

# The interaction between movement, licensing, and spell-out

## What c-commands what in West Circassian nominalizations

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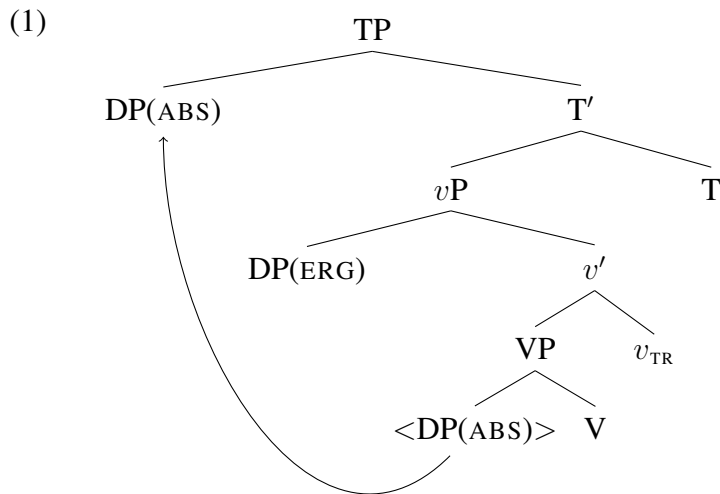
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### 1 Introduction: Conflicting c-command diagnostics

**West Circassian** (or Adyghe; Northwest Caucasian):

- polysynthetic: head marking, pro-drop, free word order
- Finite clauses are high absolutive: theme of transitive verb moves to Spec,TP.



Evidence from:

- reciprocals (Ershova to appear )
- parasitic gaps (Ershova 2021)

**Nominalizations** differ from finite clauses (Ershova 2020):

- no verbal agreement or case assignment
- verbal arguments licensed as possessor or pseudo-incorporated
- constrained linear order

**Conflicting c-command diagnostics in nominalizations:**

- reciprocals: ABS theme c-commands ERG external argument (analogous to finite clauses)
- linear order: ERG external argument c-commands ABS theme

### The proposal:

- Nominalizations have high ABS syntax, like finite clauses.
- The lower copy of raised ABS is pronounced due to constraints on licensing.

### Roadmap:

- 2 Background on West Circassian clause structure
- 3 Morphosyntax of nominalizations
- 4 Pseudo-noun incorporation and licensing
- 5 Conclusion and implications

## 2 Background on West Circassian clause structure

- polysynthesis (Kumakhov 1964; Kumakhov & Vamling 2009; Testelets 2009; Korotkova & Lander 2010; Lander & Letuchiy 2010; Lander 2017; Lander & Testelets 2017, *inter alia*):

(2) **sə-**      **qə-** **p-**      **f-**      **a-**      **r-**      **jə-**      **be-**      **лeB<sup>w</sup>ə -B**  
 1SG.ABS- DIR- 2SG.IO- BEN- 3PL.IO- DAT- 3SG.ERG- CAUS- see    -PST  
 ‘He showed me to them for your sake.’ (Korotkova & Lander 2010:301)

- ergativity in verbal indexing

(3) | **Absolutive-** | **Applied object-** | **Applicative-** | **Ergative-** |

- possessors are cross-referenced on the noun:

(4) **s-šəpχ<sup>w</sup>əxer**  
**1SG.PR-sister.PL.ABS**  
 ‘my sisters’

(5) **t-jə-B<sup>w</sup>əneB<sup>w</sup>əxem**  
**1PL.PR-POSS-neighbor.PL.OBL**  
 ‘our neighbors’

- ergativity in case marking

absolutive *-r*:    subject of intransitive verb (6a)  
                           theme of transitive verb (6b)

oblique *-m*:    agent of transitive verb (6b)  
                           applied objects (6c)  
                           possessors (6d)  
                           complements of postpositions (6e)

(6) a. **mə pšaše-r(ABS)**    jane                    paje    Ø-qaš<sup>w</sup>e  
       this girl-ABS            3PL.PR+mother for    3ABS-dance  
       ‘The girl is dancing for her mother.’

b. *sjəpʂaʂexe-m(ERG) nəʂɣapexe-r(ABS) Ø-a-fepaʁex*  
 1SG.PR.girl.PL-OBL doll.PL-ABS 3ABS-3PL.ERG-dress.PST.PL  
 ‘My daughters dressed the dolls.’

c. *mə ɕʰale-r(ABS) bere jəʔahəlxə-m(IO) telefonɕʰe*  
 this boy-ABS much 3SG.PR.relative.PL-OBL telephone.INS  
 Ø-a-fe-tjewə  
 3ABS-3PL.IO-BEN-hit.PRES  
 ‘This boy calls (lit. rings for) his relatives on the telephone a lot.’

