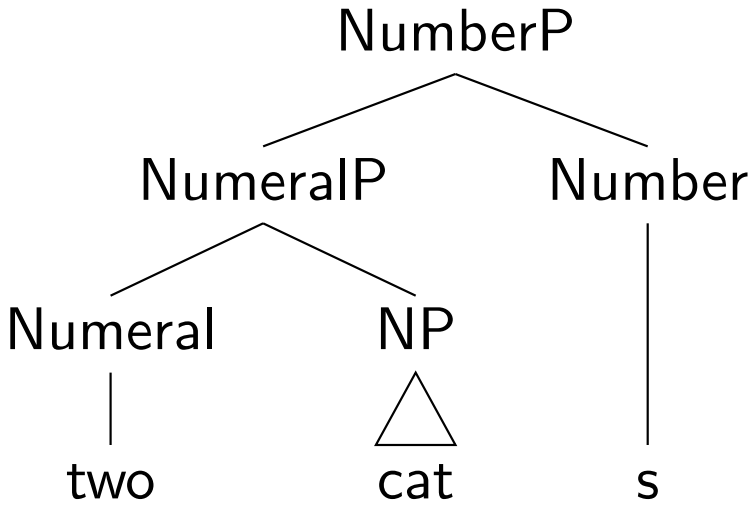


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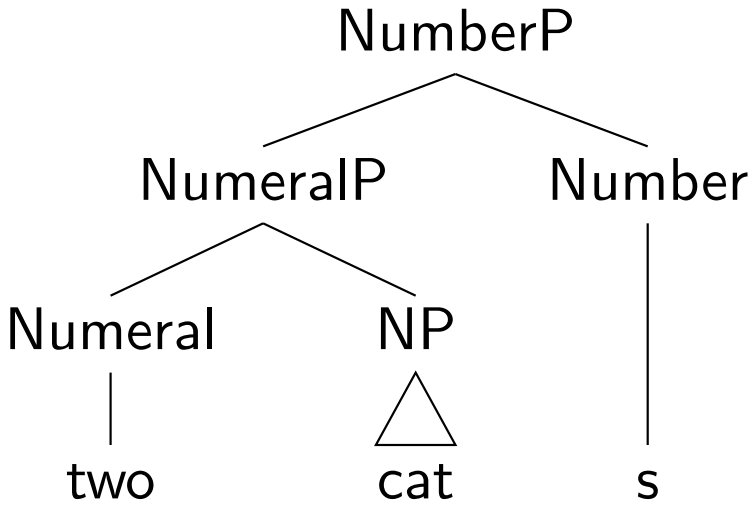


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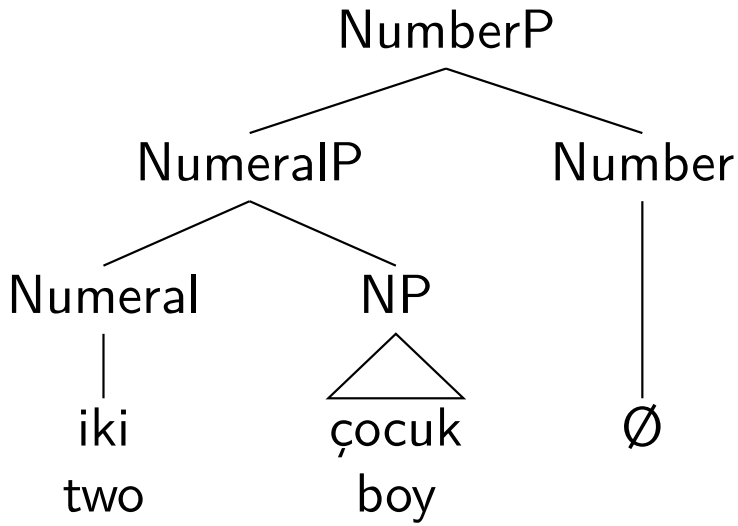


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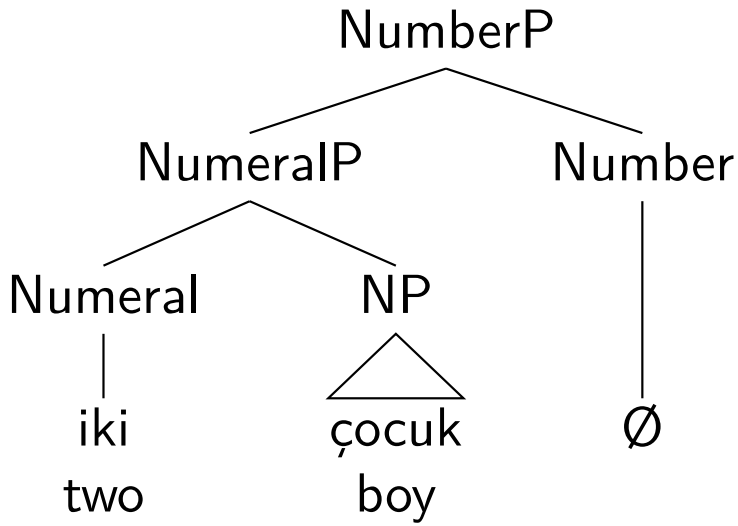


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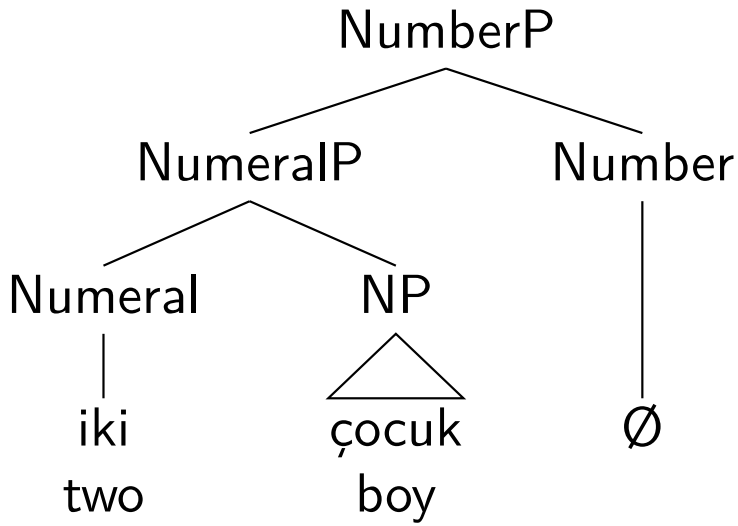


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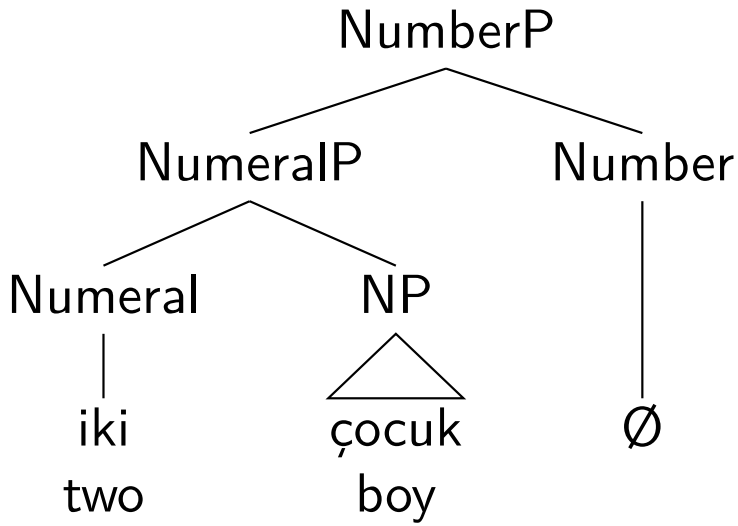


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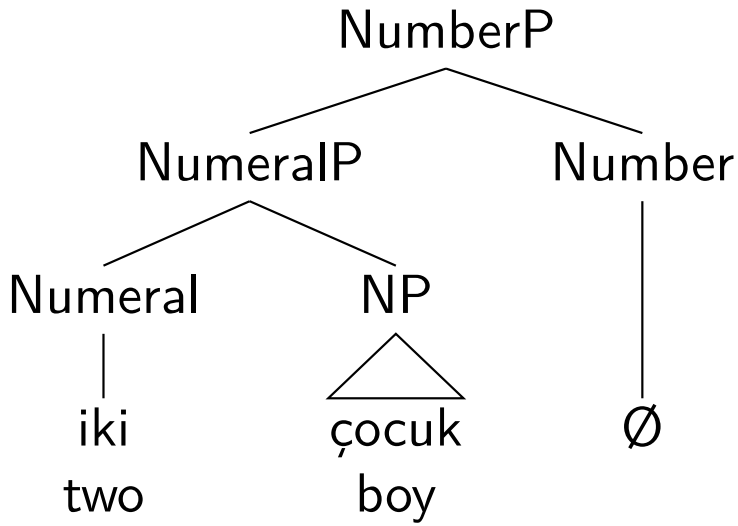


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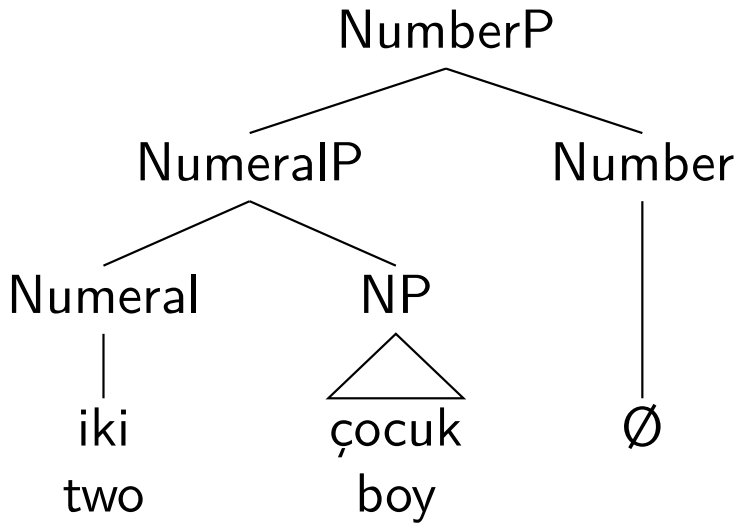


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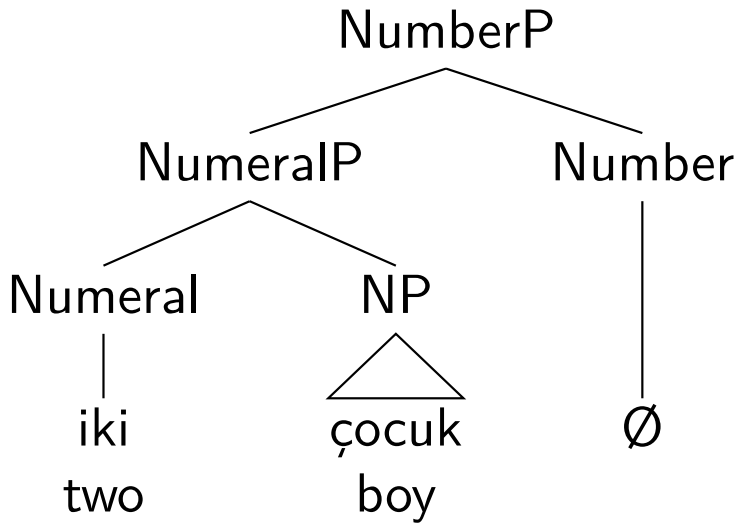


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# Split system: gender

(23) Estonian Swedish (Ionin & Matushansky 2018: 108-9)

a. tri mann
three man.SG
'three men'

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- difficult to see how one should extend the system in Martí (2020)
- Bale et al. (2010): masculine/feminine nouns denote something else.

# Split systems: case

(24) South Saami paradigm fragment (Bergsland 1946: 263, 264)

| | house | two houses | houses |
|---|---|---|---|
| NOM | goåtie | g<ekt'ə **goåtieh** | **goåtieh** |
| GEN | **goåtien** | g<ekt'ən **goåtien** | goåtiej |
| ILL | **goåtan** | g<ekt'ən **goåtan** | goåt'əjdə |
| INE | **goåt'əsn** | g<ekt'əńə **goåt'əsn** | goåt'ə(j)ńə |
| ELA | **goåt'əst'ə** | g<ekt'ərə **goåt'əst'ə** | goåtəjsťə |
| COM | **goåťə(j)ńə** | g<ekt'əńə **goåťə(j)ńə** | (goåtiej gujmie) |

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- For the case-based split, I find it hard to extend the account by Bale et al. (2010).

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- Numerals do not combine with either the singular or the plural.

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- The NP denotation is the same across languages and genders
- The singular and plural mean the same
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- They combine with a special number: the counting number.

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(25)
a. $[\![\text{singular}]\!] = \{ \text{a, b, c} \}$
b. $[\![\text{counting number}]\!] = \{ \text{a, b, c, ab, ac, bc, abc} \}$
c. $[\![\text{plural}]\!] = \{ \text{ab, ac, bc, abc} \}$

- Whenever the counting number looks identical either to the singular or plural, this is because of syncretism

(26) English pronouns

| | SG | PL |
|---|---|---|
| 1ST | *I* | *we* |
| 2ND | *you* | |

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# How does this help

(27) Patterns of syncretism in Estonian Swe

| | SG | COUNTING | PLURAL |
|---|---|---|---|
| masculine | A | A | B |
| feminine | A | B | B |

# How does this help

(27) Patterns of syncretism in Estonian Swe

| | SG | COUNTING | PLURAL |
|---|---|---|---|
| masculine | A | A | B |
| feminine | A | B | B |

(28) Patterns of syncretism in South Saami

| | SG | COUNTING | PLURAL |
|---|---|---|---|
| oblique | A | A | B |
| nominative | A | B | B |

# How does this help

(27) Patterns of syncretism in Estonian Swe

| | SG | COUNTING | PLURAL |
|---|---|---|---|
| masculine | A | A | B |
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(28) Patterns of syncretism in South Saami

| | SG | COUNTING | PLURAL |
|---|---|---|---|
| oblique | A | A | B |
| nominative | A | B | B |

(29) Patterns of syncretism in Turkish vs. English

| | SG | COUNTING | PLURAL |
|---|---|---|---|
| Turkish | A | A | B |
| English | A | B | B |

# A preview

(30) a. English: ABB

# A preview

(30) a. English: ABB
b. Turkish: AAB

# A preview

(30) a. English: ABB
b. Turkish: AAB
c. North Saami: ABB, AAB

# A preview

(30)
a. English: ABB
b. Turkish: AAB
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d. ...

# A preview

(30)
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- Can all three numbers be different? (yes)

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- Can they all be the same? (yes)

# A preview

(30)
a. English: ABB
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c. North Saami: ABB, AAB
d. ...

