

Decomposing Prepositional Case

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GOAL:

Derivation of prepositional cases

Semantically, case is a reflection of semantic properties of the decomposed P

Syntactically, case is a result of Agree between the prepositional complement and T-head

Phonologically, case markers result from application of case rules

1. RUSSIAN AND CZECH DATA

- Some prepositions assign only one case:

(1) *ot* + gen *do* + gen *iz* + gen *u* + gen *k* + dat *čerez* + acc (R)
from to out at toward across

(2) *od* + gen *do* + gen *z* + gen *u* + gen *k* + dat *přes* + acc (Cz)
from to out at toward across

- Certain prepositions can assign more cases:

o instrumental/accusative alternation

(3) a. *pod* / *za* *jaščik-ami* (R)
 under / behind box-inst.pl
 b. *pod* / *za* *jaščik-i*
 under / behind box-acc.pl

(4) a. *nad* / *pod* / *před* / *za* *bedn-ami* (Cz)
 above / under / in front of / behind box-inst.pl
 b. *nad* / *pod* / *před* / *za* *bedn-y*
 above / under / in front of / behind box-acc.pl

o locative/accusative alternation

(5) a. *v* / *na* / *o* *stol-e* (R)
 in / on / about table-loc.sg
 b. *v* / *na* / *o* *stol*
 in / on about table.acc.sg

(6) a. *po* / *na* / *o* *stol-e* (Cz)
 along / on / about table-loc.sg
 b. *po* / *na* / *o* *stůl*
 along / on about table.acc.sg

- Russian and Czech also have complex prepositions

(7) a. iz-za stol-a b. iz-pod stol-a (R)
 out-behind table-gen.sg out-under table-gen.sg
 ‘from behind the table’ ‘from under the table’

(8) a. ze-za stol-u b. z-pod stol-u (Cz)
 out-behind table-gen.sg out-under table-gen.sg
 ‘from behind the table’ ‘from under the table’

- Case can also appear in adverbial PPs

(9) a. v-perëd b. s-pered-i c. na-perëd (R)
 in-in.front.of-acc from-in.front.of-gen on-in.front.of-acc
 ‘forward’ ‘from the front’ ‘forward’

(10) a. ve-před-u b. ku-před-u (Cz)
 in-in.front.of-loc.sg toward-in.front.of-dat.sg
 ‘in the front’ ‘forward’
 c. do-před-u d. na-před
 to-in.front.of-gen.sg on-in.front.of.acc.sg
 ‘forward’ ‘ahead’

- The case marker can be spelled out on different categories;

on P (9), (10); DP (11a), (12a); A (11b), (12b); Adv (12c).

(11) a. v Moskv-u b. s-vysok-a (R)
 in Moscow-acc.sg out-high-gen.sg
 ‘to Moscow’ ‘from above’

(12) a. do Prah-y b. z-vysok-a c. z-tam-a (Cz)
 to Prague-gen.sg out-high-gen.sg out-there-gen.sg
 ‘to Prague’ ‘from above’ ‘from there’

2. CASE AND DECOMPOSITION OF PP

2.1 Ps assigning more cases

- ❖ How does the case assignment work in the case of Ps assigning more cases, e.g. (3)-(6)?

- Different cases express different meanings:

- o Locative and instrumental express the stative (locative) meaning
- o Accusative expresses the dynamic (directional) meaning
- o Evidenced by (in)compatibility of particular Ps with stative verbs.

E.g. only instrumental Ps in (4a), not accusative Ps in (4b), are compatible with the stative predicate *stál* (13).

- (13) a. Stál nad / pod / před / za bedn-ami (Cz)
 stood above under in front of behind box-inst.pl
 ‘He stood between/above/under/in front of/behind boxes.’
 b. * Stál nad / pod / před / za bedn-y
 stood above under in front of behind box-acc.pl

- Assumption: Mapping between syntax and semantics
- PPs decomposed into DynamicP: encodes the dynamic (directional) meaning
 StativeP: encodes the stative (locative) meaning
- DynamicP is higher than (contains) StativeP

o Semantically:

Dynamic (directional) Ps are more complex: e.g. Jackendoff (1983), Bierwisch (1988), Kracht (2002, 2008), van Riemsdijk & Huybregts (2002), Zhang (2002), Svenonius (2008).

Jackendoff (1983, 164):

- (14) a. [_{Place} PLACE-FUNCTION ([THING])]
 b. [_{Place} ON ([_{Thing} TABLE])]
 c. [_{Path} PATH-FUNCTION ([_{Place} PLACE-FUNCTION ([THING])])]
 d. [_{Path} FROM ([_{Place} ON ([_{Thing} TABLE])])]

Bierwisch (1988, 34)

- (15) a. Locative *in*: /in/; [-N, -V, -Dir]; $\lambda y \lambda x [\text{LOC } x \subseteq \text{LOC } y]$
 b. Directional *in*: /in/; [-N, -V, +Dir]; $\lambda y \lambda x [\text{FIN } [\text{LOC } x] \subseteq \text{LOC } y]$

Kracht (2002, 159):

Locative expressions universally consist of two layers: L = localiser and M = modaliser.

- (16) [M [L DP]]

The localiser describes the way in which objects are positioned wrt. each other.

The modaliser describes the way in which an object moves wrt. the given configuration.

o Empirically manifested

There are complex dynamic Ps containing a stative P (17), (18).

(*pod*, *za* have a stative meaning there)

But there are no complex stative Ps containing a dynamic P.

- (25) a. ze-za stol-u b. z-pod stol-u (Cz)
 out-behind table-gen.sg out-under table-gen.sg
 ‘from behind the table’ ‘from under the table’

- Case is assigned by the higher (left) P
 since *za* and *pod* assign instrumental and accusative and *z(e)/iz* genitive
 and the complements are marked by genitive
- Thus, the left morpheme spells out Dynam and the right one Stat.
 (They cannot be reversed because *z(e)* has only the dynamic meaning.)

2.3 Adverbial PPs

- ❖ How does the case assignment work in the case of adverbial PPs like (26) and (27)?

- (26) a. v-perěd b. s-pered-i (R)
 in-in.front.of-acc from-in.front.of-gen
 ‘forward’ ‘from the front’

- (27) a. do-před-u b. ku-před-u (Cz)
 to-in.front.of-gen.sg toward-in.front.of-dat.sg
 ‘forward’ ‘forward’

- Case is also determined by the higher P
 ◦ since *pered* assigns only instrumental (26)
 ◦ since *před* assigns instrumental and accusative and *do* genitive, *k(u)* dative,
před cannot assign case in (27)

2.4 The prepositional case and the head T

- According to data, the case-assigning head should know whether or not Dynam projects.
- Stat and Dynam cannot be the case-assigning heads because:
 Dynam should assign case when Stat does not assign case
 Stat should assign case when Dynam does not project
The look-ahead problem: Stat does not know whether or not Dynam will merge
Predictability problem: would not be clear why Stat can sometimes assign case
 and sometimes cannot
- Another possibility: Stat can bear unval unint \emptyset -features (as probes in the case of structural cases)
 and they are optional.