d. *pʂaʂe-m Ø-jə-pʂeʂeɸ<sup>w</sup>* e. *mə ʂ<sup>w</sup>əzə-m paje*  
 girl-OBL 3SG.PR-POSS-female.friend this woman-OBL for  
 ‘the girl’s friend’ ‘for this woman’

- Indefinite nouns, possessed nouns in the singular, proper names and personal pronouns are generally unmarked for case (Arkadiev et al. 2009:51-52; Arkadiev & Testelets 2019).
- High absolutive syntax, based on **anaphor binding** and parasitic gaps  
 (Ershova 2019, 2021, to appear )

**Reciprocals:**

- covert anaphor triggers specialized agreement on the verb without changing valency or case frame

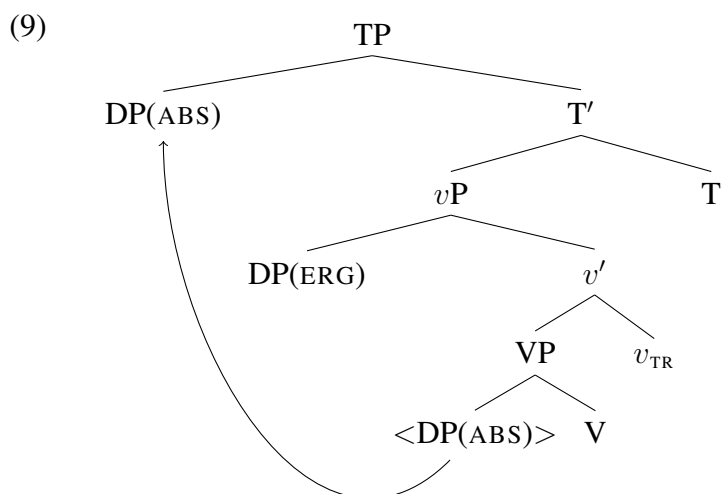
(7) (...) *a-xe-me zanɕʰ-ew Ø zewəʒe*  
 that-PL-PL.OBL direct-ADV (rec) all  
 Ø- **ze-** r- a- ʔ<sup>w</sup>eteʒʰəʂʰtəɸe  
 3ABS- **REC.IO-** DAT- 3PL.ERG- tell.IPF.PST  
 ‘They certainly told the whole truth to each other.’ (Rogava & Keraševa 1966:274)

- absolutive theme binds ergative agent, and not vice versa

(8) a. *ʂ<sup>w</sup>ə- t- λeɸ<sup>w</sup>ə-ɸ*  
 2PL.ABS- 1PL.ERG- see -PST  
 ‘We saw you.’

b. *tə- **zere-** λeɸ<sup>w</sup>ə-ɸ* c. \****ze(re)-** t- λeɸ<sup>w</sup>ə-ɸ*  
 1PL.ABS- **REC.ERG-** see -PST **REC.ABS-** 1PL.ERG- see -PST  
 ‘We saw each other.’ Intended: ‘We saw each other.’

⇒ **ABS theme c-commands ERG agent.**



### 3 Morphosyntax of nominalizations

#### 3.1 Basic morphosyntax

- Non-derived nominals: modifiers and complements incorporated,  $\phi$ -agreement with possessor

(10) ja-            xebze- bzəpχe  
 3PL.POSS- rule- example  
 ‘their legal example’ (Ershova 2020:431)

- Nominalizations: no verbal  $\phi$ -agreement or licensing, arguments licensed as possessor or incorporated

(11) a. [adre-**me**(ERG) laɞe-**r**(ABS) Ø-zer-**a**-thač’ərem                    sjeplənə  
 other-**PL.OBL** dish-**ABS**    **3ABS-FCT-3PL.ERG**-wash.PRES.OBL to watch  
 səg<sup>w</sup> rjehə  
 I like

‘I like to watch other people wash dishes.’

**finite clause**

b. \* [pšaše-**m** laɞe-xe-**r**    thač’ə-nə] -r    səg<sup>w</sup> rjehə  
 girl-**OBL** dish-**PL-ABS** wash-**NML -ABS**    I like

Intended: ‘I like the girl’s washing of dishes.’

**nominalization**

c. pšaše-**m** Ø-            jə-    leɞe- thač’ə -n            səg<sup>w</sup> rjehə  
 girl-**OBL** **3SG.PR- POSS-** dish- wash -**NML**    I like

‘I like the girl’s dish-washing.’