- Can all three numbers be different? (yes)
- Can they all be the same? (yes)
- Are there any observable limits/restrictions on what can be syncretic? (yes)

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a. English: ABB
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- Can all three numbers be different? (yes)
- Can they all be the same? (yes)
- Are there any observable limits/restrictions on what can be syncretic? (yes)

(31) In the sequence
SINGULAR – COUNTING – PLURAL
syncretism only targets adjacent regions

# A preview

(30)
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b. Turkish: AAB
c. North Saami: ABB, AAB
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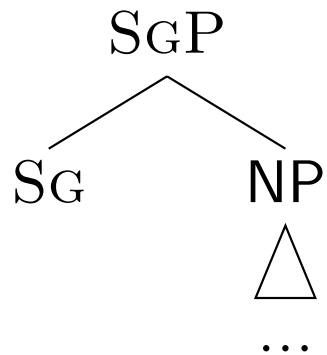
- Can all three numbers be different? (yes)
- Can they all be the same? (yes)
- Are there any observable limits/restrictions on what can be syncretic? (yes)

(31) In the sequence
SINGULAR – COUNTING – PLURAL
syncretism only targets adjacent regions

- A constraint like this places some interesting constraints on grammatical representations (Caha 2009, Bobaljik 2012)

# A standard approach to *ABA



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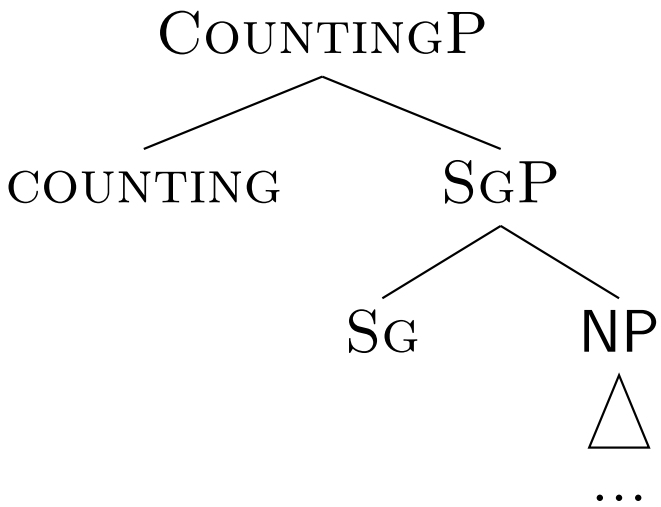

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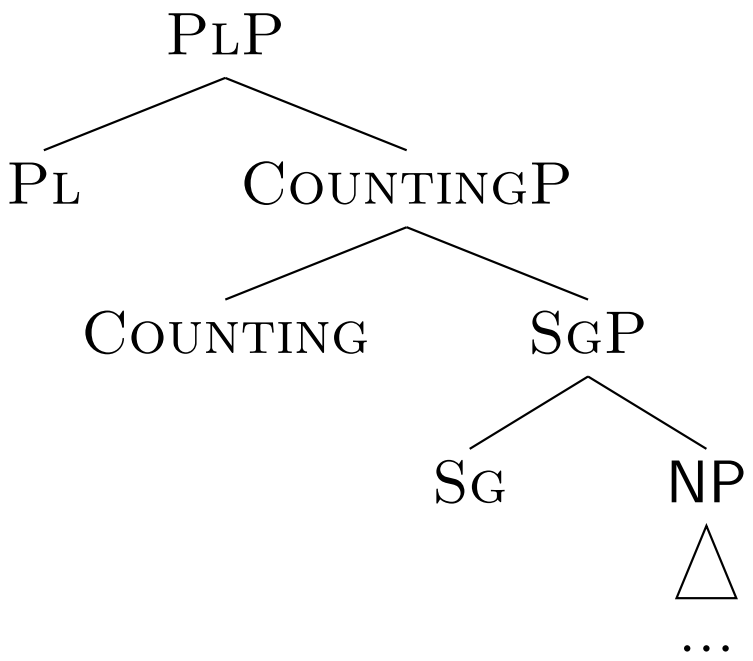

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# An important footnote on ‘singular’

(32) a. one **dog**

# An important footnote on ‘singular’

(32) a. one **dog**
b. There was **dog** on the wall

# An important footnote on ‘singular’

(32) a. one **dog**
b. There was **dog** on the wall
c. one **fence**

# An important footnote on ‘singular’

(32) a. one **dog**
b. There was **dog** on the wall
c. one **fence**
d. a meter of **fence**

(33) Dutch (Fenna Bergsma, p.c.)

a. een (meter) touw-**Ø**
one meter rope
'one (meter of) rope' (sg/mass)

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'two ropes' (counting)

c. Er liggen touw-**en** op de grond.
there lie rope-PL on the ground
'There are (some) ropes on the ground.' (plural)

# An important footnote on 'singular'

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   three cake
   ‘three cakes’ (counting)

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c. kek-**ler**
   cake-PL
   ‘cakes’ (plural)

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   a piece cake
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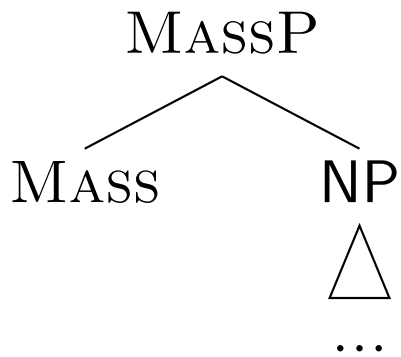

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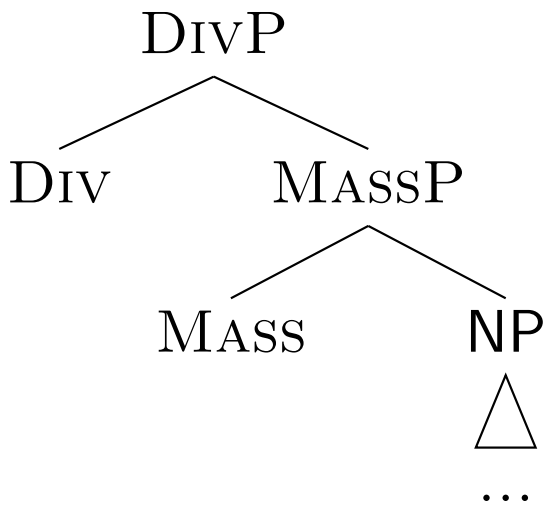

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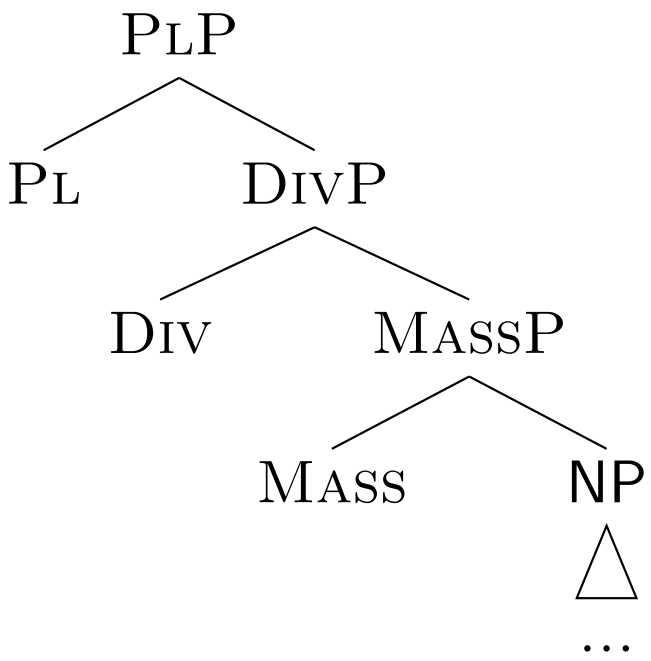

# Finnish

(35) a. Jääkaapissa on greippi.
fridge.INE is grapefruit.NOM
'There is a grapefruit in the refrigerator.'

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fridge.INE is milk.PART
'There is milk in the refrigerator.'

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stack.NOM sand-SG.PART
'a stack of sand' (pseudo-partitive)

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three.NOM house-SG.PART
'three houses' (counting)

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'three houses' (counting)

e. talo-**t**
house-NOM.PL
'houses' (plural)

# Czech paucal pattern: AAA for neuters and feminines

(36) a. litr piv-a / vodk-y
liter beer-MASS / vodka-MASS
'a liter of beer/vodka' (mass)

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two beer-COUNT / vodka-COUNT
'two glasses of beer/vodka' (count)

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a. litr piv-a / vodk-y
liter beer-MASS / vodka-MASS
'a liter of beer/vodka' (mass)

b. dvě piv-a / vodk-y
two beer-COUNT / vodka-COUNT
'two glasses of beer/vodka' (count)

c. Na stole stály piv-a / vodk-y
on table stood beer-PL / vodka-PL
'There stood some glasses with beer/vodka on the table.' (plural)

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on table stood beer-PL / vodka-PL
'There stood some glasses with beer/vodka on the table.' (plural)

(37) Na stole stálo jedno piv-o
on table stood one beer-SG
'There was one beer on the table.' (sg)

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liter beer-MASS / vodka-MASS
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'two glasses of beer/vodka' (count)

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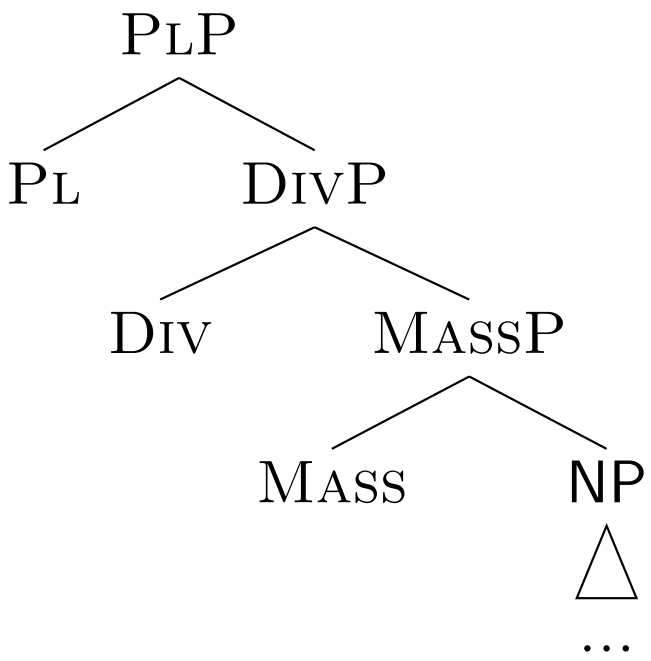
(37) Na stole stálo jedno piv-o
on table stood one beer-SG
'There was one beer on the table.' (sg)

(38) Na stole stála jedna vodk-a
on table stood one vodka-SG
'There was one (glass of) vodka on the table.' (sg)

# An important footnote on ‘singular’



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# Tripartite systems

- Digor Ossetic, Anatolian variety

| | MASS<br>one bowl water | SINGULAR<br>horse | COUNT<br>ten horses | PLURAL<br>horses |
|---|---|---|---|---|
| NOM | eu khoppa don-**Ø** | bæx-**Ø** | dæs bæx-i | bæx-tæ-**Ø** |
| ACC | eu khoppa don-**Ø** | bæx-**Ø** | dæs bæx-i | bæx-tæ-**Ø** |
| GEN | eu khoppa don-**i** | bæx-**i** | dæs bæx-e **-j** | bæx-t **-i** |
| INE | eu khoppa don-**i** | bæx-**i** | dæs bæx-em-**i** | bæx-t **-i** |
| DAT | eu khoppa don-**æn** | bæx-**æn** | dæs bæx-em-**æn** | bæx-t **-æn** |
| ABL | eu khoppa don-**æj** | bæx-**æj** | dæs bæx-em-**æj** | bæx-t **-æj** |
| ADE | eu khoppa don-**bæl** | bæx-**bæl** | dæs bæx-e **-bæl** | bæx-tæ-**bæl** |
| ALL | eu khoppa don-**mæ** | bæx-**mæ** | dæs bæx-e **-mæ** | bæx-tæ-**mæ** |

# Tripartite systems

- Digor Ossetic, Anatolian variety

| | MASS<br>one bowl water | SINGULAR<br>horse | COUNT<br>ten horses | PLURAL<br>horses |
|---|---|---|---|---|
| NOM | eu khoppa don-Ø-**Ø** | bæx-Ø-**Ø** | dæs bæx-i | bæx-tæ-**Ø** |
| ACC | eu khoppa don-Ø-**Ø** | bæx-Ø-**Ø** | dæs bæx-i | bæx-tæ-**Ø** |
| GEN | eu khoppa don-Ø-**i** | bæx-Ø-**i** | dæs bæx-e **-j** | bæx-t **-i** |
| INE | eu khoppa don-Ø-**i** | bæx-Ø-**i** | dæs bæx-em-**i** | bæx-t **-i** |
| DAT | eu khoppa don-Ø-**æn** | bæx-Ø-**æn** | dæs bæx-em-**æn** | bæx-t **-æn** |
| ABL | eu khoppa don-Ø-**æj** | bæx-Ø-**æj** | dæs bæx-em-**æj** | bæx-t **-æj** |
| ADE | eu khoppa don-Ø-**bæl** | bæx-Ø-**bæl** | dæs bæx-e **-bæl** | bæx-tæ-**bæ** |
| ALL | eu khoppa don-Ø-**mæ** | bæx-Ø-**mæ** | dæs bæx-e **-mæ** | bæx-tæ-**mæ** |

# Tripartite systems

(39) Niuean

a. Ko [*e lupo* Ø *kava haau*], ne inu e Sione.
PRED ABS bottle beer your PST drink ERG Sione
'Your bottle of beer Sione drank.'

# Tripartite systems

(39) Niuean

a. Ko [*e* *lupo* Ø *kava haau*], ne inu e Sione.
PRED ABS bottle beer your PST drink ERG Sione
'Your bottle of beer Sione drank.'

b. Ne faka-moui [he ekekafo] [*e* Ø *tagata na*.]
PST CAUS-live ERG doctor ABS SG person that
'The doctor saved that person.'

# Tripartite systems

(39) Niuean

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c. Ne faka-momoui [he ekekafo] [*e* ***tau*** *tagata na*.]
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# Tripartite systems

(39) Niuean

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c. Ne faka-momoui [he ekekafo] [*e* ***tau*** *tagata na*.]
PST CAUS-live.PL ERG doctor ABS PL person that
'The doctor saved those people.'

d. Ne kitia [e au] [(*e*) *tokolima* ***e*** *tagata*.]
PST see ERG I ABS five DIV person
'I saw five people.'

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Some basic ideas

# Bulgarian masculines: a tripartite system

(40) Bulgarian

a. edin keks-Ø
one cake

# Bulgarian masculines: a tripartite system

(40) Bulgarian

a. edin keks-Ø
one cake

b. edno parche keks-Ø
one piece cake

# Bulgarian masculines: a tripartite system

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a. edin keks-Ø
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b. edno parche keks-Ø
one piece cake

c. dva keks-a
two cake-COUNT

# Bulgarian masculines: a tripartite system

(40) Bulgarian

a. edin keks-Ø
one cake

b. edno parche keks-Ø
one piece cake

c. dva keks-a
two cake-COUNT

d. Na masata ima keks-ove
on table-the has cake-s
'There are cakes on the table'

# Bulgarian neuters (feminines): ABB

(41) Bulgarian

a. edin meter vəzhe-**Ø**
one meter rope

# Bulgarian neuters (feminines): ABB

(41) Bulgarian

a. edin meter vəzhe-**Ø**
one meter rope

b. edno vəzhe-**Ø**
one rope

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one rope

c. dve vəzhe-ta
two rope-COUNT

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(41) Bulgarian

a. edin meter vəzhe-Ø
one meter rope

b. edno vəzhe-Ø
one rope

c. dve vəzhe-ta
two rope-COUNT

d. Na masata ima vəzhe-ta
on table-the has rope-s
'There are (some) ropes on the table'

# Split systems I: Gender/Class

(42) Patterns of syncretism in Bulgarian

| | SG/MASS | COUNTING | PLURAL |
|---|---|---|---|
| masculine | -Ø | -a | -ove |
| neuter | -Ø | -ta | -ta |

# split systems I: Serbian

| | NOM.SG. | PSEUDO-PART | COUNTING | PLURAL | |
|---|---|---|---|---|---|
| new, MASC. | *nov-Ø* | nov-og(a) | nov-a | nov-i | ABC |

# split systems I: Serbian

| | NOM.SG. | PSEUDO-PART | COUNTING | PLURAL | |
|---|---|---|---|---|---|
| new, MASC. | *nov-Ø* | nov-og(a) | nov-a | nov-i | ABC |
| water, FEM. | *vod-a* | vod-ē | vod-e | vod-e | ABB |

# split systems I: Serbian

| | NOM.SG. | PSEUDO-PART | COUNTING | PLURAL | |
|---|---|---|---|---|---|
| new, MASC. | *nov-Ø* | nov-og(a) | nov-a | nov-i | ABC |
| water, FEM. | *vod-a* | vod-ē | vod-e | vod-e | ABB |
| rope, MASC. | *konopac-Ø* | konopc-a | konopc-a | konopc-i | AAB |

# split systems I: Serbian

| | NOM.SG. | PSEUDO-PART | COUNTING | PLURAL | |
|---|---|---|---|---|---|
| new, MASC. | *nov-Ø* | nov-og(a) | nov-a | nov-i | ABC |
| water, FEM. | *vod-a* | vod-ē | vod-e | vod-e | ABB |
| rope, MASC. | *konopac-Ø* | konopc-a | konopc-a | konopc-i | AAB |
| salt, FEM. | *so-Ø* | sol-i | sol-i | sol-i | AAA |

# split systems I: Serbian

| | NOM.SG. | PSEUDO-PART | COUNTING | PLURAL | |
|---|---|---|---|---|---|
| new, MASC. | *nov-Ø* | nov-og(a) | nov-a | nov-i | ABC |
| water, FEM. | *vod-a* | vod-ē | vod-e | vod-e | ABB |
| rope, MASC. | *konopac-Ø* | konopc-a | konopc-a | konopc-i | AAB |
| salt, FEM. | *so-Ø* | sol-i | sol-i | sol-i | AAA |
| not attested | — | A | B | A | *ABA |