This also cannot solve the dependency between the presence/absence of ϕ -features on Stat and the presence/absence of Dynam (ϕ -features on Dynam).¹

➤ **Proposal:**

Case is assigned by a higher head, which can see all the relevant information.

• I use Biskup's (2009) proposal:

- Cases generally (not only structural) are an unvalued T(ense)-F on D.
- Ps bear unvalued ϕ -Fs and a valued T-F.

This is an extension of Pesetsky & Torrego's (2004, 2006) proposal:

- Structural case is an unvalT-F on D that is valued by T and T₀ (Asp).
- Prepositions bear a valT-F.

Advantages

- All cases are treated uniformly as Agree between T-Fs and ϕ -Fs of the probe and goal (28).

(28)

Structural	T: unval ϕ -Fs and val T-F Asp: unval ϕ -Fs and val T-F (by P, V)	Agree	DP: unval T-F and val ϕ -Fs
Non-structural	P: unval ϕ -Fs and val T-F		

- T-F on Ps relates PP (the prepositional case and the lexical aspect) with the morphological aspect and with the perfective structural accusative.

T-F on P is responsible for different definiteness effects:

- perfectivity (definiteness of the reference time)
- islandhood of PPs (islandhood is related to definiteness)
- islandhood of the perfective structural accusative

¹ See the following table for all possible scenarios:

a. no Dynam. Dynam without ϕ -fsc. Dynam with ϕ -fs1. no Statnot interesting**2. Stat without ϕ -fs**OK3. Stat with ϕ -fsOK** OK cells pose the dependency problem. Cases 1b and 1c are ungrammatical because the presence of the dynamic meaning (Dynam) presupposes the presence of the stative meaning (Stat). Cases 2a and 2b violate the Case Filter because the prepositional complement does not bear a case. Case 3b is bad because the appropriate P would have the dynamic meaning but the prepositional complement would bear a stative case. 3c is bad because ϕ -features on Dynam would be unvalued.

- Analogously to the verbal domain, there is T_P :

(29) $[_{T_P} T_P [_{DynamP} Dynam [_{StatP} Stat [_{DP} N]]]]$

- The dynamic or stative case is not identical for all Ps, see (1)-(6).

The case is determined by the type of the preposition.

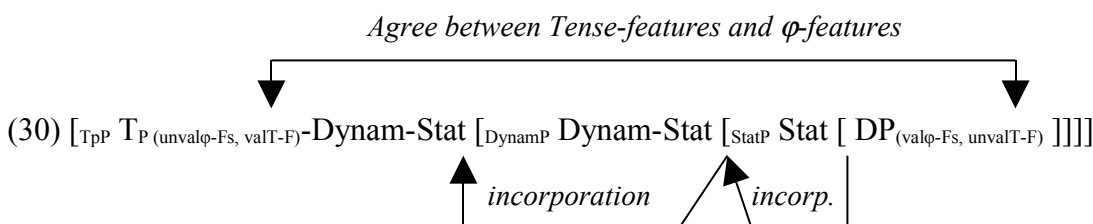
- T_P has to know which case it shall assign.

o Ensured by incorporation of Stat and Dynam into T_P .

Should not be a problem because Ps can incorporate into a higher category: verb (see Biskup (to appear) for arguments that prefixes are incorporated Ps)

Bošković (2004): PPs have a layered structure similar to CP and P incorporates into higher heads.

- Case assignment in a dynamic PP: 1. Incorporation, 2. Agree between T_P and DP



o Supported by the fact that there are languages with P agreement: Irish, Welsh, Jacaltec, Abaza (Baker 2008, Brennan 2008) and with tensed prepositions like Titan or Māori (Bowerm & Aygen-Tosun 2000, Harlow 2007).

2.5 LOC and LocP

- Semantics of PPs is more complex; see e.g. Lang (1991), Wunderlich & Herweg (1991), Bierwisch (1996), Kracht (2008).

- Lang's (1991, 129) lexical meaning of locative prepositions:

(31) $\lambda y \lambda x (LOC(x, REG^*(y)) \dots)$

REG* is a set of functions; they assign a neighbourhood region to object y.

LOC localizes the object x wrt the region of y.

- Similarly, Wunderlich & Herweg's (1991, 777) meaning of stative Ps:

(32) $\lambda y \lambda x LOC(x, PR\ddot{A}P^*(y))$

(Compare Svenonius' (2008) PlaceP and AxPartP.)

- There are language expressing LOC overtly: English, Hebrew, Japanese, Korean, Tzeltal (Bierwisch 1996, Botwinik-Rotem 2008, Svenonius 2008)
- Dynamic PPs contain the operator CHANGE (BECOME); see e.g. Dowty (1979), Wunderlich & Herweg (1991), Bierwisch (1996), Stiebels (1996).

(33) $\lambda y \lambda x \text{ CHANGE}(\text{LOC}(x, \text{PRÄP}^*(y)))$

It identifies the transition and takes the final state as its argument.

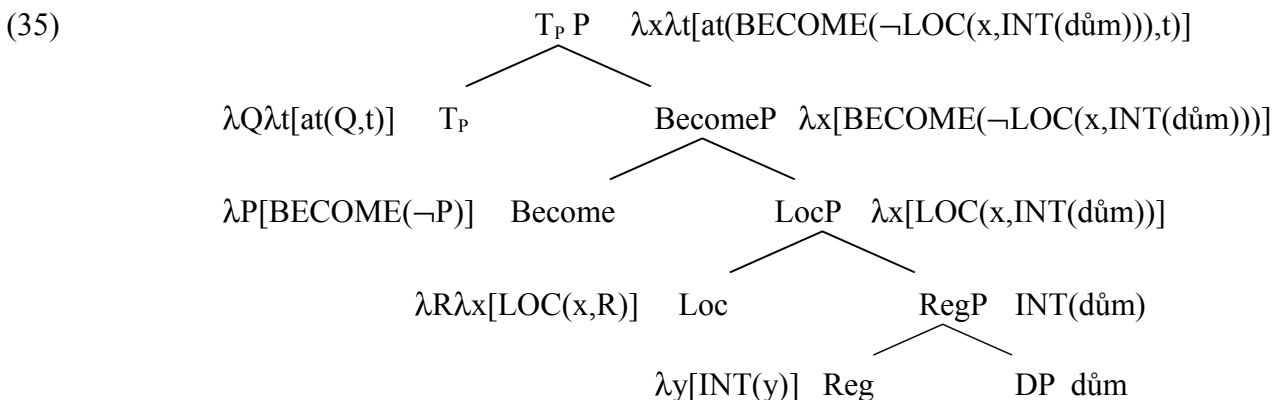
- Following the region semantics tradition, I assume the syntactic structure (34)

(34) $[_{TP} \text{ TP } [_{\text{BecomeP}} \text{ Become } [_{\text{LocP}} \text{ Loc } [_{\text{RegP}} \text{ Reg } [_{\text{DP}} \text{ N }]]]]]]$

BecomeP: the former DynamP

Reg(ion)P: the former StatP

- E.g. for LF of *iz doma / z domu* ‘out of the house’, I propose:



- The time is identified either with the reference time (PPs as verbal adjuncts) or with the event time (PPs as adjuncts or complements of V).