**nominalization**

(Ershova 2020:450-452)

- Structure up to TP

- ✓ causative and applicative morphology

(12) zawe-m Ø- jə- xebze- **ɸe-** kʷedə -č'e  
 war-OBL 3SG.PR- POSS- rule- CAUS- perish -NML  
 'the war's destruction (lit. causing to perish) of traditions' (Ershova 2020:449)

(13) ja- hažʷə- **de-** žegʷə -č'e  
 3PL.POSS- puppy- COM- play -NML  
 'their manner of playing with puppies'

- ✓ temporal adverbs

(14) [ **mafe-qes** wjə- tʷəčan- kʷe -n ] sjezeš'əɸ  
**day-every** 2SG.POSS- store- go -NML I'm tired  
 'I'm tired of your going to the store every day.'

(15) **mafe-qes** \*(Ø-kʷe-re) pjerjedač  
**day-each** 3ABS-go-PRES broadcast  
 'every day program' (incompatible with non-derived nominals)

- ✓ binding by high absolutive – note position of REC prefix!

⇒ **absolutive moves to Spec,TP!**

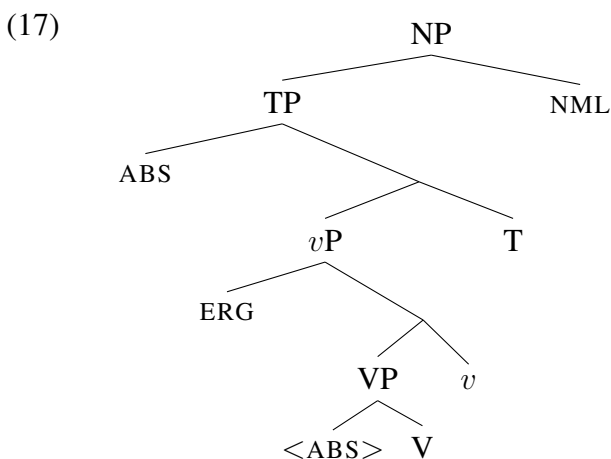
(16) a. mə çəf-xe-r Ø- **qe-** **zere-** **ɸe-** šʷež'əx  
 this person-PL-ABS ABS- DIR- REC.ERG- CAUS- dance.PL  
 'These people are making each other dance.'

**finite clause**

b. ja- **qe-** **zere-** **ɸe-** šʷa -č'e  
 3PL.POSS- DIR- REC.ERG- CAUS- dance -NML  
 'their manner of making each other dance'

**nominalization**

**Summary:** nominalizations include full TP with high ABS c-commanding ERG.



### 3.2 Constrained linear order in nominalizations

(18) ORDERING CONSTRAINT ON ARGUMENTS IN NOMINALIZATION:

The internal argument must appear closer to the verbal root than the external argument. (Ershova 2020:459)

- ERG-ABS verb: ERG precedes ABS

(19) ERG = possessor; ABS = pseudo-incorporated NP

- a. mə pšaše-m(ERG) laʁe-xe-r(ABS) Ø-j-e-thač'ə  
this girl-OBL dish-PL-ABS 3ABS-3SG.ERG-PRES-wash  
'This girl is washing the dishes.'
- b. pšaše-m Ø-jə-leʁe-thač'ə-č'e səg<sup>w</sup> rjehə  
girl-OBL 3SG.PR-POSS-dish-wash-NML I like  
'I like the girl's manner of dish-washing.'
- c. # laʁe-me ja-pšeše-thač'ə-č'e səg<sup>w</sup> rjehə  
dish-PL.OBL 3PL.PR+POSS-girl-wash-NML I like  
Intended: 'I like the girls' manner of washing dishes.'  
#'I like the dishes' manner of washing girls' (Ershova 2020)

(20) ERG and ABS = pseudo-incorporated NPs

- a. pšeše- leʁe- thač'ə -č'e -r  
**girl-** dish- wash -NML -ABS  
'girls' dish-washing'
- b. # leʁe- pšeše- thač'ə -č'e -r  
dish- **girl-** wash -NML -ABS  
Intended: 'girls' dish-washing'  
#'dishes' girl-washing' (Ershova 2020)

- Compare ABS-IO verb: ABS precedes IO

(21) ABS = possessor; IO = pseudo-incorporated NP

- a. mə pšaše-r(ABS) hač'e-me(IO) Ø-ja-že  
this girl-ABS guest-PL.OBL 3ABS-3PL.IO+DAT-wait  
'This girl is waiting for the guests.'
- b. marə hač'e-me ja-pšeše-je-ža-pe  
here guest-PL.OBL 3PL.PR+POSS-girl-DAT-wait-NML  
'Here is the place for the guests' waiting for the girl.'  
\*'Here is the place for the girls' waiting for the guests.' (Ershova 2020)