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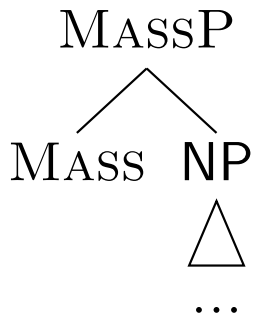
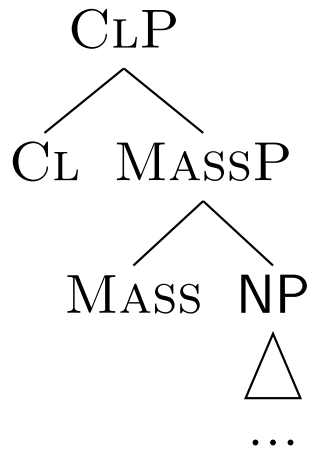
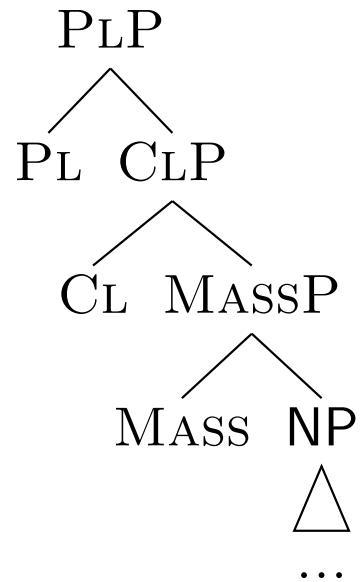
(43) Mass




(44) counting




(45) plural



(46) In the sequence

MASS – COUNTING – PLURAL

syncretism only targets adjacent regions

(46) In the sequence

MASS – COUNTING – PLURAL

syncretism only targets adjacent regions

(47) a. English: ABB

(46) In the sequence

MASS – COUNTING – PLURAL

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(47) a. English: ABB

b. Turkish AAB

(46) In the sequence

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syncretism only targets adjacent regions

(47) a. English: ABB

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c. Ossetic, Niuean: ABC

(46) In the sequence

MASS – COUNTING – PLURAL

syncretism only targets adjacent regions

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b. Turkish AAB

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d. Bulgarian: ABC, ABB

(46) In the sequence

MASS – COUNTING – PLURAL

syncretism only targets adjacent regions

(47)
a. English: ABB
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c. Ossetic, Niuean: ABC
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e. Finnish: AAB (mass)

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- All these patterns of marking follow naturally in a Borer-style architecture

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- The general lesson: since forms can be ambiguous, it is generally 'dangerous' to assign meaning to forms

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- All these patterns of marking follow naturally in a Borer-style architecture
- The general lesson: since forms can be ambiguous, it is generally 'dangerous' to assign meaning to forms
- Meanings are assigned to abstract structure-building blocks.

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syncretism only targets adjacent regions

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e. Finnish: AAB (mass)
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- All these patterns of marking follow naturally in a Borer-style architecture
- The general lesson: since forms can be ambiguous, it is generally 'dangerous' to assign meaning to forms
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- Forms have meaning inasmuch they spell out the meaning-bearing elements (features)

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e. Finnish: AAB (mass)
f. Serbian: ABC, AAB, ABB, AAA

- All these patterns of marking follow naturally in a Borer-style architecture
- The general lesson: since forms can be ambiguous, it is generally 'dangerous' to assign meaning to forms
- Meanings are assigned to abstract structure-building blocks.
- Forms have meaning inasmuch they spell out the meaning-bearing elements (features)
- But since one form may realize multiple different feature sets, it may have different meanings

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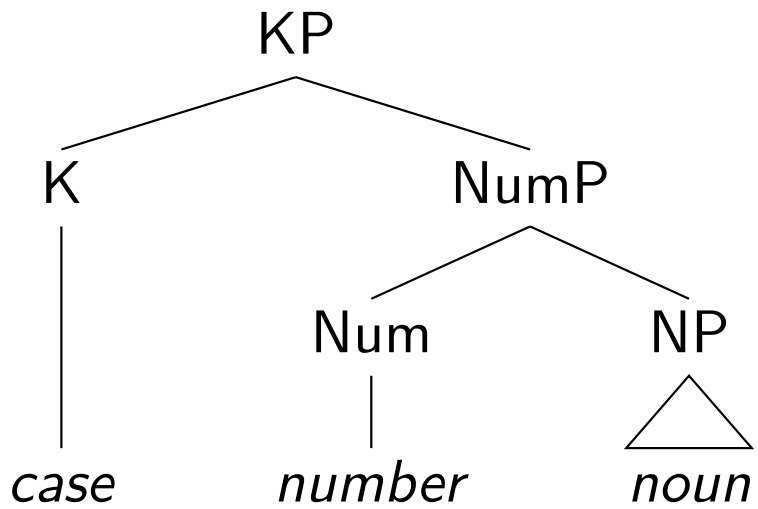
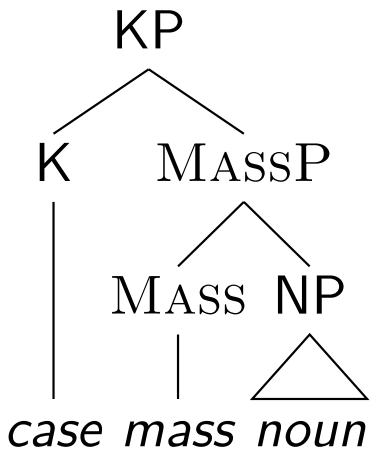
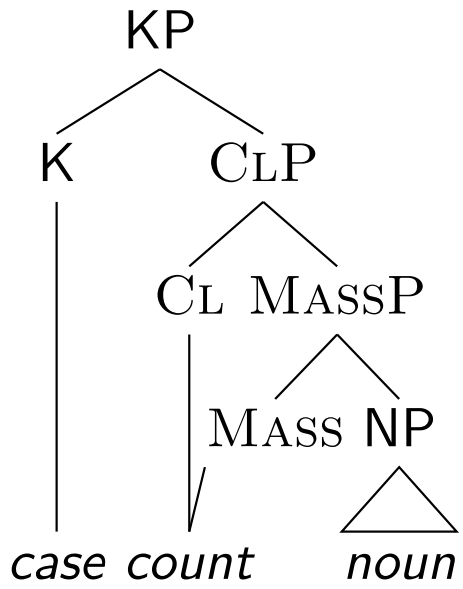
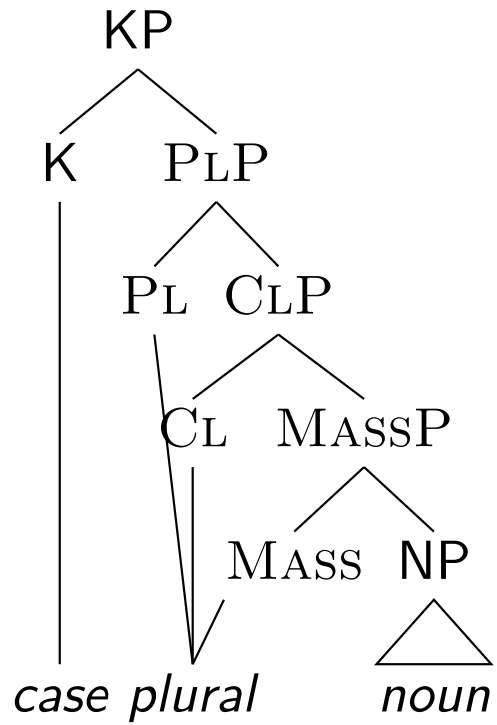



KP
K
MassP
Mass
NP
case
mass
noun


KP
K
ClP
Cl
MassP
Mass
NP
case
count
noun


KP
K
PlP
Pl
ClP
Cl
MassP
Mass
NP
case
plural
noun

# Update I

(49)

| | SINGULAR | PLURAL |
|---|---|---|
| case: NOM | ... | ... |
| case: ACC | ... | ... |
| case: ... | ... | ... |

# Update I

(49)

| | SINGULAR | PLURAL |
|---|---|---|
| case: NOM | ... | ... |
| case: ACC | ... | ... |
| case: ... | ... | ... |

(50)

| | SINGULAR | COUNTING | PLURAL |
|---|---|---|---|
| case: NOM | ... | ... | ... |
| case: ACC | ... | ... | ... |
| case: ... | ... | ... | ... |

# Split systems: case

(51) South Saami paradigm fragment (Bergsland 1946: 263, 264)

| | house | two houses | houses |
|---|---|---|---|
| NOM | goåtie | g<ekt'ə **goåtieh** | **goåtieh** |
| GEN | **goåtien** | g<ekt'ən **goåtien** | goåtiej |
| ILL | **goåtan** | g<ekt'ən **goåtan** | goåt'əjdə |
| INE | **goåt'əsn** | g<ekt'əńə **goåt'əsn** | goåt'ə(j)ńə |
| ELA | **goåt'əst'ə** | g<ekt'ərə **goåt'əst'ə** | goåtəjsťə |
| COM | **goåťə(j)ńə** | g<ekt'əńə **goåťə(j)ńə** | (goåtiej gujmie) |

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- Recall that this is a challenge for the semantic-parameter accounts (Martí 2020, Bale et al. 2010)

# Bailyn & Nevins (2008)

# Bailyn & Nevins (2008)

| | NOM.SG. | PSEUDO-PART | COUNTING | PLURAL | |
|---|---|---|---|---|---|
| new, MASC. | *nov-Ø* | nov-og(a) | nov-a | nov-i | ABC |
| rope, MASC. | *konopac-Ø* | konopc-a | konopc-a | konopc-i | AAB |
| water, FEM. | *vod-a* | vod-ē | vod-e | vod-e | ABB |
| salt, FEM. | *so-Ø* | sol-i | sol-i | sol-i | AAA |
| not attested | — | A | B | A | *ABA |

# Update II

(52)

| | SINGULAR | COUNTING | PLURAL |
|---|---|---|---|
| case: NOM | ... | ... | ... |
| case: ACC | ... | ... | ... |
| case: ... | ... | ... | ... |

# Update II

(52)

| | SINGULAR | COUNTING | PLURAL |
|---|---|---|---|
| case: NOM | ... | ... | ... |
| case: ACC | ... | ... | ... |
| case: ... | ... | ... | ... |

(53)

| | SINGULAR | MASS | COUNT | PLURAL |
|---|---|---|---|---|
| case: NOM | ... | ... | ... | ... |
| case: ACC | ... | ... | ... | ... |
| case: ... | ... | ... | ... | ... |

# North Saami

(54) MASS = SG

a. Máhtes lei okta/golbma gilo biergu
Mattis.loc was one/three kilo meeat.nom.sg
'Mattis had one/three kilo of meat'

# North Saami

(54) MASS = SG

a. Máhtes lei okta/golbma gilo biergu
Mattis.loc was one/three kilo meeat.nom.sg
'Mattis had one/three kilo of meat'

b. Máhtte osttii ovtta/golbma gilo bierggu
Mattis bought one/three kilo meat.acc.sg
'Mattis kjøpte ett/tre kilo kjøtt.'

# North Saami

(54) MASS = SG

a. Máhtes lei okta/golbma gilo biergu
Mattis.loc was one/three kilo meeat.nom.sg
'Mattis had one/three kilo of meat'

b. Máhtte osttii ovtta/golbma gilo bierggu
Mattis bought one/three kilo meat.acc.sg
'Mattis kjøpte ett/tre kilo kjøtt.'

c. Máhtte fierui jáffuid viđa lihtter(a) čáhcái
Mattis mixed flower five liter water.ill.sg
'Mattis rørte melet inn i fem liter vann.'

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(54) MASS = SG

a. Máhtes lei okta/golbma gilo biergu
Mattis.loc was one/three kilo meeat.nom.sg
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b. Máhtte osttii ovtta/golbma gilo bierggu
Mattis bought one/three kilo meat.acc.sg
'Mattis kjøpte ett/tre kilo kjøtt.'

c. Máhtte fierui jáffuid viđa lihtter(a) čáhcái
Mattis mixed flower five liter water.ill.sg
'Mattis rørte melet inn i fem liter vann.'

d. Jáffut galget luvvat viđa lihtter(a) čázis
flower should.be dissolved five liter water.loc.sg
'Melet skal løses opp i fem liter vann.'

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a. Máhtes lei okta/golbma gilo biergu
Mattis.loc was one/three kilo meeat.nom.sg
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flower should.be dissolved five liter water.loc.sg
'Melet skal løses opp i fem liter vann.'

# Appendix Adding case

(55) North Saami COUNTING

a. Ledje logi **bohcco** mat ledje vuodjalan rastá nuori.
it.was ten rein.GEN.SG that was swum across sound
It was ten reindeer that had swum across the sound.

# Appendix Adding case

(55) North Saami COUNTING

a. Ledje logi **bohcco** mat ledje vuodjalan rastá nuori.
it.was ten rein.GEN.SG that was swum across sound
It was ten reindeer that had swum across the sound.

b. Doppe de fallehii logi **bohcco** ain hávális
there so it.attacked ten rein.GEN.SG even at.a.time
There it even attacked ten reindeer at a time.

# Appendix Adding case

(55) North Saami COUNTING

a. Ledje logi **bohcco** mat ledje vuodjalan rastá nuori.
it.was ten rein.GEN.SG that was swum across sound
It was ten reindeer that had swum across the sound.

b. Doppe de fallehii logi **bohcco** ain hávális
there so it.attacked ten rein.GEN.SG even at.a.time
There it even attacked ten reindeer at a time.

c. njeallje logi **bohcco-s**
four ten reindeer-LOC.SG
'four in ten reindeer'

# Appendix Adding case

(56) North Saam *bálggis* ‘path’

| | MASS/SG | COUNT | PLURAL |
|---|---|---|---|
| NOM | *bálggis* | | *balgá-t* |
| ACC | *balgá* | | *balgá-id* |
| GEN | | | |
| ILL | *balgái* | | *balgá-ide* |
| LOC | *balgás* | | *balgá-in* |
| COM | *balgáin* | | *balgá-iguin* |

(57) Finnish (Brattico 2008: 142, Brattico 2011: 1051, Karlsson 2008: 249)

a. kasa hiekka-**a**
stack.NOM sand-SG.PART
'a stack of sand' (pseudo-partitive)

b. kolme talo-**a**
three.NOM house-SG.PART
'three houses' (counting)

c. talo-**t**
house-NOM.PL
'houses' (plural)

(58) Finnish (Norris 2014: 233, Brattico 2011: 1051, Karlsson 2008: 249)

a. litra-ssa maito-**a**
liter-SG.INE milk-SG.PART
'in a liter of milk' (pseudo-partitive)

b. kolme-ssa talo-**ssa**
three.INE house.SG.INE
'in three houses' (counting)

c. talo-**i**-**ssa**
house-PL-INE
'in houses' (plural)

(59) Finnish:

| | MASS | COUNT | PLURAL |
|---|---|---|---|
| NOM | PART.SG | PART.SG | NOM.PL |
| OBL | PART.SG | OBL.SG | OBL.PL |

(59) Finnish:

| | MASS | COUNT | PLURAL |
|---|---|---|---|
| NOM | PART.SG | PART.SG | NOM.PL |
| OBL | PART.SG | OBL.SG | OBL.PL |

(60) North Saami:

| | MASS | COUNT | PLURAL |
|---|---|---|---|
| NOM | NOM.SG | GEN.SG | NOM.PL |
| OBL | OBL.SG | OBL.SG | OBL.PL |

# Russian masculine niuns

(61) Russian, nominative (S. Toldova, p.c.)

a. metr zabor-**a**
meter.NOM fence-GEN.SG
'a meter of fence'

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'a meter of fence'

b. dva zabor-**a**
two.NOM fence-GEN.SG
'two fences'

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(61) Russian, nominative (S. Toldova, p.c.)

a. metr zabor-**a**
meter.NOM fence-GEN.SG
'a meter of fence'

b. dva zabor-**a**
two.NOM fence-GEN.SG
'two fences'

c. zabor-**y**
fence-NOM.PL
'fences'

# Russian masculine nouns

(62) Russian, nominative (S. Toldova, p.c.)

a. metr zabor-**a**
meter.NOM fence-GEN.SG
'a meter of fence'

b. dva zabor-**a**
two.NOM fence-GEN.SG
'two fences'

c. zabor-**y**
fence-NOM.PL
'fences'