For time in PPs, see e.g. Stechow (2006, 2007, 10): $[[\text{auf}]] = \lambda w. \lambda x. \lambda l. \lambda t. x \text{ is on } l \text{ in } w \text{ at } t.$

2.6 Prepositional complements

- When the prepositional complement is overt (36a), case is spelled out on it.
- If there is no noun (36b-d), case is spelled out on a higher category: A, Adv, P.

(36) a. v Moskv-u b. z-vysok-a c. z-tam-a d. do-před-u
 in Moscow-acc.sg out-high-gen.sg out-there-gen.sg to-in.front.of-gen.sg
 ‘to Moscow’ ‘from above’ ‘from there’ ‘forward’

➤ **Claim**

There is a covert noun complement in PPs like *z-vysok-a*, *z-tam-a* and *do-před-u*

Arguments:

- The consistent case behavior of *dopředu*, *zvysoka*, *ztama* PPs

It bears nominal cases of the masc. paradigm *hrad* ‘castle’ and *město* ‘city’.

Case is a reflection of Agree between φ -features and T-Fs

There must be φ -features, which ensure that case endings are always of the appropriate paradigm

- The noun is visible in certain cases; *-ek* spells out N:

(37) a. *před-ek-0* b. *do před-k-u* (cf. Russian *predok* ‘ancestor’)
in.front.of-N-nom.sg to in.front.of-N-gen.sg
‘the front’ ‘to the front’

- PPs like *do-před-u*, *ku-před-u*, *ztama* etc. refer to a certain place.

Hence there should be a (covert) referential element.

(38) a. *před-ek*: the place in the front
b. *do-před-0-u*: to the place in the front

- There is indeed a preposition containing *place*:

(39) *na-míst-o* + gen (cf. Russian *v-mest-o* ‘in place of’)
on-place-acc.sg
‘in place of’

- Another support for a covert N in adverbial PPs comes from case marking.

Adverbial PPs mostly assign genitive (if they can), i.e., the case of nominal complements.

(40) *ze-zad-u* *místnost-i* (cf. Russian *s-zad-i dom-a* ‘from the back of the house’)
out-behind-gen.sg room-gen.sg
‘from the back of the room’

- There is indeed a relation between nouns of the paradigm *město* (41a) and adverbials of the paradigm *město* (41b).

(41) a. *Ráno miluju.* b. *Přišel ráno.*
morning like came morning
‘I like mornings.’ ‘He came in the morning.’

- N *město* (*kolo*) is visible in instrumental PP *kol-em* (42a) and accusative PP *o-kol-o* (42b).

Okolo and *kolem* assign genitive, the case of nominal complements.

(42) a. *kol-em* + gen b. *o-kol-o* + gen
circle-inst.sg about-circle-acc.sg
‘around/along’ ‘around/along’

- Caha & Medová (2009): manner adverbs derived from adjectives like *rychl-e* ‘fast’ bear the locative case of the paradigm *město* ‘city’ and adverbs like *smutn-o* ‘sadness’ nominative or accusative.

Arguments: parallelism between resultatives and the adverbs in the active and passive, allomorphy, crosslinguistic data.

- Doetjes (1997): Q-adverbs contain nominal material which forms the restrictor of the tripartite quantificational structure: Q [_{restrictor} noun][_{nucleus} VP].

The reason why Q-adverbs cannot combine with nouns.

This holds for *z-řídka-a*, which is a Q-adverb; compare (43a) with (43b).

The pure adjective *řídka-á* is OK (39c).

- (43) a. *Zřídka zpívá nahý.*
 seldom sings naked
 ‘He seldom sings naked.’
 b. **zřídka píseň*
 seldom song
 c. (v rádiu) *řídka píseň*
 (in radio) rare song

The same holds for Q-adverb *často-o*, which contains the covert N *město*, too.

- (44) a. *Často zpívá doma.*
 often sings at home
 ‘He often sings at home.’
 b. **často píseň*
 often song
 c. *častá píseň*
 frequent song

In Russian, the noun is visible; see the masculine *raz*:

- (45) a. *mnogo raz*
 many time
 ‘often’

- The covert N *město* is also present in wh-PPs and deictic PPs
 See the genitive *-a* in *z-kam-a* ‘from where’ *z-tam-a* ‘from there’.
- Old Czech (and Proto-Slavic) has *sem-o* ‘here’, *tam-o* ‘there’ (Vasmer 1976-1980, Rusínová 1984)
o: nom and acc of *město*.
- Vangsnes (2008): Scandinavian whPs ‘how’ contain an abstract nominal morpheme WAY.
- Kayne (2004): *here* and *there* modify the empty noun PLACE which has a null determiner (46a).

PLACE can be overt in some dialects of English.

The same holds for Czech (46b).

- (46) a. [_{DP} THAT [_{NP} there PLACE]]
b. tam-to místo
there-that place

- More interesting analysis: decomposition of *t-a-m* (*k-a-m* ‘where’, *s-e-m* ‘here’, *on-a-m* ‘over there’ ...): *t-* is a deictic morpheme
-m expresses the noun N (place)

Arguments:

pronominal *-m* adverbs refer to a place: *sem* ‘here’, *tam* ‘there’ *onam* ‘over there’, *kam* ‘where’
-m forms m-participles from verbs in Old Czech (Rusínová 1984); cf. Russian *-m-* participles.
Pásmo ‘zone, tape’ possibly derived from ie. *pes-*, *pēs-* ‘fly, flap’ (Rejzek 2001).

- Then, the syntactic structure of PPs:

- (47) [_{TpP} T_P [_{BecomeP} Become [_{LocP} Loc [_{RegP} Reg [_{DP} N_{overt/covert}]]]]]

3. CASE IN THE SYNTACTIC DERIVATION

3.1 Generally

❖ Derivation of case:

- Lexical entries:

Chomsky (1995, 394): syntactic objects are triples of features, semantic, syntactic and phonological.