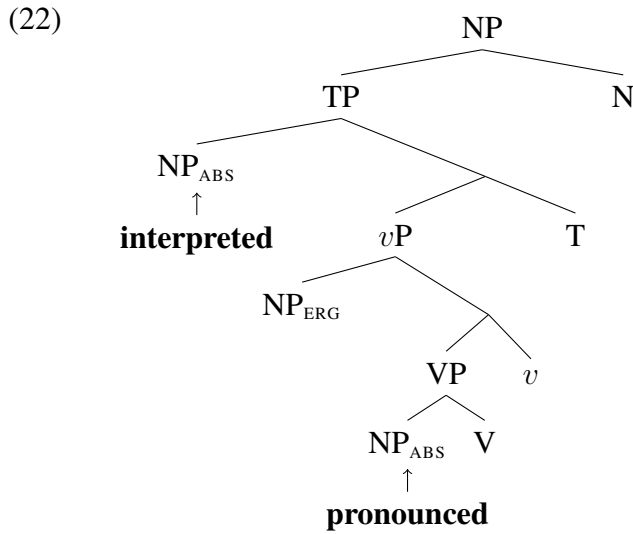
**Generalization:** external argument precedes internal argument.

Based on linear order constraints, ERG c-commands ABS in nominalizations.

**Contrast with reciprocal binding!**

**The puzzle:**

ABS is interpreted high for reciprocal binding, but pronounced low.



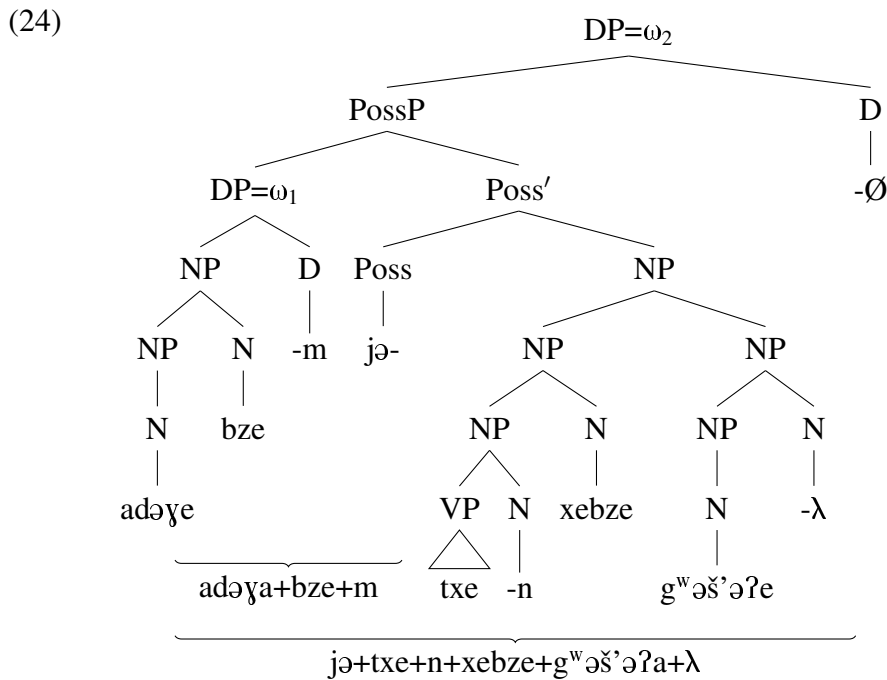
**The proposal:** ABS must surface low to be licensed under adjacency with the verb.

**4 Pseudo-noun incorporation and licensing**

**4.1 Pseudo-incorporation in DPs**

Ershova (2020): incorporated complements and modifiers in DP are pseudo-incorporated because DP phase is mapped to single phonological word.

- (23) adəɣa- bze -m Ø- jə- [txe -n]- xebze- g<sup>w</sup>əš'əʔa -λ  
 Adyghe- language -OBL 3SG.PR- POSS- [write -NML]- rule- word -PLACE  
 ‘the orthographic (lit. writing rule) dictionary (lit. place for words) of the Adyghe language’



Modeled with Match Theory (Selkirk 2011):

(25) Classic Match Theory constraints (Selkirk 2011:439):

a. MATCH CLAUSE:

A clause in syntactic constituent structure must be matched by a corresponding prosodic constituent [...] in phonological representation.

b. MATCH PHRASE:

A phrase in syntactic constituent structure must be matched by a corresponding prosodic constituent [...] in phonological representation.

c. MATCH WORD:

A word in syntactic constituent structure must be matched by a corresponding prosodic constituent [...] in phonological representation.