# Russian masculine nouns

(63) Russian, instrumental (S. Toldova, p.c.)

a. s metr-om zabor-**a**
with meter-INS fence-GEN
'with a meter of fence'

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(63) Russian, instrumental (S. Toldova, p.c.)

a. s metr-om zabor-**a**
with meter-INS fence-GEN
'with a meter of fence'

b. s dv-umja zabor-**ami**
with two-INS fence-INS.PL
'with two fences'

# Russian masculine nouns

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a. s metr-om zabor-**a**
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'with a meter of fence'

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with two-INS fence-INS.PL
'with two fences'

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'with fences'

# Russian masculine nouns

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'with a meter of fence'

b. s dv-umja zabor-**ami**
with two-INS fence-INS.PL
'with two fences'

c. s zabor-**ami**
with fence-INS.PL
'with fences'

# Summary

(65) Patterns of syncretism in Russian masculines

| | PSEUDO-PART | COUNTING | PLURAL |
|---|---|---|---|
| INS | -a | -ami | -ami |
| NOM | -a | -a | -y |

# Summary

(65) Patterns of syncretism in Russian masculines

| | PSEUDO-PART | COUNTING | PLURAL |
|---|---|---|---|
| INS | -a | -ami | -ami |
| NOM | -a | -a | -y |

(66) Patterns of syncretism in Dutch and Turkish

| | PSEUDO-PART | COUNTING | PLURAL |
|---|---|---|---|
| Dutch | -Ø | -en | -en |
| Turkish | -Ø | -Ø | -ler |

(67) Serbian masculine nouns, nominative (Monika Bader, p.c.)

a. metar konopc-**a**
meter rope-GEN.SG
'a meter of rope'

b. dva konopc-**a**
two rope-NUM
'two ropes'

c. konopc-**i**
rope-NOM.PL
'ropes'

(68) Serbian masculine nouns, instrumental (Monika Bader, p.c.)

a. s metr-om konopc-**a**
with meter-INS.SG rope-GEN.SG
'with a meter of rope'

b. s dva konopc-**a**
with two rope-NUM
'with two ropes'

c. s konopc-**ima**
towards ropes-INS.PL
'with ropes'

(68) Serbian masculine nouns, instrumental (Monika Bader, p.c.)

a. s metr-om konopc-**a**
with meter-INS.SG rope-GEN.SG
'with a meter of rope'

b. s dva konopc-**a**
with two rope-NUM
'with two ropes'

c. s konopc-**ima**
towards ropes-INS.PL
'with ropes'

(69) s dva-ma kamion-**ima**
with two-INS truck-INS.PL
'with two trucks' (instrumental, Hammond 2005: 261)

Masculine nouns

| | MASS COUNT | PLURAL |
|---|---|---|
| NOM | *-a* | *-i* |
| ACC | | *-e* |
| GEN | | *-ā* |
| LOC | | *-ima* |
| DAT | | |
| INS | | |

(70) Serbian (Bošković 2006: 528,525,528)

a. Uzgajač konja je kupio Meri.
breeder horses.GEN is bought Meri
'The horse breeder bought Meri.'

b. On je ovladao zemlj-om.
he is conquered country-INS
'He conquered that country.'

c. *Džokej je ovladao Meri.
jockey is conquered Meri
'The jockey conquered Meri.'

(71) Serbian (Monika Bader, p.c.)[1]

a. Uzgajač konja je kupio dva konja.
breeder horses.GEN is bought two horse.GEN
'The horse breeder bought two horses.'

b. *Džokej je ovladao dva konja.
jockey is conquered two horse.GEN
'The jockey conquered two horses.'

(72) Serbian (a from Bošković 2006: 529, b from Monika Bader, p.c)

a. Džokej je ovladao s(a) Meri.
jockey is conquered with Meri
'The jockey conquered Meri.'

b. Džokej je ovladao sa dva konja.
jockey is conquered with two horse.GEN
'The jockey conquered two horses.'

Serbian

| | MASS COUNT | PLURAL |
|---|---|---|
| NOM | *-a* | *-i* |
| ACC | | *-e* |
| GEN | | *-ā* |
| LOC | | *-ima* |
| DAT | | |
| INS | | |

Russian masculine declension

<table>
<tr><th></th><th>MASS</th><th>COUNT</th><th>PLURAL</th></tr>
<tr><td>NOM</td><td rowspan="6">-a</td><td colspan="2" rowspan="2">-y</td></tr>
<tr><td>ACC</td></tr>
<tr><td>GEN</td><td colspan="2">-ov</td></tr>
<tr><td>LOC</td><td colspan="2">-ax</td></tr>
<tr><td>DAT</td><td colspan="2">-am</td></tr>
<tr><td>INS</td><td colspan="2">-ami</td></tr>
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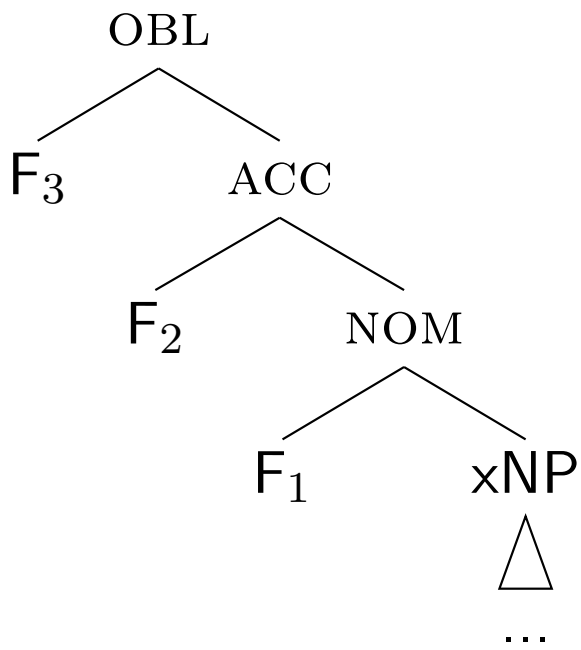
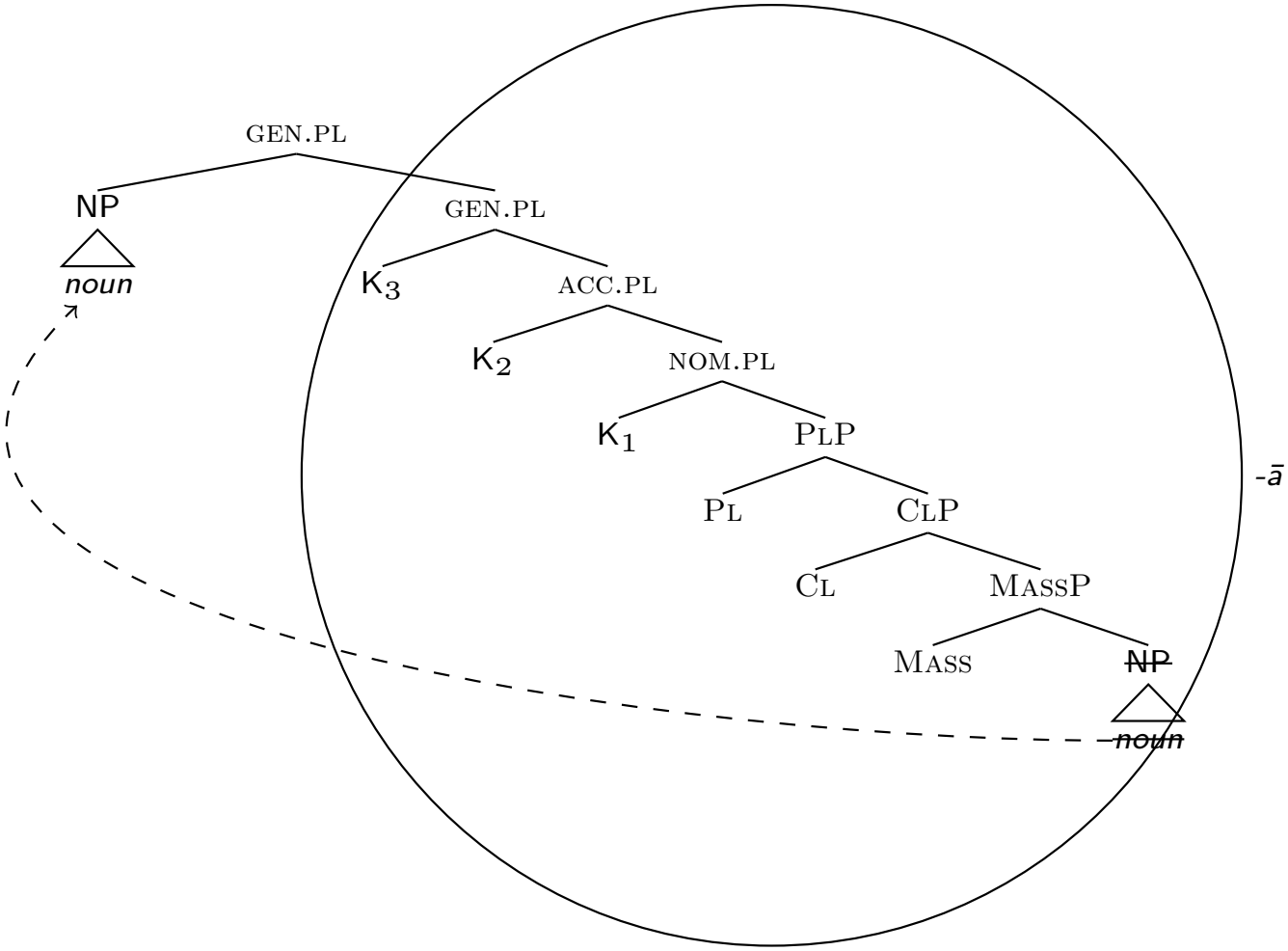
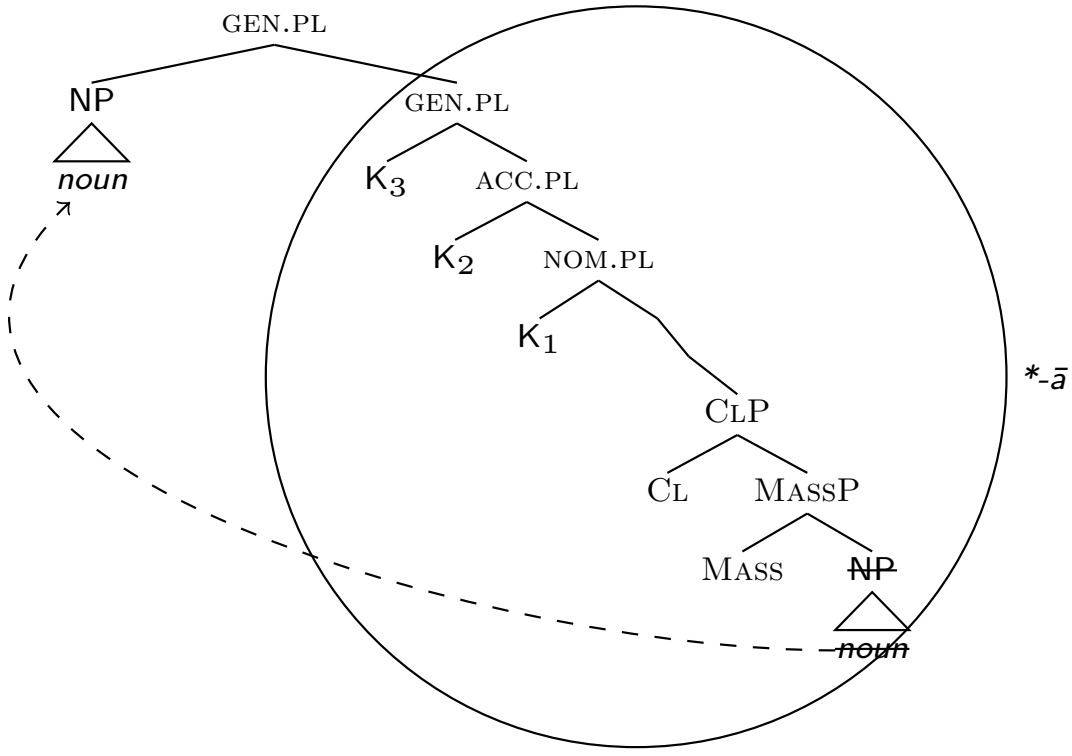





(74)

| | | | | |
|---|---|---|---|---|
| a. | *-ā* | ⇔ | [ GEN [ ACC [ NOM [ PL [ CL [ MASS ] ] ] ] ] ] | |
| b. | *-e* | ⇔ | [ ACC [ NOM [ PL [ CL [ MASS ] ] ] ] ] | |
| c. | *-i* | ⇔ | [ NOM [ PL [ CL [ MASS ] ] ] ] | |




(75)

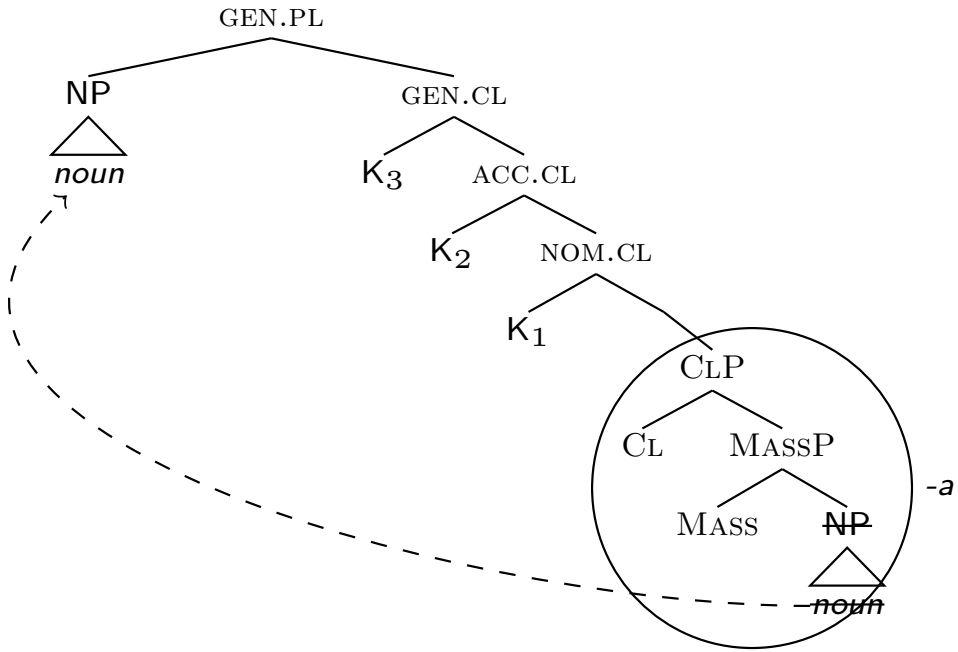
a. *-ā* ⇔ [ GEN [ ACC [ NOM [ PL [ CL [ MASS ] ] ] ] ] ]

b. *-e* ⇔ [ ACC [ NOM [ PL [ CL [ MASS ] ] ] ] ]

c. *-i* ⇔ [ NOM [ PL [ CL [ MASS ] ] ] ]

Serbian

| | M C | P |
|---|---|---|
| NOM | *-a* | *-i* |
| ACC | | *-e* |
| GEN | | *-ā* |
| LOC | | *-ima* |
| DAT | | |
| INS | | |




(76) *a* $\Leftrightarrow$ [ CL [ MASS ] ]