➤ Correspondence between semantic properties of heads in PP and their syntactic features

- Syntax:

➤ Syntactic features of heads incorporated into T_P represent the value(s) of T-F on T_P
These values are copied on DP by Agree (T_P, DP)

- PF:

➤ Given case rules, the values are spelled out as a case

- Advantage

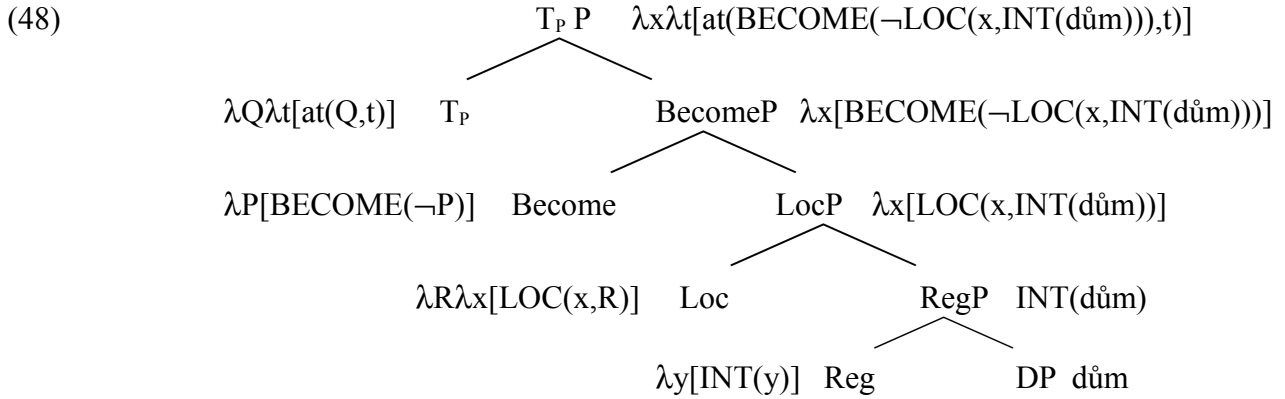
The relation between Ps and their case(s) is not idiosyncratic

Case is based on semantic properties of heads in the decomposed PP (case has meaning)

3.2 Semantics of PPs and case rules

❖ Source Ps

- LF of *iz* / *z* ‘out’:



- Correspondence between semantics and syntactic features

INT corresponds to the syntactic internal-F on Reg

$\lambda P [\text{BECOME}(\neg P)]$ corresponds to the syntactic source-F on Become

- Case rule

All source Ps assign genitive, hence the case rule (49)

(49) [source, x] \rightarrow genitive (x is a variable over syntactic features)

DP with such features is spelled out with genitive

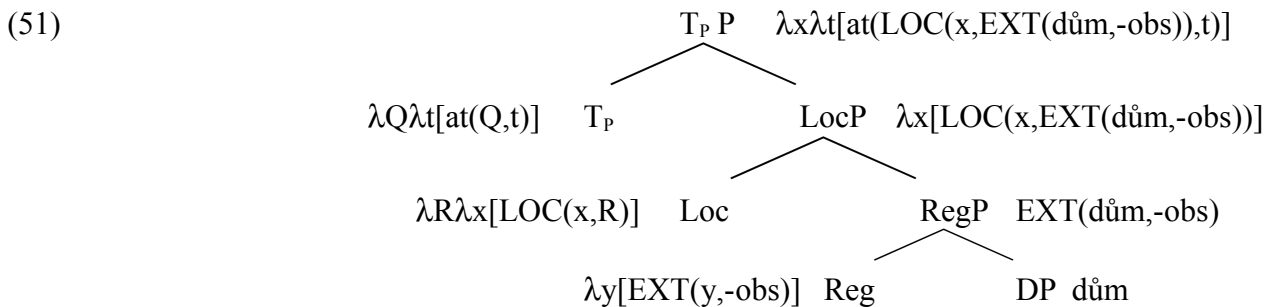
❖ Stative Ps

- LF of stative *za* / *za* ‘behind’

Lang (1991): lexical entry of *hinter* ‘behind’:

(50) $\lambda y \lambda x \text{LOC}(x, \text{EXT}(y, \text{-obs}))$

obs is the observer axis, *+obs* is for *vor* ‘in front of’



- Syntactic features

EXT corresponds to the syntactic external-F on Reg

\pm obs axis (and \pm vertical axis for *pod* and *nad*) corresponds to projective-F on Reg

- Case rule

Since projective Ps assign instrumental, hence the case rule (52)

(52) [projective] \rightarrow instrumental

DP with this feature is spelled out with instrumental

- LF of stative *pered* / *před* ‘in front of’ is like (51) with +obs:

(53) $\lambda x \lambda t [\text{at}(\text{LOC}(x, \text{EXT}(\text{dũm}, +\text{obs})), t)]$

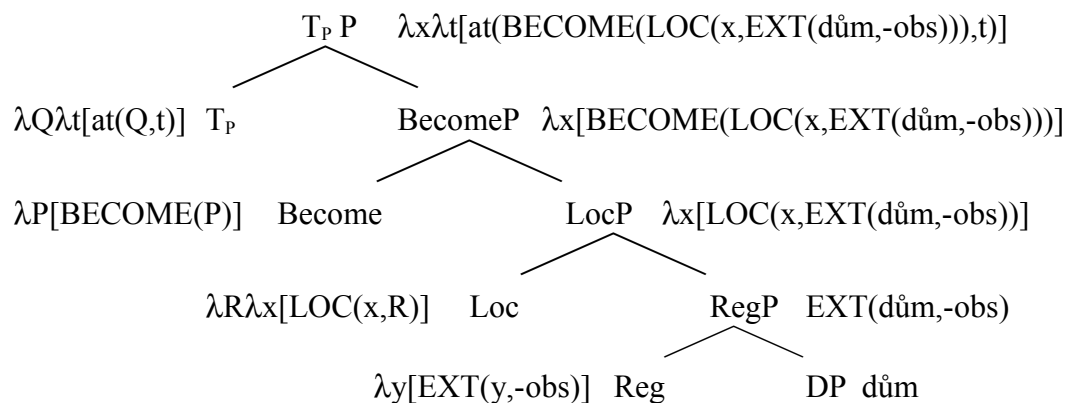
Syntactic features and the case rule as in the case of *za*.