(26) MATCH PHASE(-TO-WORD):

A phase in syntactic constituent structure must be matched by a prosodic word in phonological representation. (inspired by Compton & Pittman 2010; Barrie & Mathieu 2016)

Evidence for pseudo-incorporation (rather than syntactic head movement):

1. Not limited to complements:

(27) Ø- jə- zə- šolk- žene- daxe -r  
3SG.PR- POSS- one- silk- dress- pretty -ABS  
'one beautiful dress of hers' (Lander 2017:84)

In verbal nominalizations, external arguments may be pseudo-incorporated:

(28) pšēše- leʁe- thač'ə -č'e -r  
girl- dish- wash -NML -ABS  
'girls' dish-washing'

2. Incorporated elements may include their own modifiers:

(29) a. [č'ərbəš' -fəž']- wəne -r  
[brick -white]- house -ABS  
'the house of white bricks' (Lander 2017:83)

b. š'e -[ʔašə -š'e] -fabe -r  
milk -[sweet -too] -warm -ABS  
'the warm milk that is too sweet' (Lander 2017:85)

3. Incorporated elements may be coordinated:

(30) c<sup>w</sup>eqe- əč'jə- š'əʁən- t<sup>w</sup>eč'an -xe -r  
footwear- and- clothes- shop -PL -ABS  
'shops of shoes and clothes' (Lander 2017:93)



Nominalizations are verbal constituents embedded in a DP

⇒ subject to DP syntax-to-PF mapping rules.

Incorporated arguments are pronounced as part of nominalization due to phase-to-word mapping.

Pseudo-incorporation is a type of nominal licensing (Massam 2001; Levin 2015; Van Urk 2020; Branan 2021, a.o.) ⇒ constrained by both phonology and syntax.

#### 4.2 Pseudo-noun incorporation as licensing

Nominals must be licensed:

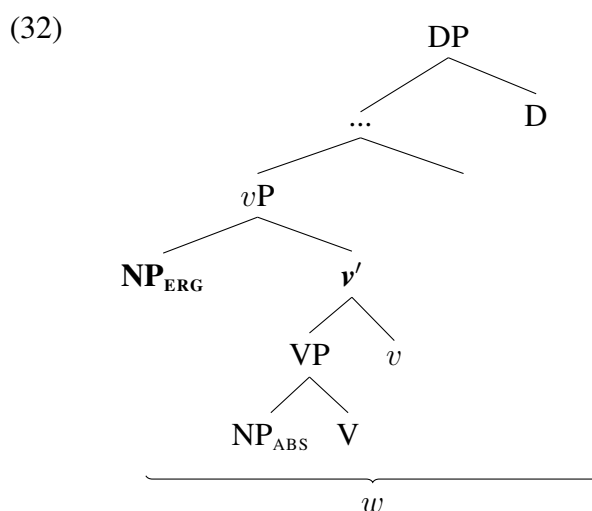
1. Through  $\phi$ -agreement (Kalin 2019) (or case assignment, cf. Levin 2015; Branan 2021 *et al.*),  
or
2. By adjacency to selecting head (Levin 2015).

(31) An NP is licensed by adjacency iff:

- a. The head of NP ( $N^0$ ) is linearly adjacent to the head that selects it (e.g.  $V^0$  or  $v^0$ )  
**or** (Levin 2015; Branan 2021).
- b. NP is pronounced as part of the same phonological word as the head that assigns its theta-role (per standard syntax-to-PF mapping rules),<sup>1</sup> and  
NP is pronounced adjacent to the projection of the head that selects it  
(e.g.  $v^0$ ,  $v'$  or  $vP = v$  in Bare Phrase Structure).

⇒ **Pseudo-incorporated NP must be pronounced in its theta-position.**

- ERG external argument is selected by  $v^0$ : ERG NP is licensed by adjacency to  $v^0/v'$ :