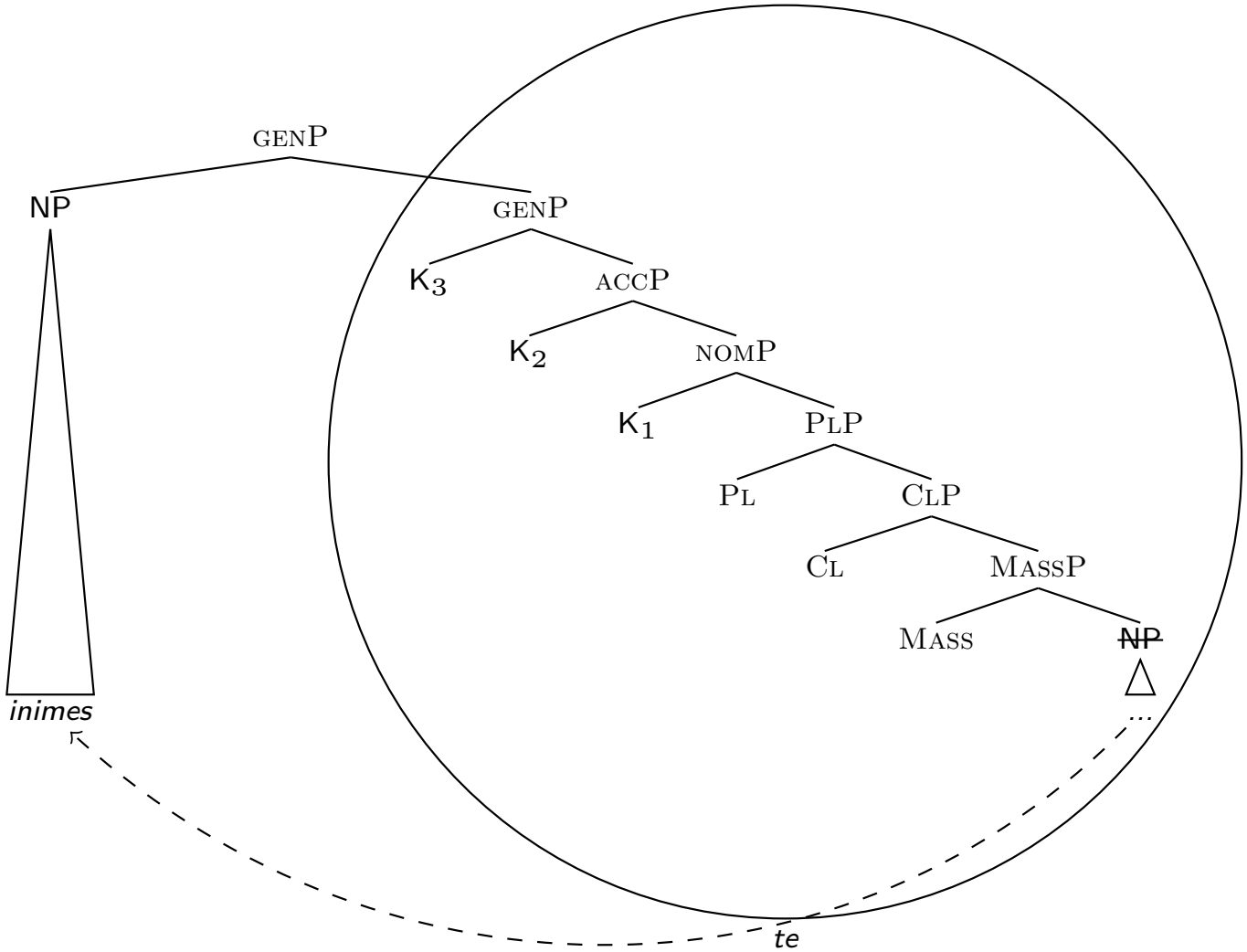
(77) Estonian:

| | PSUDO-PART | COUNTED | PLURAL |
|---|---|---|---|
| NOM | PART.SG | PART.SG | NOM.PL |
| OBL | OBL.SG | OBL.SG | OBL.PL |

(78) Estonian (Norris 2014: 25

| | person, SG. | person, PL. |
|---|---|---|
| NOM | inimene | inimes-ed |
| ACC | inimes-e | inimes-ed |
| GEN | inimes-e | inimes-te |
| PART | inimes-t | inimes-i |
| ILL | inimes-e-**sse** | inimes-te-**sse** |
| INE | inimes-e-**s** | inimes-te-**s** |
| ELA | inimes-e-**st** | inimes-te-**st** |
| ALL | inimes-e-**le** | inimes-te-**le** |
| ADE | inimes-e-**l** | inimes-te-**l** |
| ABL | inimes-e-**lt** | inimes-te-**lt** |
| TRANS | inimes-e-**ks** | inimes-te-**ks** |
| TERM | inimes-e-**ni** | inimes-te-**ni** |
| ESS | inimes-e-**na** | inimes-te-**na** |
| ABE | inimes-e-**ta** | inimes-te-**ta** |
| COM | inimes-e-**ga** | inimes-te-**ga** |

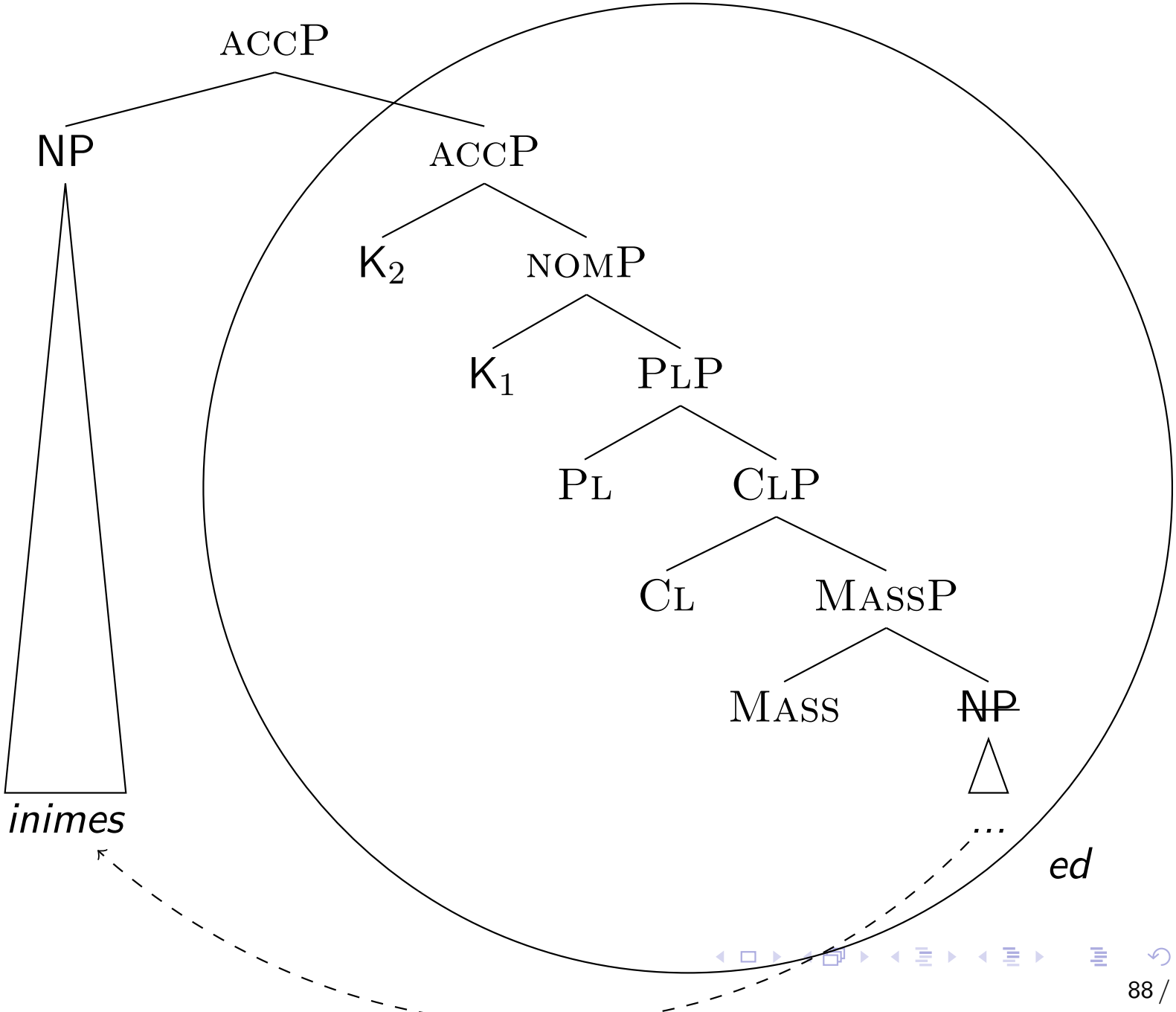
(79)


GENP
NP
GENP
K3
ACCP
K2
NOMP
K1
PLP
PL
CLP
CL
MASSP
MASS
NP
...
inimes
te

(80) a. *te* = [ GEN [ ACC [ NOM [ PL [ CL [ MASS ] ] ] ] ] ]

b. *ed* = [ ACC [ NOM [ PL [ CL [ MASS ] ] ] ] ]

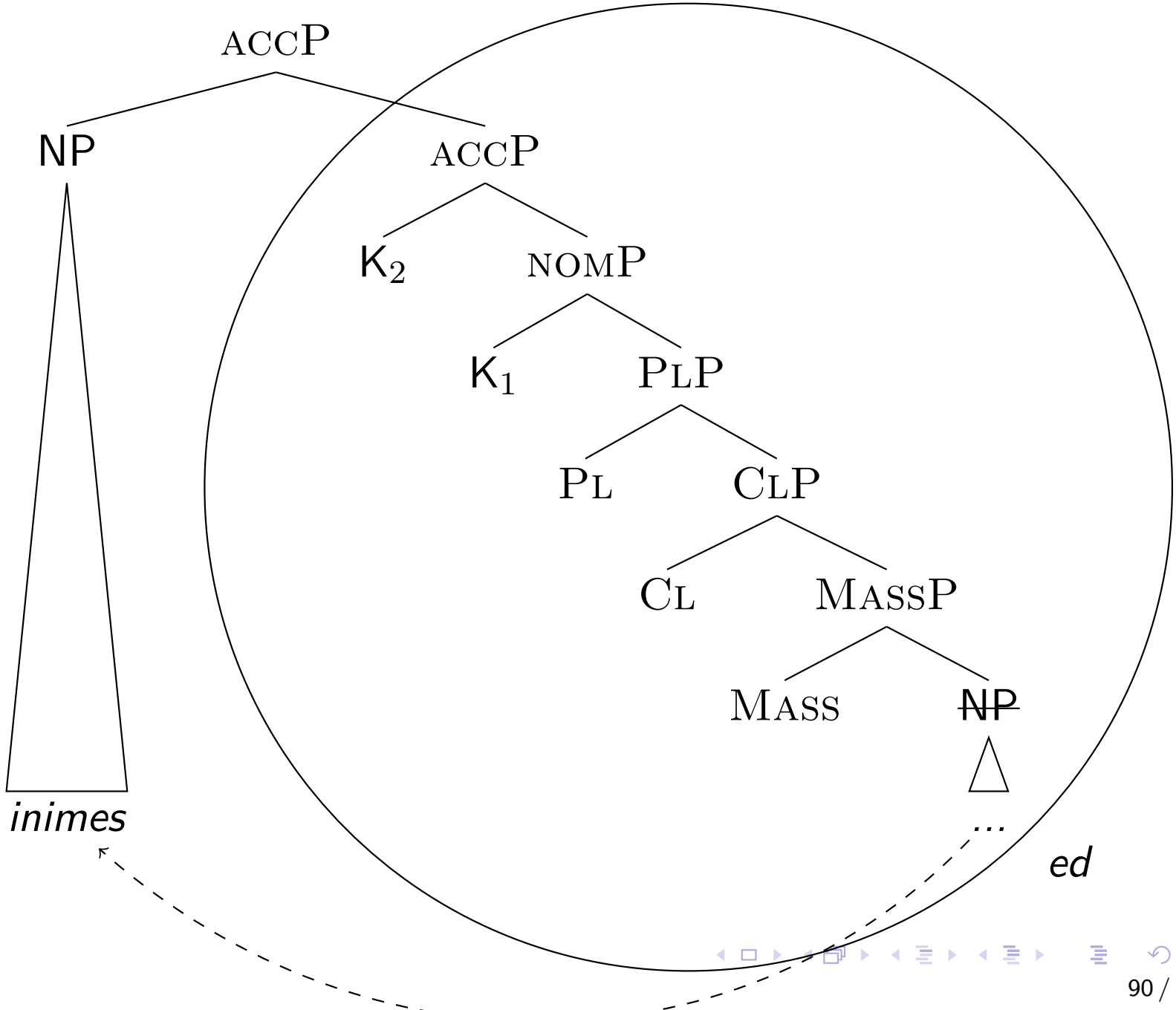
(81)



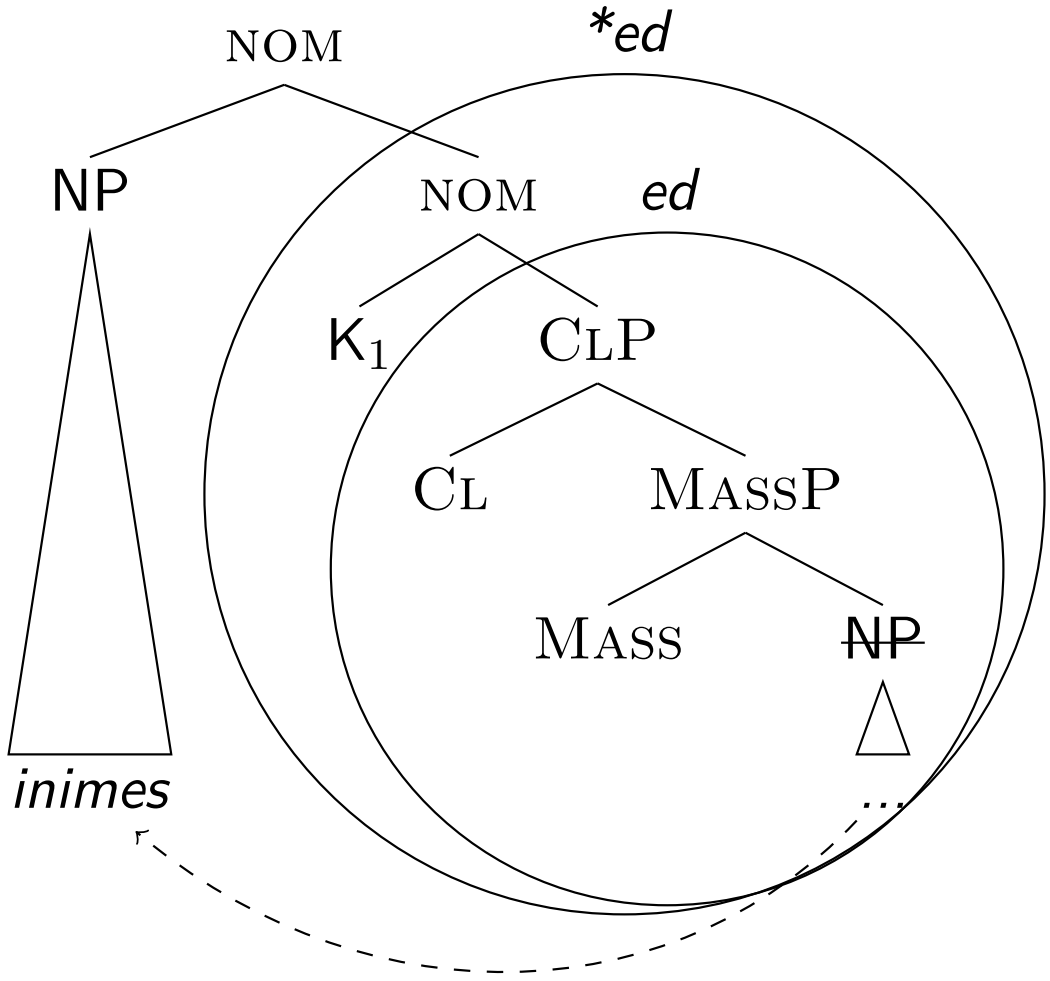
(82) Estonian:

| | PSUDO-PART | COUNTED | PLURAL |
|---|---|---|---|
| NOM | *inimes-t* | *inimes-t* | *inimes-ed* |
| ACC | *inimes-t* | *inimes-t* | *inimes-ed* |
| GEN | *inimes-e* | *inimes-e* | *inimes-te* |

(83)



(84)