❖ **Goal Ps**

- LF of goal *za* / *za* ‘behind’

Like stative *za* (51) + positive BECOME:

(54)



- Syntactic features

EXT corresponds to external-F on Reg

-obs corresponds to projective-F on Reg

$\lambda P[\text{BECOME}(P)]$ corresponds to goal-F on Become

- Case rule

Goal Ps mostly assign accusative, hence:

(55) [goal, x] \rightarrow accusative

- There are also goal Ps with other cases, like *do* assigning genitive

- LF of goal *do* ‘to’

Like semantics of *iz / z* (48), but with positive BECOME

- o Syntactic features

INT corresponds to internal-F on Reg

$\lambda P[\text{BECOME}(P)]$ corresponds to goal-F on Become

- o Case rule

Since *do* assigns genitive, hence the case rule (56)

(56) [goal, internal] \rightarrow genitive

- Assumption: Application of case rules is determined by the Subset Principle (DM)

- Rule (56) ([goal, internal] \rightarrow genitive) is more specific than rule (55) ([goal, x] \rightarrow accusative)

Hence genitive (not accusative) is spelled out with *do*

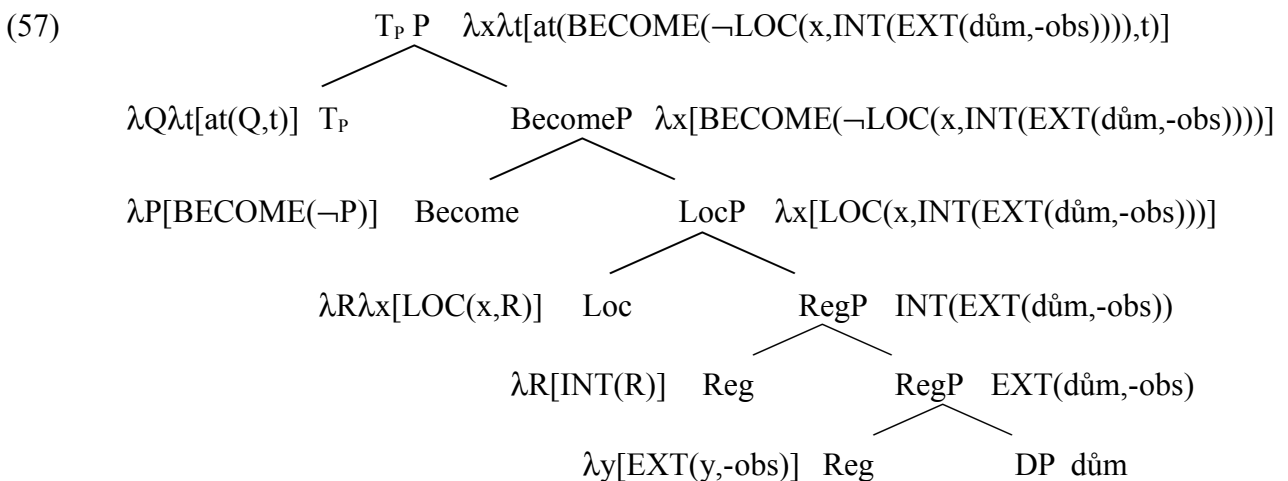
- Rule (55) ([goal, x] \rightarrow accusative) is more specific than rule (52) ([projective] \rightarrow instrumental)

Hence accusative (not instrumental) is spelled out with goal *za*

❖ **Complex Ps**

- LF of *iz-za / zeza* ‘from behind’

za and *iz / ze* merged as Reg



- Syntactic features

EXT corresponds to external-F

-obs corresponds to projective-F

INT corresponds to internal-F

$\lambda P[\text{BECOME}(\neg P)]$ corresponds to source-F

- Case rule

Given case rule (49), which is more specific than (52), genitive appears

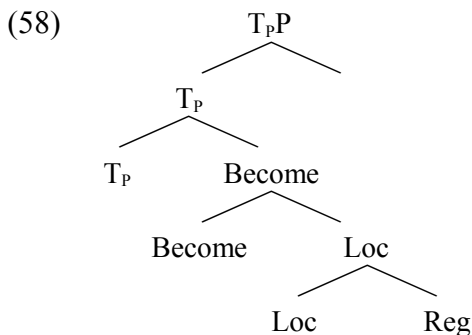
(49) [source, x] \rightarrow genitive

(52) [projective] \rightarrow instrumental

3.3 The syntactic derivation, PF and LF

- Given that Become is higher than Reg, incorporation happens to the right (see e.g. *do-před-u* ‘forward’, *iz-za* ‘from behind’)

- The complex head T_p :



➤ **Claim**

Case is spelled out in accordance with the linearized syntactic structure, on the closest overt element.

- If N is overt, case is spelled out on N.

o The syntactic derivation of *do Prahy* ‘to Prague’ is in (59a):

T-F on DP is valued as [goal, internal] through Agree with T_p

o PF in (59b):

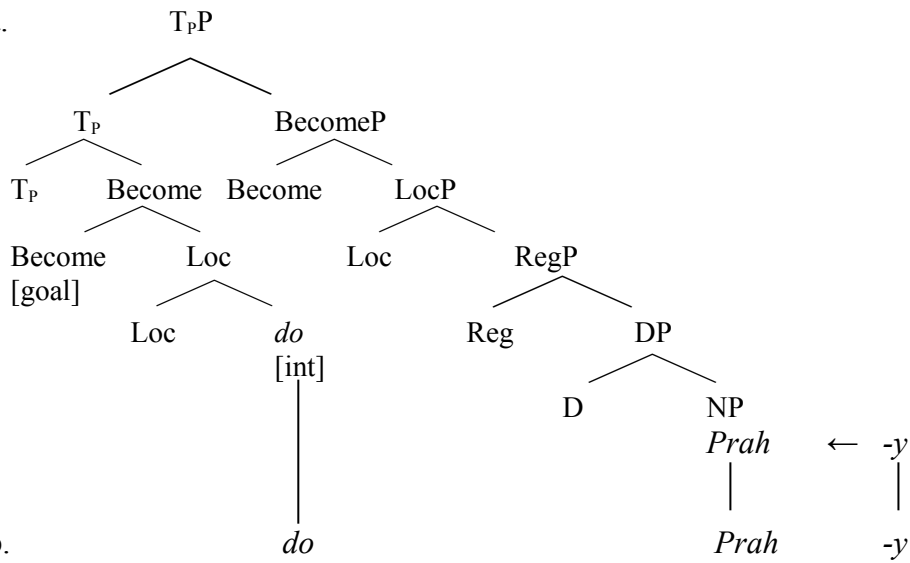
Given the case rule (56) ([goal, internal] \rightarrow genitive), DP gets genitive

Praha is a feminine N of the paradigm *žena* ‘woman’, hence marker -y

There is N *Prah* in DP, hence -y is suffixed to it

o LF in (59c)