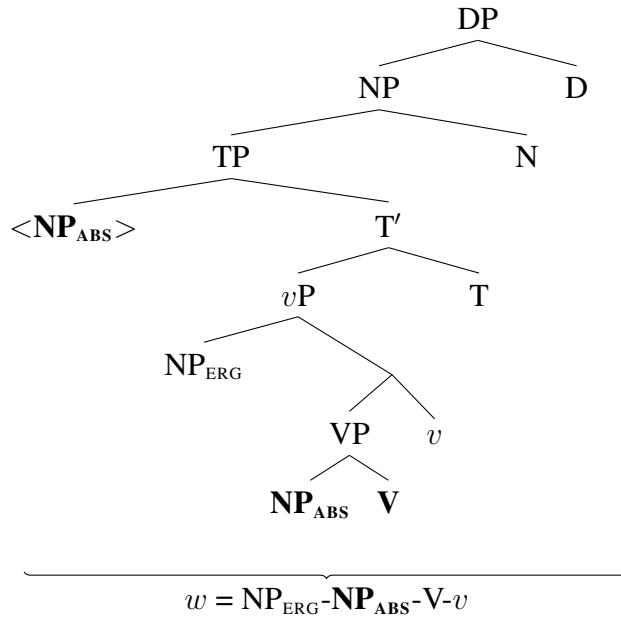


(33) [DP [NP **p̄sēse** ]- [v' lebe- thač'ə -č'e -r ] ]  
**girl-** dish- wash -NML -ABS  
 'girls' dish-washing'

<sup>1</sup>Cf. ARGUMENT- $\Phi$  (Clemens 2014; Clemens & Coon 2018).

- ABS internal argument is selected by  $V^0$ : ABS NP is licensed by adjacency to  $V^0$   
 $\Rightarrow$  ABS NP must be pronounced in its base position and cannot be pronounced in Spec,TP.

(34)



(35) \* [DP [TP [NP **lebe** ]- pšêše- [VP  $t_{\text{ABS}}$  thač'ə ] -č'e -r  
**dish-** girl- wash -NML -ABS  
 Intended: 'girls' dish-washing'

### Summary:

- Arguments in nominalizations are pronounced in their theta-positions to be licensed by adjacency.
- $\text{NP}_{\text{ABS}}$  moves high in nominalizations, but surfaces low.

$\rightarrow$  **confirmed by two-place unaccusatives** (next subsection)

(You might ask: But what if the ABS theme is a full DP?  $\rightarrow$  See Appendix.)

### 4.3 Licensing in theta-position confirmed by two-place unaccusatives

Two-place unaccusatives: small class of experiencer-theme predicates where the theme and experiencer display symmetrical behavior.

E.g.  $\check{s}'ə\mathfrak{B}^wəp\check{s}en$  'forget': experiencer = LOC; theme = ABS

(36) **Theme- Experiencer-**  
 sə- p-š'ə-  $\mathfrak{B}^wəp\check{s}a$  - $\mathfrak{B}$   
 SG.ABS- 2SG.IO-LOC- forget -PST  
 'You forgot about me.'

1. symmetry in reflexive binding (Ershova 2019, to appear ):<sup>2</sup>

- (37) a. **zə-** s- š'ə- ɸ<sup>w</sup>əpše -ž'ə -ɸ  
**REFL.ABS-** 1SG.IO- LOC- forget -RE -PST
- b. sə- **z-** š'ə- ɸ<sup>w</sup>əpše -ž'ə -ɸ  
 1SG.ABS- **REFL.IO-** LOC- forget -RE -PST
- 'I forgot about myself (e.g. when serving food).'

**ABS > IO | IO > ABS**

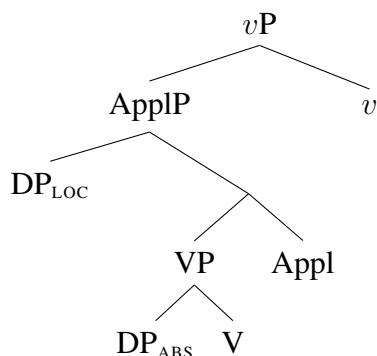
2. symmetry in being controlled PRO (Ershova 2019):

- (38) a. *pro*<sub>i</sub>(ERG) [<sub>CP</sub> **PRO**<sub>i</sub>(LOC)] sjənəbž'əč'eɸ<sup>w</sup>əm qəsš'əšəɸexe-r(ABS)  
 my childhood 1SG.IO-happen.PST-ABS  
 Ø-**s-**š'ə-ɸ<sup>w</sup>əpše-n-ew] Ø-je-**s-**e-ɸa-ž'e  
 3ABS-**1SG.IO-**LOC-forget-MOD-ADV 3ABS-DAT-**1SG.ERG-**PRES-CAUS-begin  
 'I am starting to forget what happened to me in my childhood.' **LOC = PRO**
- b. g<sup>w</sup>əš'əʔe-č'əha-xe-m<sub>i</sub>(ERG) [<sub>CP</sub> **PRO**<sub>i</sub>(ABS)]  
 word-long-PL-OBL  
 Ø-**s-**š'ə-ɸ<sup>w</sup>əpše-n-ew] Ø-r-**a-**ɸe-ž'a-ɸ]  
**3ABS-**1SG.IO-LOC-forget-MOD-ADV 3ABS-DAT-**3PL.ERG-**CAUS-begin-PST  
 'Long words are beginning to be forgotten (by me).'