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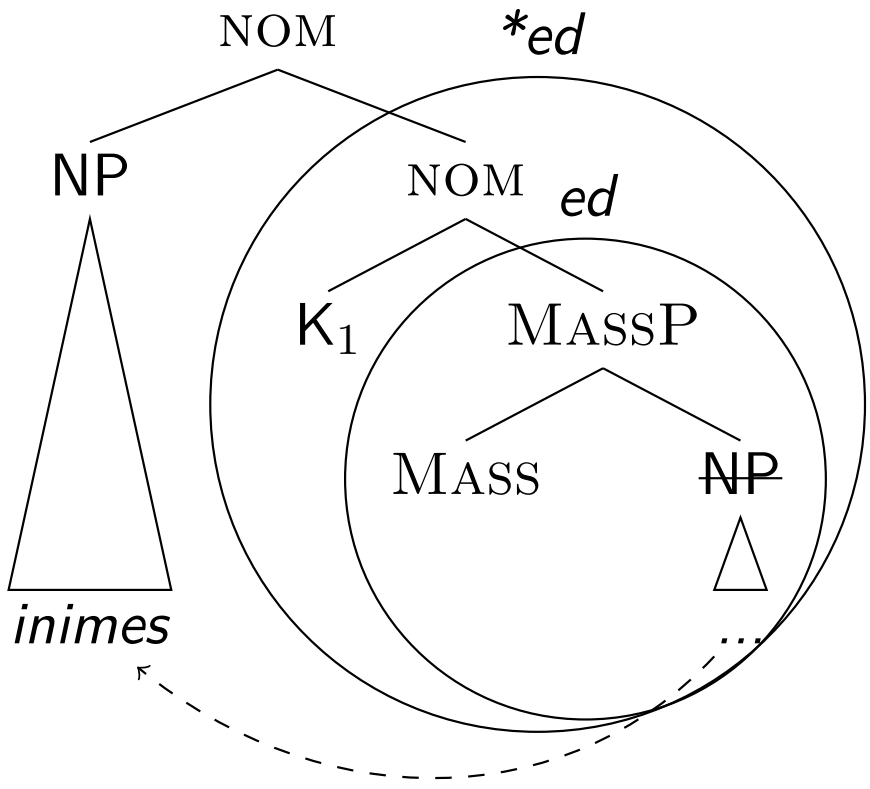

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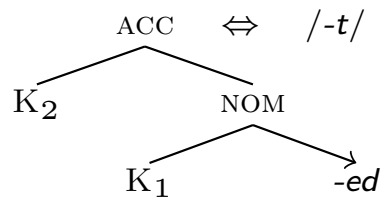


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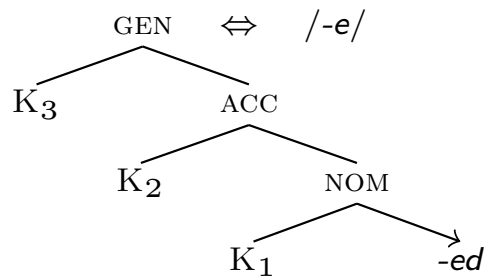

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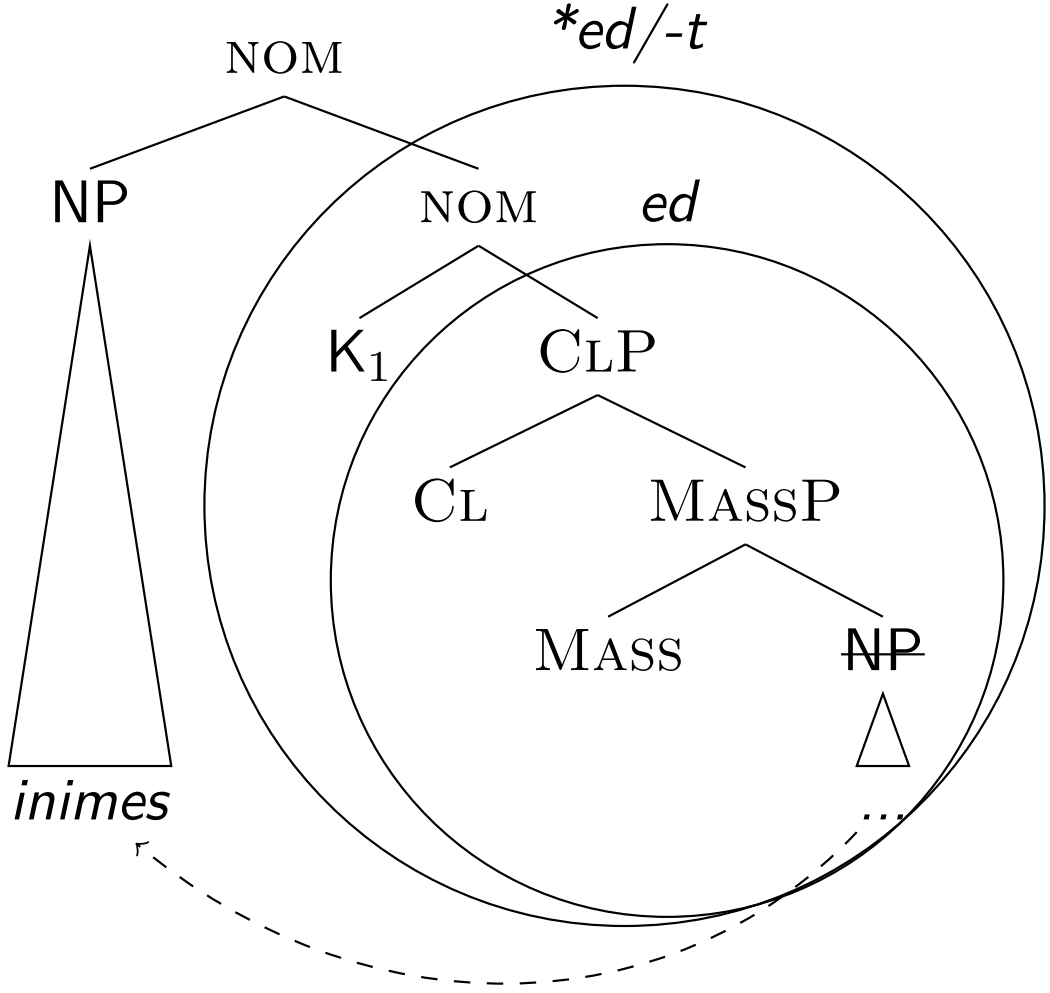

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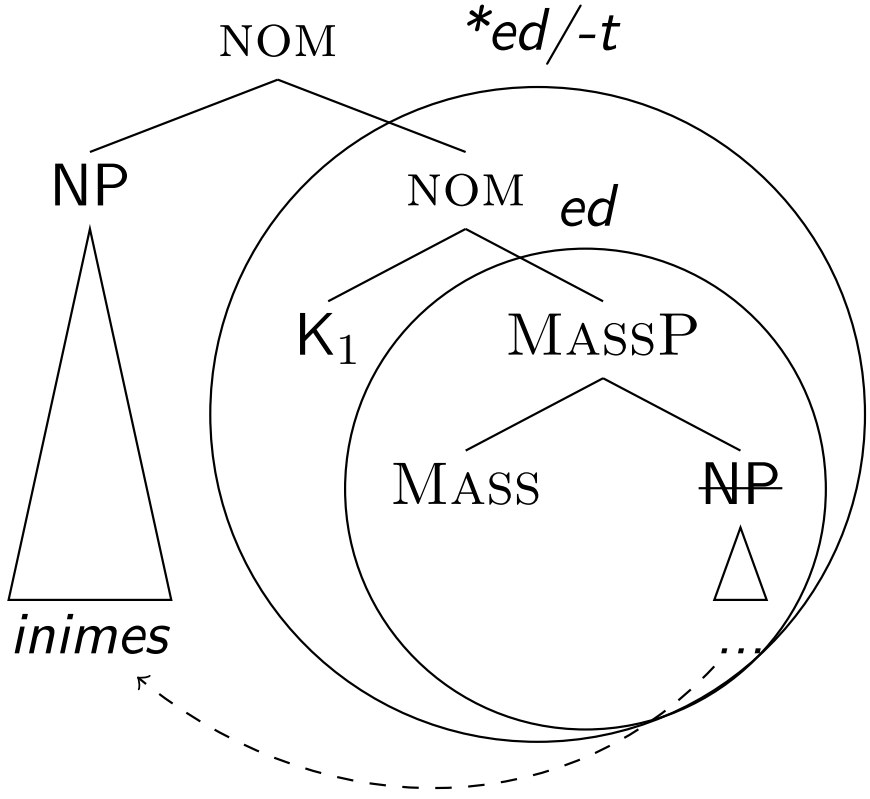

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dat-all-loc

numerals

How does this help

An important footnote on ‘singular’

Tripartite systems

Split systems I: Gender/Class

Conclusions

Appendix Adding case

dat-all-loc

numerals

How does this help

An important footnote on ‘singular’

Tripartite systems

Split systems I: Gender/Class

Conclusions

Appendix Adding case

# Numeral phrases: the “traditional” view

(90) English

a. One { apple | *apples }

# Numeral phrases: the "traditional" view

(90) English

a. One { apple | *apples }

b. zero/two/fifty-five { *apple | apples }

# Numeral phrases: the "traditional" view

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- In English, numerals other than 1 combine with the plural

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a. bir { çocuk | *çocuk-lar }
   one boy boy-PL

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b. sıfır/iki / üç / yirmi üç {çocuk | *çocuk-lar}
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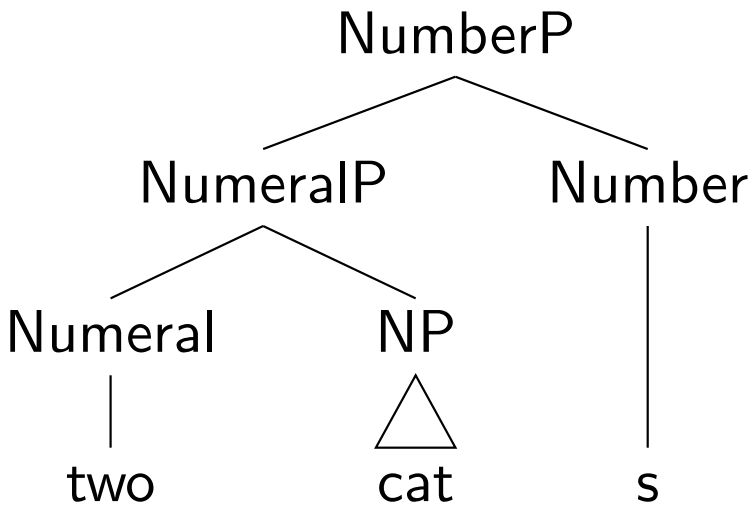
# Numeral phrases: the "traditional" view



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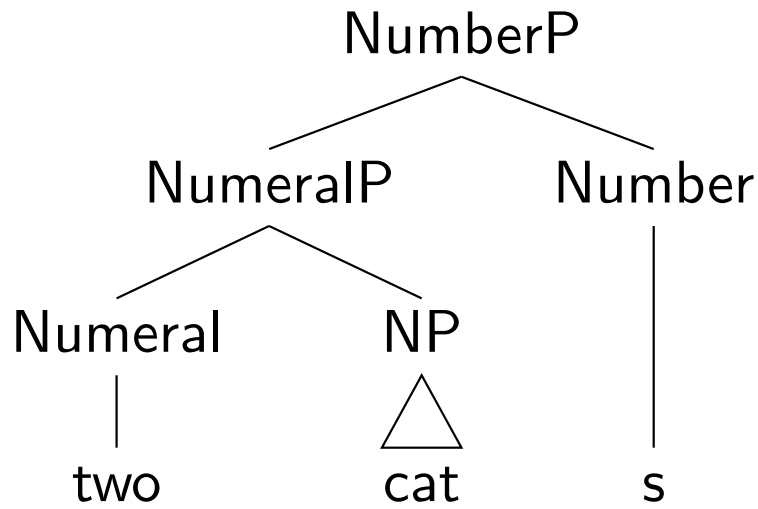


(92) a. $[\![\text{NP}]\!] = \{$ a, b, c, ab, ac, bc, abc $\}$

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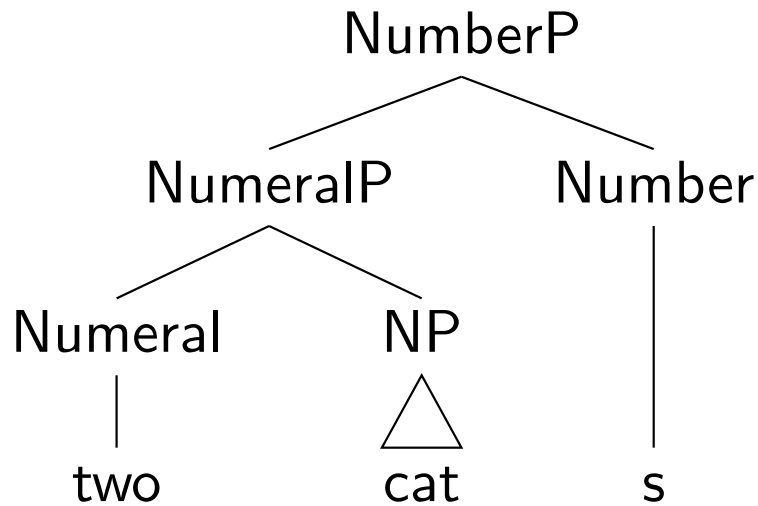


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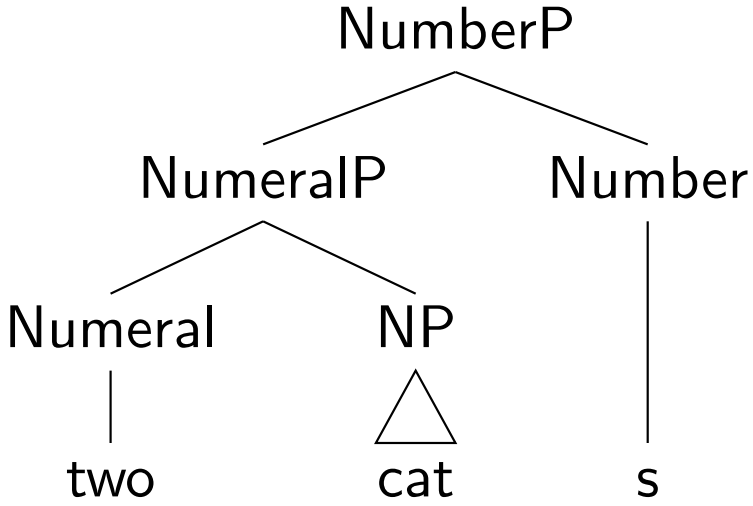


(93) English-style language: [+/- atomic]

a. $[\![+\text{atomic}]\!] = \lambda P.\lambda x.\ P(x)\ \&\ \text{atom}(x)$

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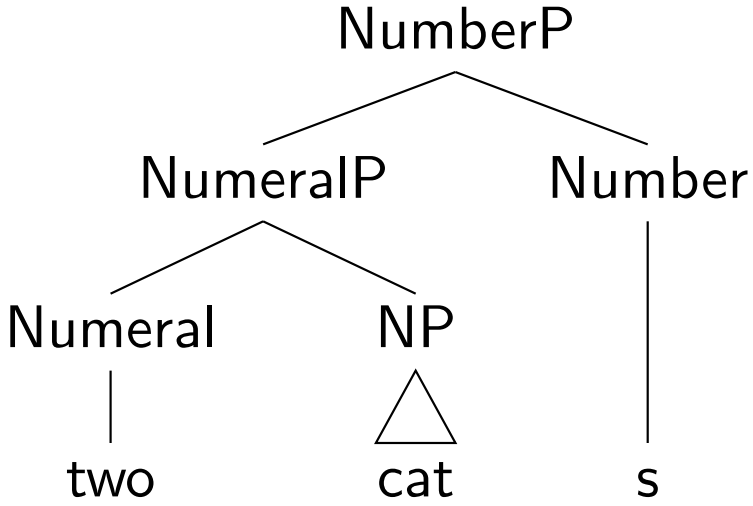


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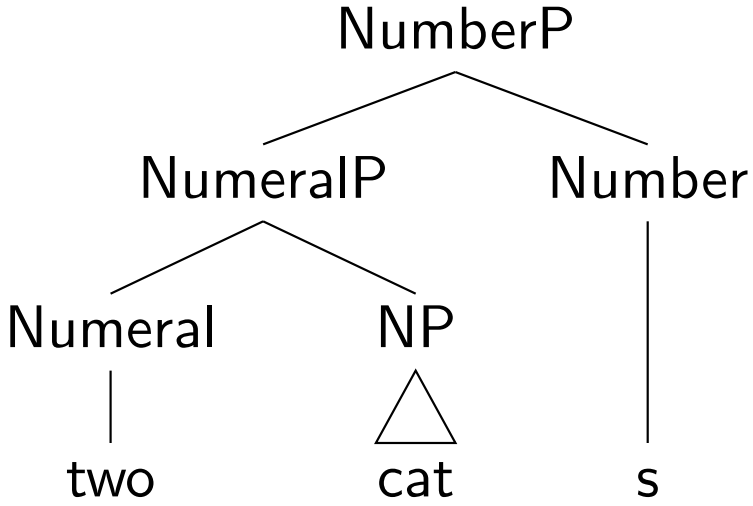