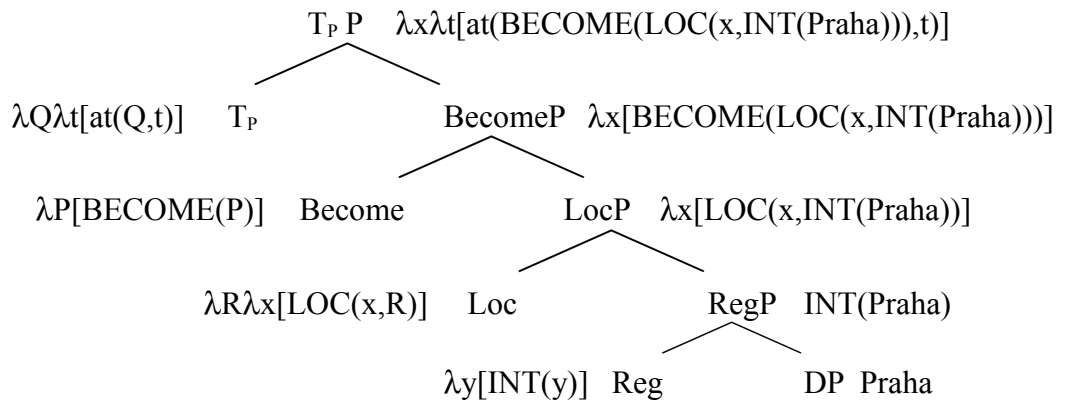
(59) a.



b.



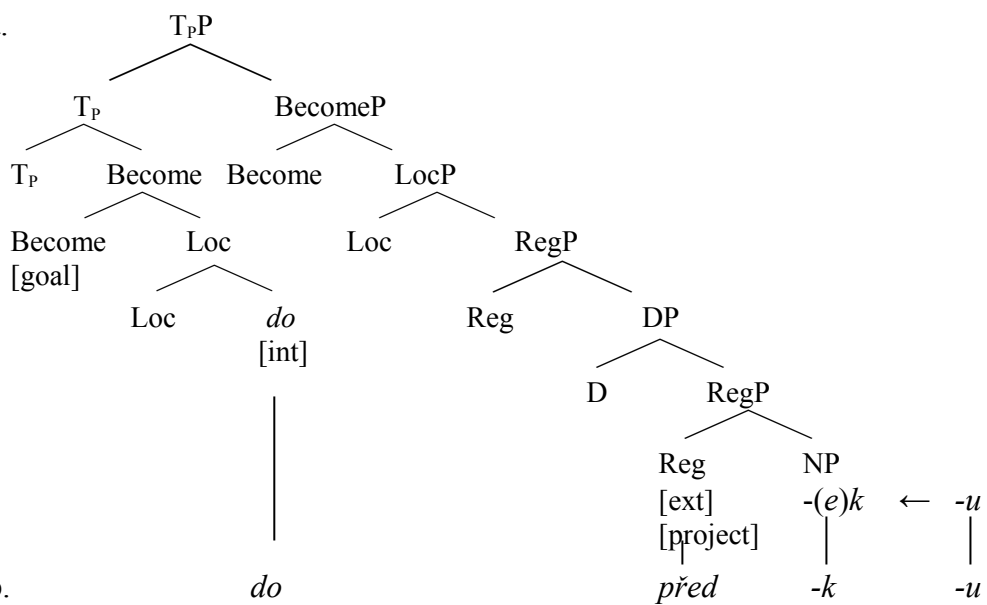
c.



o The syntactic derivation of *do předku* ‘to the front’ (60a)

T-F on DP is valued as [goal, internal] through Agree with T_p

(60) a.



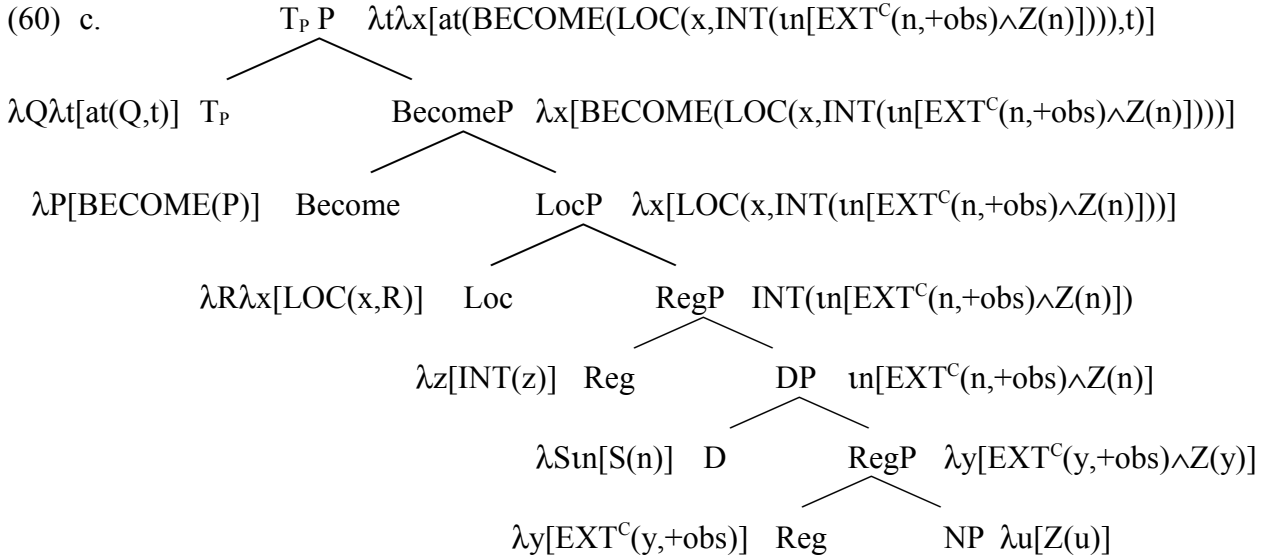
b.



o PF of *do předku* in (60b):

Given the case rule (56) ([goal, internal] → genitive), DP gets genitive
 -(e)k is a masculine N of the paradigm *hrad* ‘castle’, hence genitive -u
 The closest overt element is N -(e)k

o LF of *do předku* in (60c):



- If N is covert, case is spelled out on the closest non-N element
- E.g. on P:

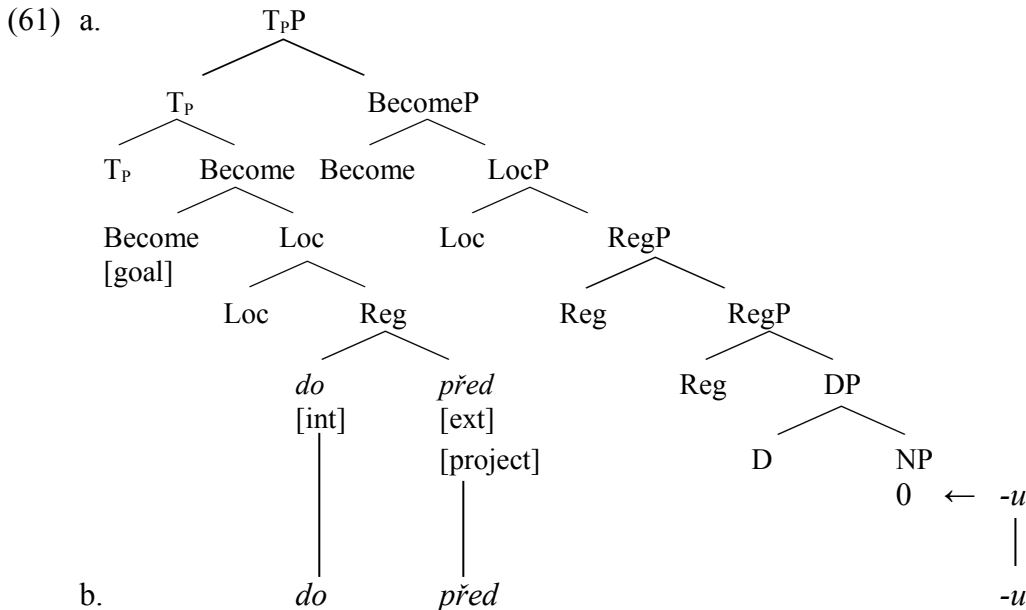
o Derivation of *dopředu* ‘forward’ in (61a)

T-F on DP is valued as [goal, internal, external, projective]; given (56) → genitive

o PF in (61b):

There is a covert N of the paradigm *hrad*, hence -u

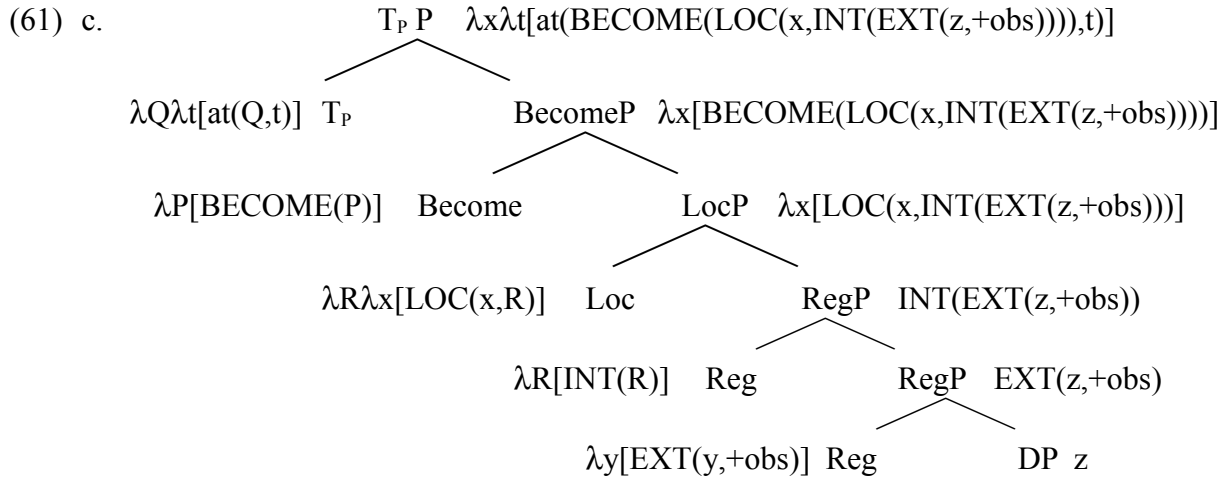
Since there is no overt element in DP, -u is suffixed to the closest P: *před*



o LF of *dopředu* in (61c):

‘z’ is a free variable, interpreted by the context

‘z’ is usually the speaker or the subject



• Spellout on a modifier

o If an adjective is present in DP, case is spelled out on the adjective.

o See the derivation of *zvyšoka* ‘from above’ in (62a)

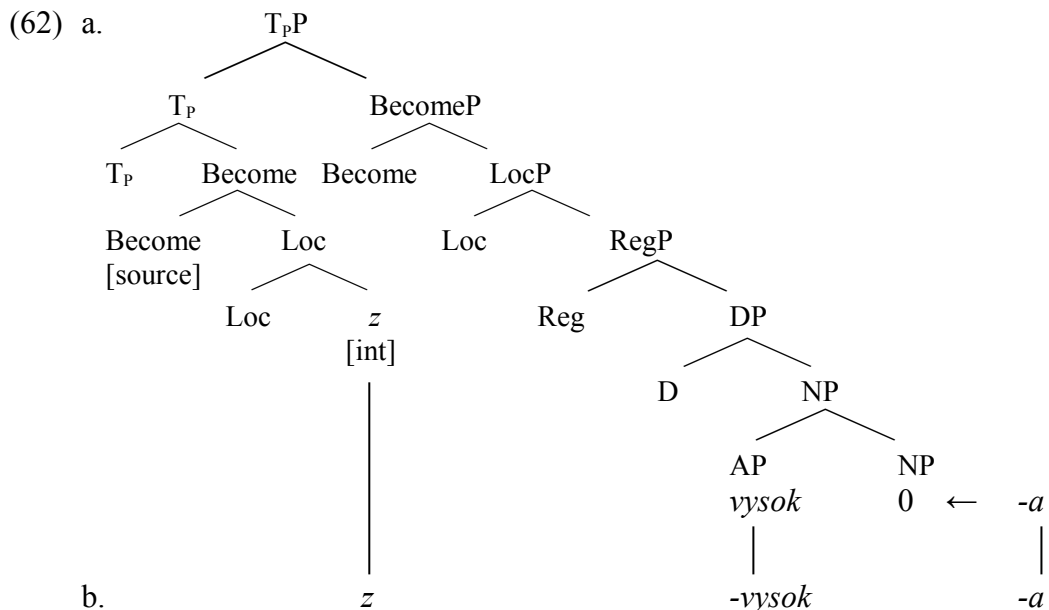
DP is valued as [source, internal] through Agree with T_P

o PF in (62b)