**ABS = PRO**

Ershova (to appear ): symmetry is result of optional ABS movement to Spec,AppIP (McGinnis 2000, 2001)

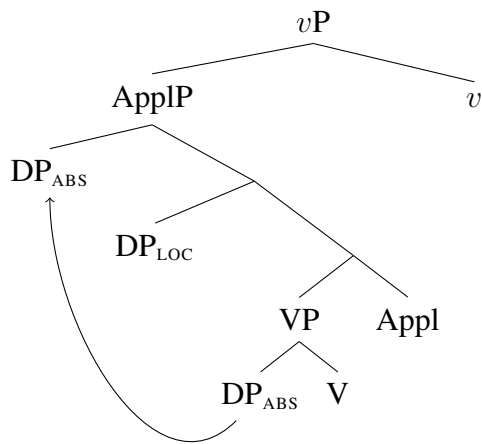
- (39) a. LOC experiencer c-commands ABS ⇒ LOC can bind ABS and be PRO



<sup>2</sup>Reciprocal binding does not display this type of symmetry:

ABS theme must bind LOC experiencer; see Ershova (to appear ) for details.

- b. ABS moves to Spec,ApplP  $\Rightarrow$  ABS c-commands LOC  
 $\Rightarrow$  ABS can bind LOC and be PRO



ABS raising is within  $vP$  (Ershova 2019, to appear)

$\Rightarrow$  If linear order is simply about c-command within  $vP$ , both orders should be possible:

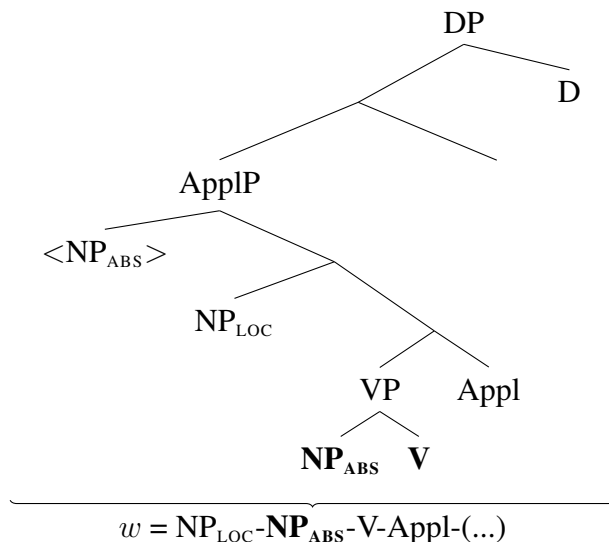
- (40) a.  $NP_{LOC}$ - $NP_{ABS}$ -verb ✓ confirmed  
 b. \* $NP_{ABS}$ - $NP_{LOC}$ -verb ✗ not confirmed

- (41) a.  $mə \check{c}'ale-m(LOC) \emptyset-jə-nane-xe-r(ABS)$   
 this boy-OBL 3SG.PR-POSS-grandmother-PL-ABS  
 $\emptyset-\emptyset-\check{s}'ə-B^wəpša-æe-x$   
 3ABS-3SG.IO-LOC-forget-PST-PL  
 'This boy forgot his grandmothers.'

- b.  $\check{c}'ale-m \emptyset-jə-nene-\check{s}'ə-B^wəpše-n$   $sə\check{s}'e\check{s}'əne$   
 boy-OBL 3SG.PR-POSS-**grandmother**-LOC-forget-NML I fear  
 'I am afraid of the boy's forgetting grandmothers.' ✓LOC-ABS-verb  
 \*'I am afraid of the grandmothers' forgetting the boy.' (Ershova 2020) \*ABS-LOC-verb

$\Rightarrow NP_{ABS}$  must be pronounced in its theta-position (complement of V) (40a).

- (42)  $NP_{ABS}$  is licensed by adjacency to V:



## Summary:

- NP arguments may be licensed via pseudo-noun incorporation.
- In order to be licensed:
  1. an NP must be pronounced in same phonological word as the head that selects it, and
  2. be linearly adjacent to the projection of the head that selects it.

⇒ Pseudo-incorporated NPs are obligatorily pronounced in their theta-positions, reflecting the order of merge, rather than surface c-command relations.