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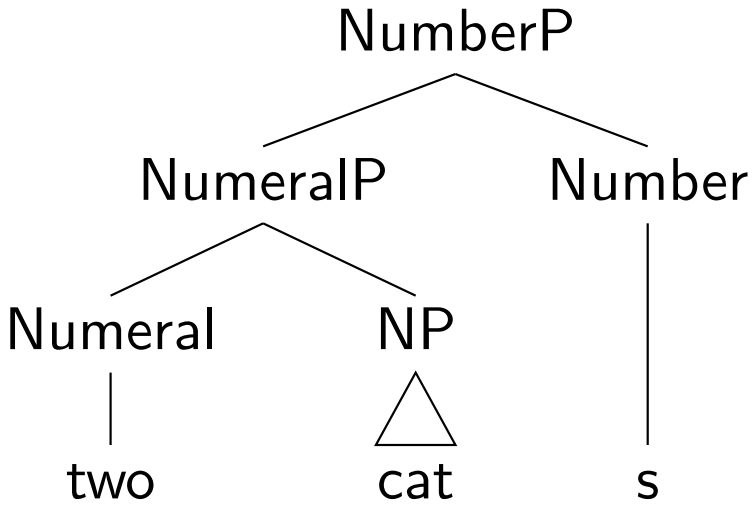


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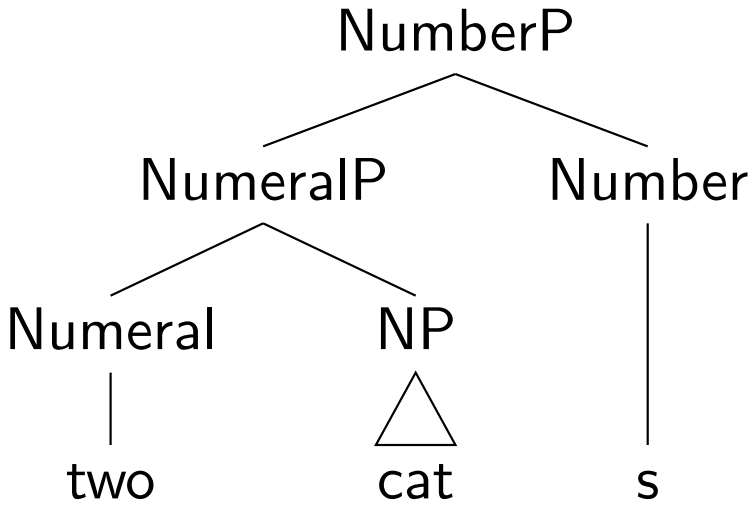


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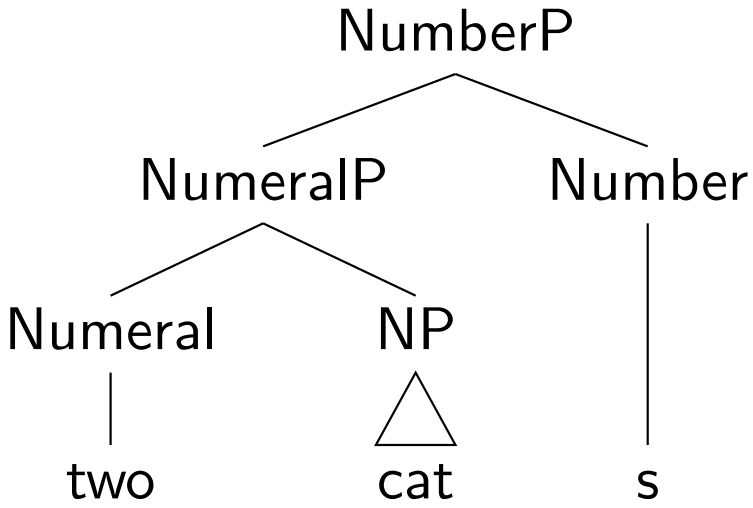


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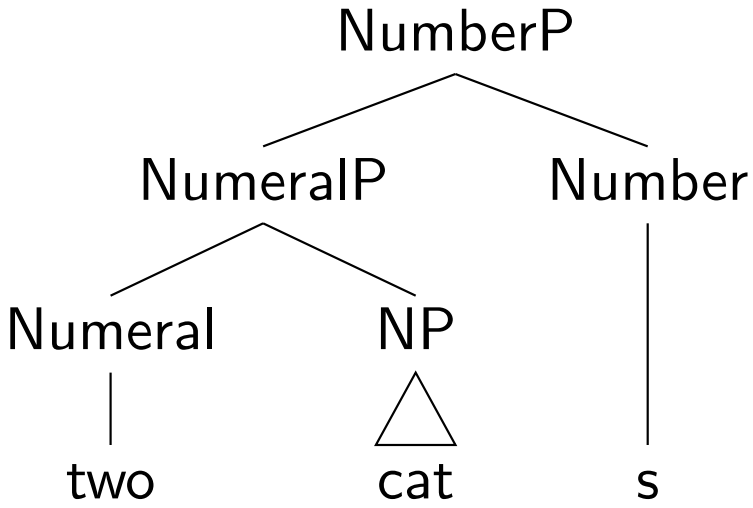
# Numeral phrases: the "traditional" view

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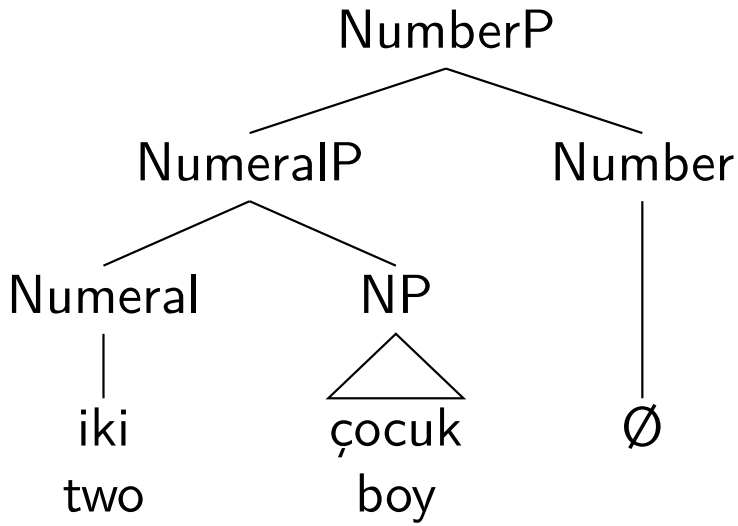


(96) Turkish-style language: [+/- minimal]

a. $[\![+\text{minimal}]\!] = \lambda P.\lambda x.\ P(x)\ \neg\exists y\ P(y)\ y \sqsubset x$

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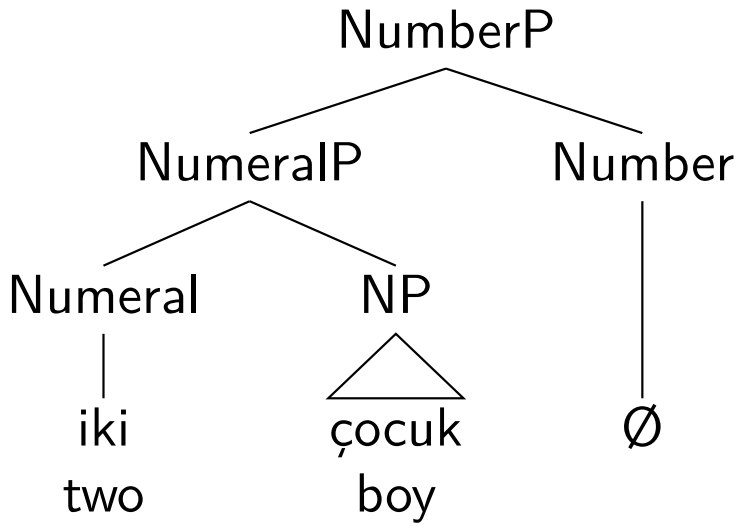
# Numeral phrases: the "traditional" view

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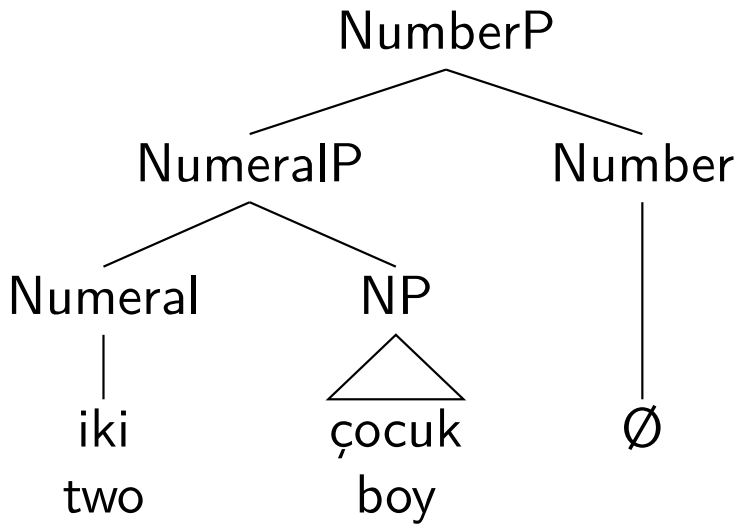


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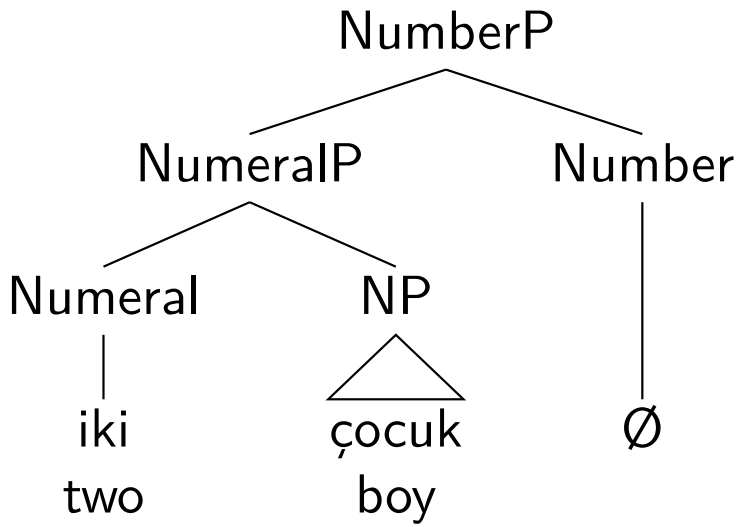


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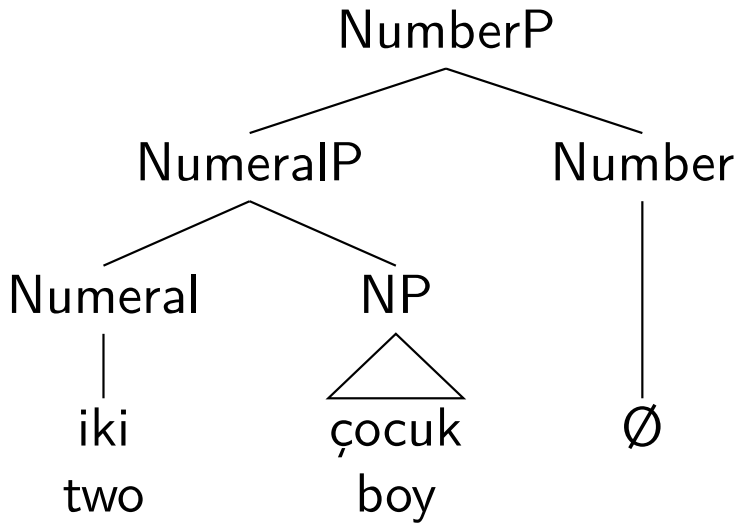


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(97) $[\![\text{NP}]\!] = \{$ a, b, c, ab, ac, bc, abc $\}$

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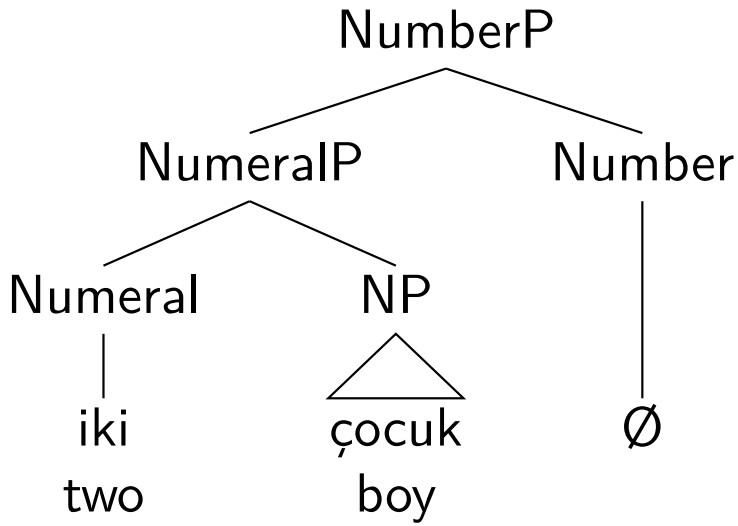
# Numeral phrases: the "traditional" view




(96) Turkish-style language: [+/- minimal]

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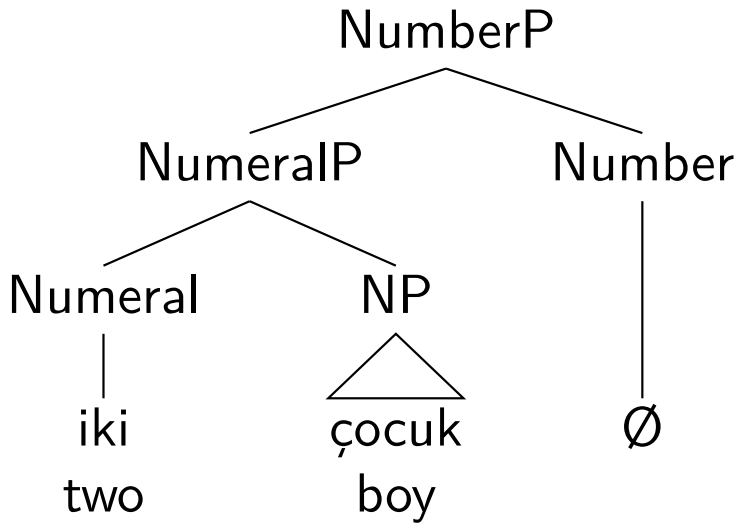


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dat-all-loc

numerals

How does this help

An important footnote on ‘singular’

Tripartite systems

Split systems I: Gender/Class

Conclusions

Appendix Adding case

# Points of concern / difference

- The position of number (below numeral)

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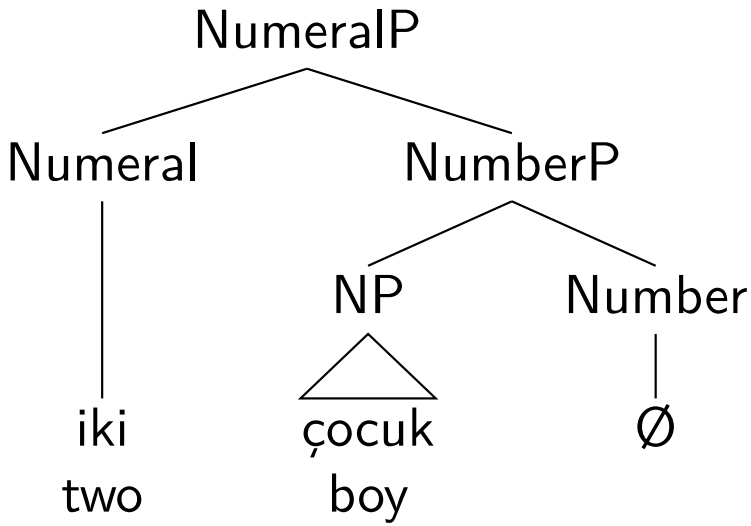
- The position of number (below numeral)
- Tripartite systems (ABC patterns)

# Points of concern / difference

- The position of number (below numeral)
- Tripartite systems (ABC patterns)
- Split systems (some languages have both the Dutch and Turkish pattern)