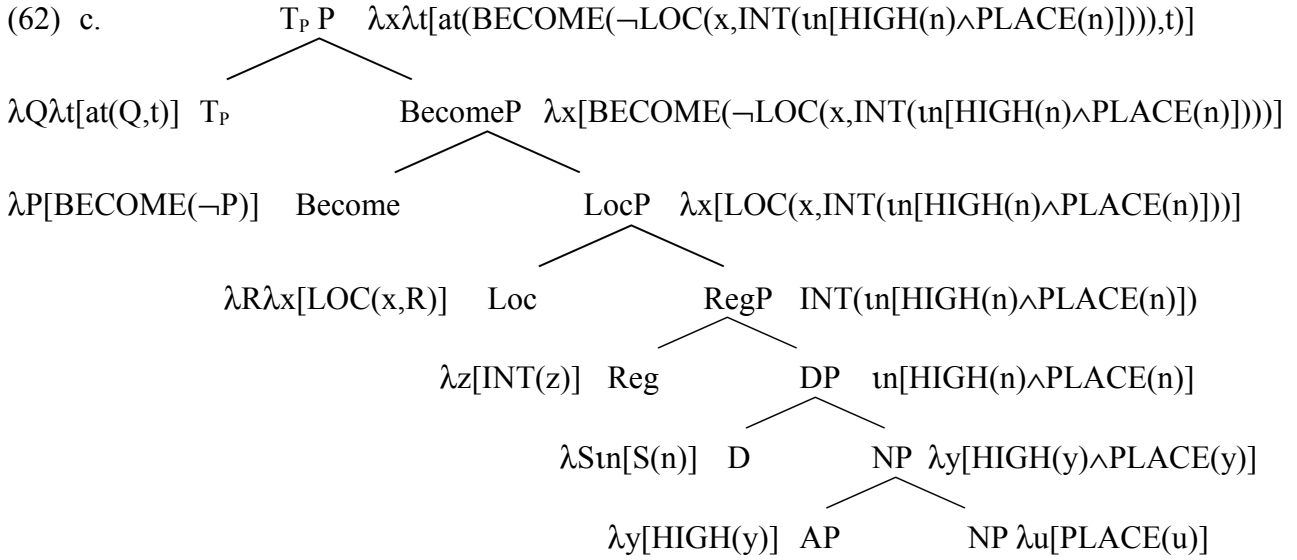
Given the case rule (49): [source, x] → genitive, DP gets genitive

There is a covert N of the paradigm *město* ‘city’, hence *-a*

vysok is the closest overt element for *-a*



o LF of *zvysoka* in (62c)



• Spellout on a decomposed adverb

o Syntactic derivation of *ztama* ‘from there’ in (63a)

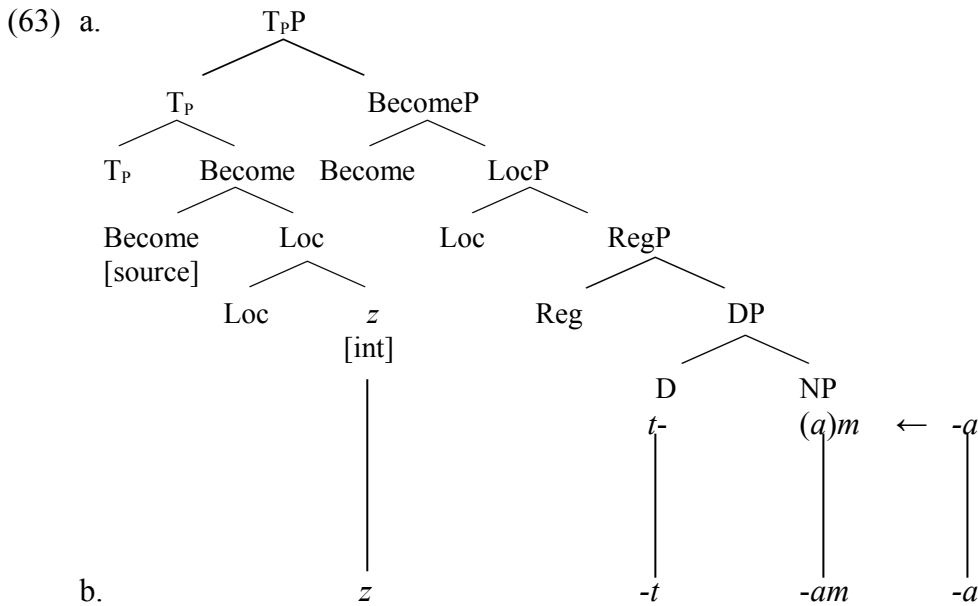
DP is valued as [source, internal] through Agree with T_p

o PF in (63b)

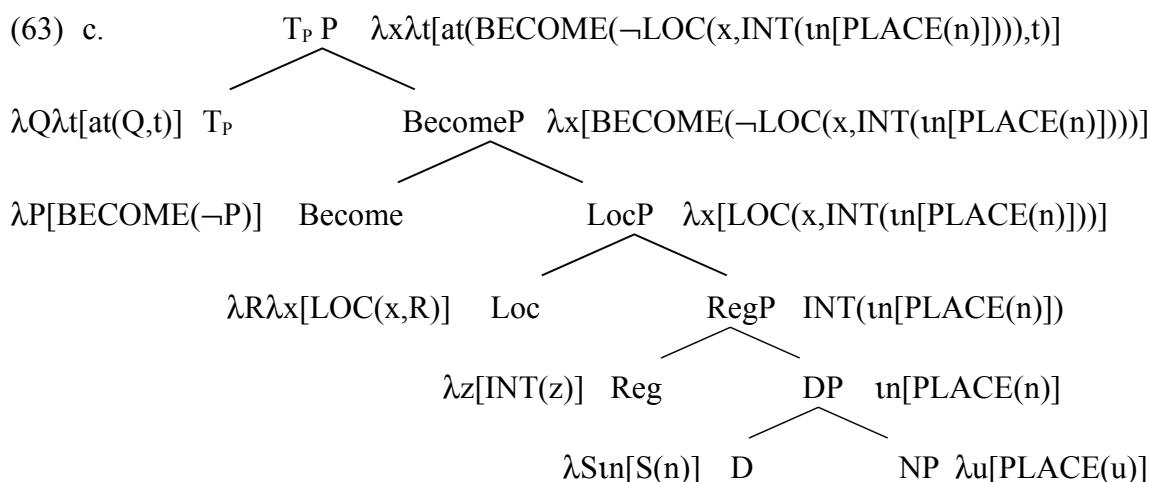
Given the case rule (49): [source, x] → genitive, DP gets genitive

-*m* is N of the paradigm *město* ‘city’, hence -*a*

-*m* is the closest overt element for -*a*



o LF of *ztama* in (63c):



4. CONCLUSION

The prepositional case is determined by semantic properties of particular prepositional heads.

It is a result of the operation Agree between T_P and the prepositional complement.

The prepositional complement can be overt as well as covert.

Case is spelled out on the closest overt element in PP.

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