## 5 Conclusion

The apparent mismatch in c-command relations in nominalizations results from constraints on spell-out and licensing:

- NP arguments of nominalized verbs must be licensed by adjacency.
- Licensing by adjacency forces pronunciation of the lowest copy of the argument in its base theta-position.
- Order constraints on arguments in nominalizations reflect base order of merge; reciprocal binding reflects surface c-command.

## Connections:

- Lower copy pronunciation is predicted by the copy theory of movement (Chomsky 1993 *et seq.*)
- PF constraints may force lower copy pronunciation, e.g. subjects in Serbo-Croatian pronounced low to satisfy prosodic requirements on focus (Stjepanović 2007).

## Acknowledgements

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## A Licensing DPs in nominalizations and refining adjacency

- DPs have one  $\phi$ -agreeing/case assigning probe – Poss<sup>0</sup>.
- A DP can contain at most one DP argument, licensed as a possessor.

In nominalizations:

- The thematically higher argument (e.g. ERG) may be licensed as a possessor DP.
- The thematically lower argument (e.g. ABS theme) may not be licensed as a possessor DP.

(43) a. pšaše-m Ø-jə-leβε-thač'ə-č'e səg<sup>w</sup> rjehə  
 girl-OBL 3SG.PR-POSS-dish-wash-NML I like

'I like the girl's manner of dish-washing.'

✓ERG→POSS

b. # laβε-me ja-pšeše-thač'ə-č'e səg<sup>w</sup> rjehə  
 dish-PL.OBL 3PL.PR+POSS-girl-wash-NML I like

Intended: 'I like the girls' manner of washing dishes.'

#'I like the dishes' manner of washing girls'

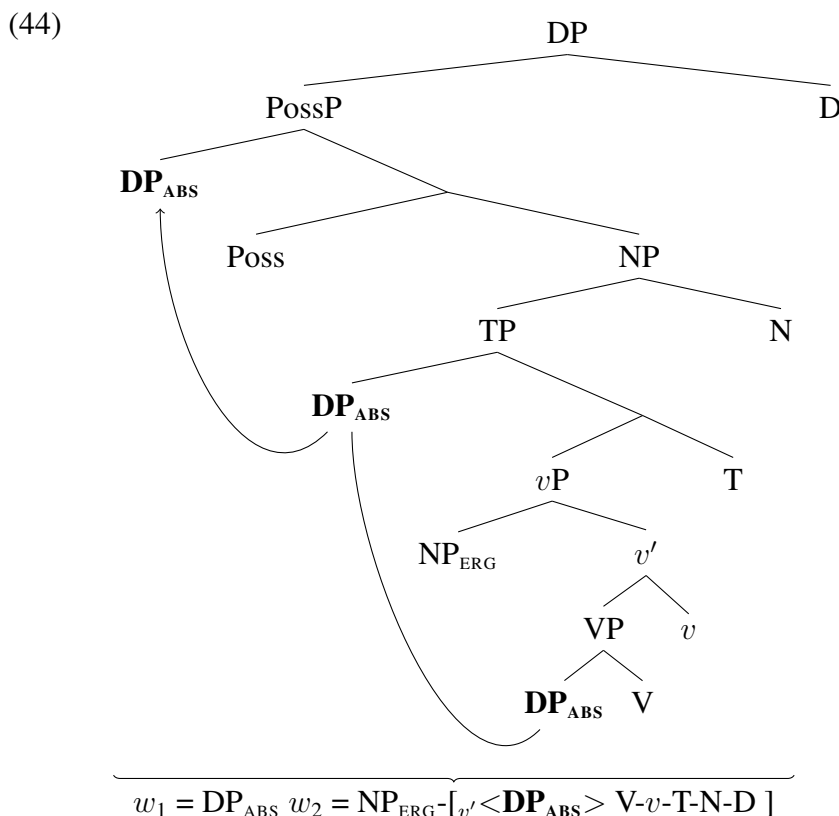
\*ABS→POSS

**But** ABS c-commands ERG! – Why is (43b) bad?

### Hypothesis:

- Per syntax-to-PF rules, DP phase is mapped to a prosodic unit = phonological word.
- DP<sub>ABS</sub> interferes with adjacency because [DP is interpreted as a prosodic boundary even if DP is unpronounced.

Derivation of (43b):



## Revised definition of adjacency:

(45) An NP is licensed by adjacency iff:

NP is pronounced as part of the same phonological word as the head that assigns its theta-role, *i.e. there is no prosodic boundary between NP and the selecting head.*

and NP is pronounced adjacent to the projection of the head that selects it.

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