# The position of Number



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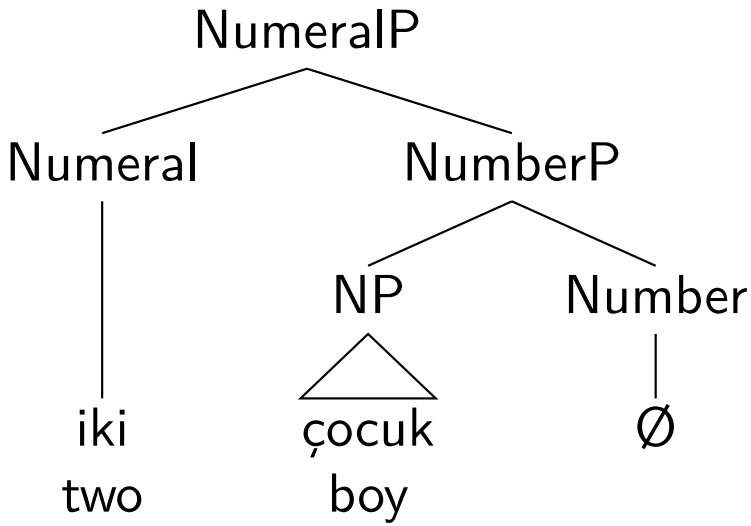


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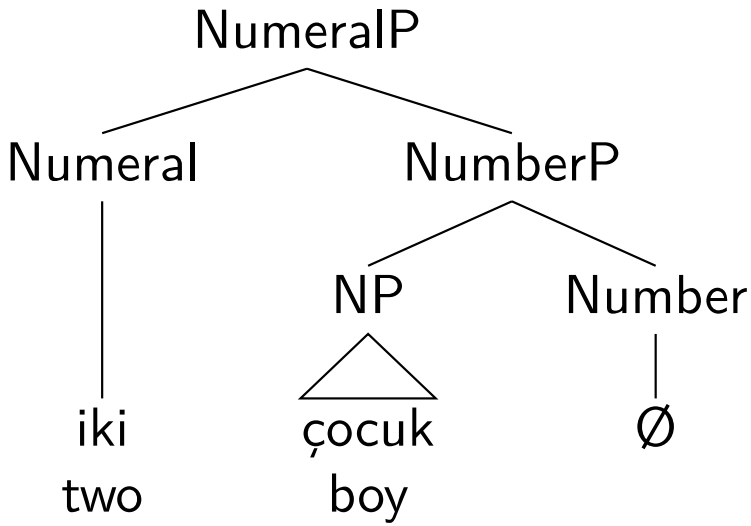


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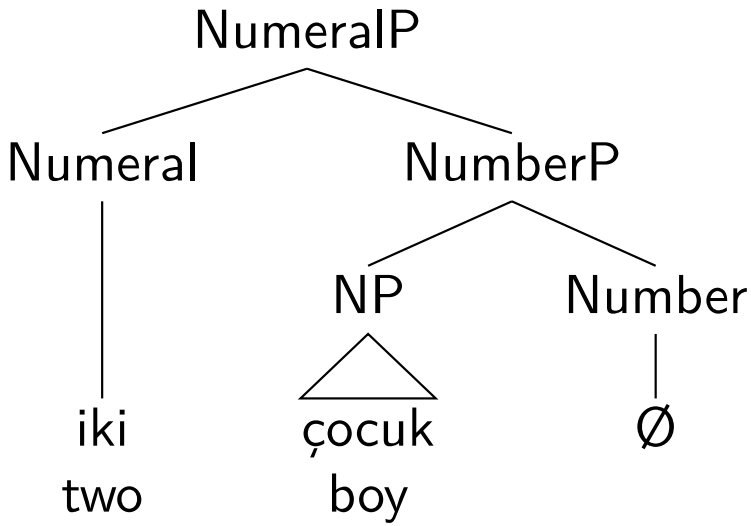


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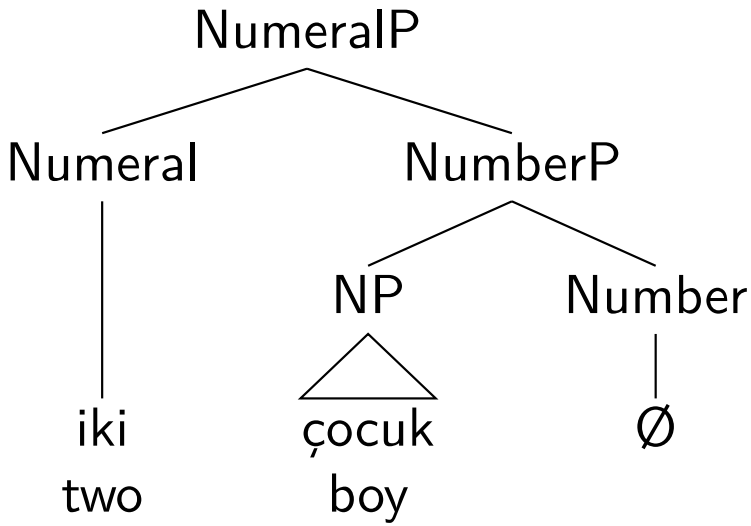


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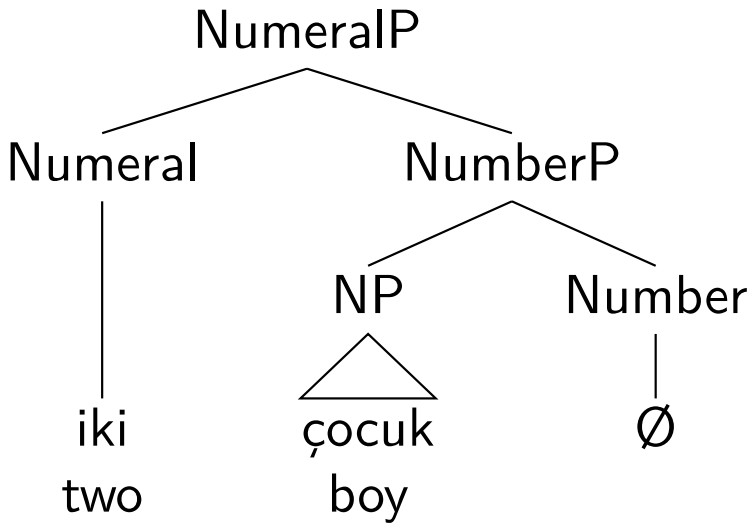


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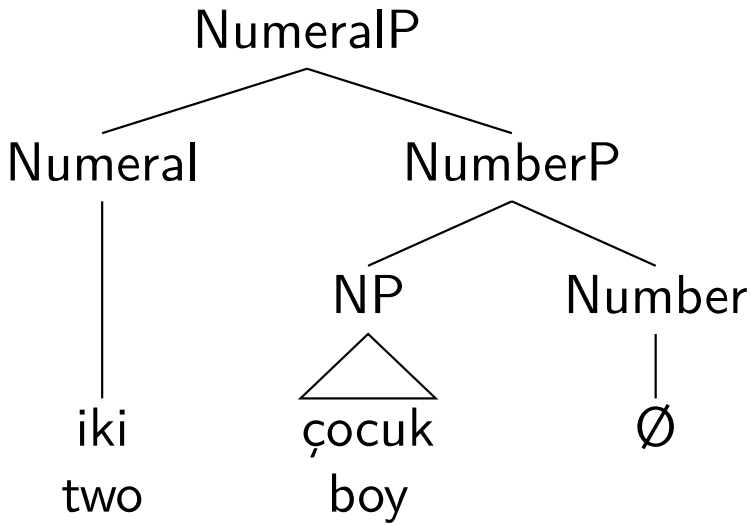


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# The position of Number

(102) yoho ya ndo Ø mí=n-jödö
two PL man REL 3.IMP=MED-brothers
'two men who were brothers' (Hnonho Otomi – Oto-Manguean)

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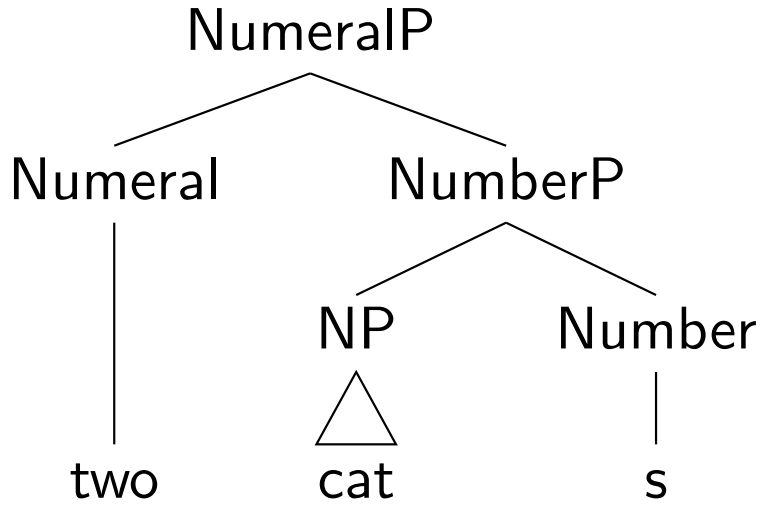
two PL man REL 3.IMP=MED-brothers
'two men who were brothers' (Hnonho Otomi – Oto-Manguean)

(103) keb' ke'q nim-a tz'i'
two PL big-aff dog
'two big dogs' (Sipakapense Maya – Mayan)

# Points of concern

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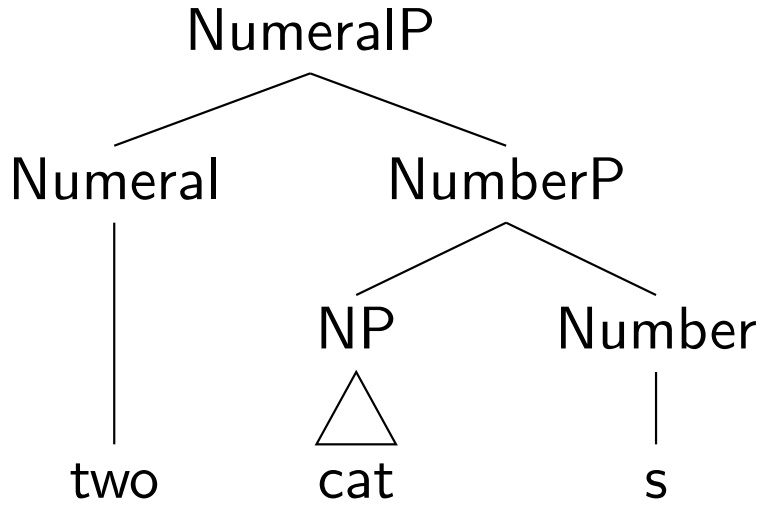


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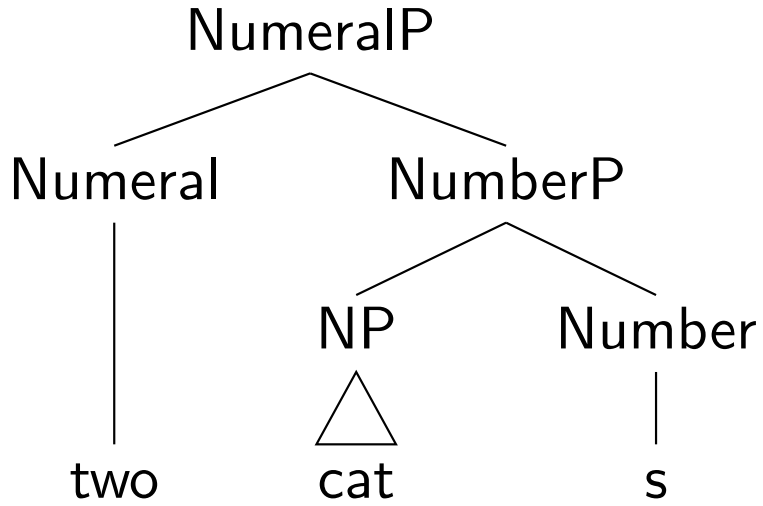


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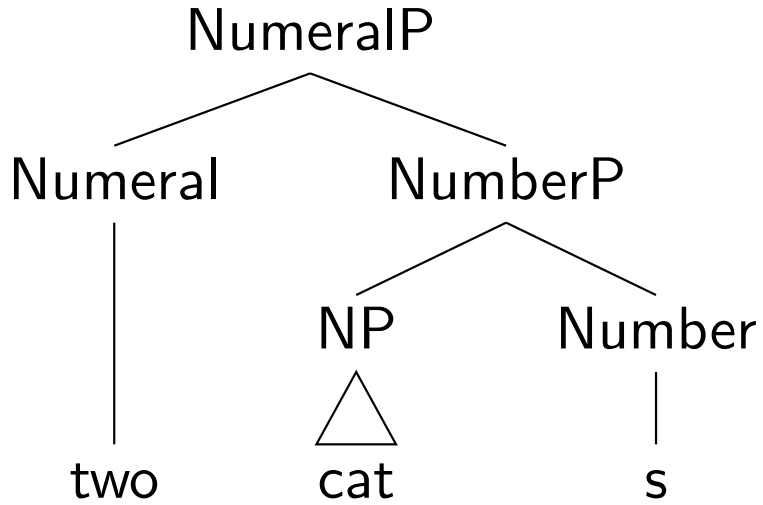


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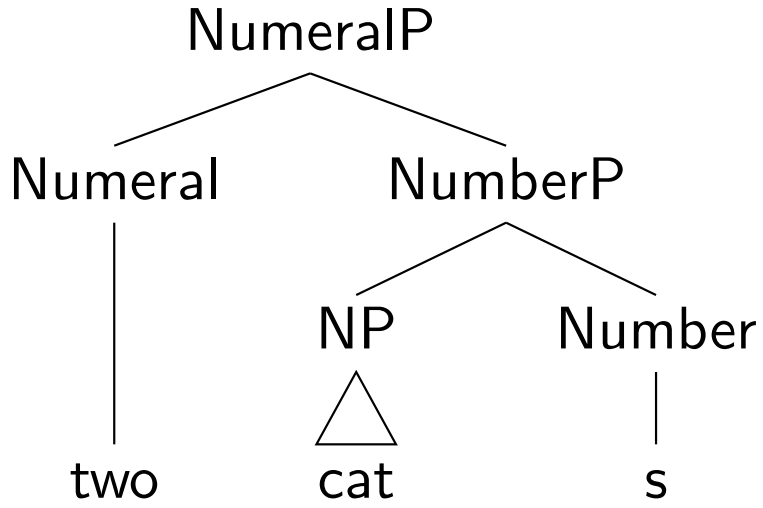


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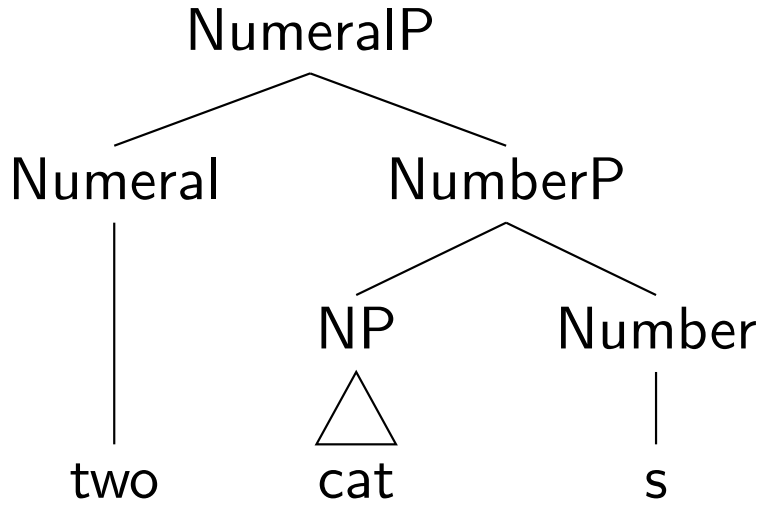


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# The position of Number

(107) Niuean

a. Ne faka-moui [he ekekafo] [*e tagata na*.]
PST CAUS-live ERG doctor ABS person that
'The doctor saved that person.'

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c. Ne kitia [e au] [(*e*) *tokolima* ***e*** *tagata*.]
PST see ERG I ABS five DIV person
'I saw five people.'

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PST see ERG I ABS five DIV person
'I saw five people.'

d. Ko [*e lupo kava haau*], ne inu e Sione.
PRED ABS bottle beer your PST drink ERG Sione
'Your bottle of beer Sione drank.'