

Decomposing Prepositional Cases in Russian and Polish

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This paper is concerned with prepositional cases in Russian and Polish. It treats prepositional cases on a par with structural cases as a reflection of the operation Agree between ϕ -features and Tense-features. The type of the assigned prepositional case is determined by semantic properties of particular heads of the decomposed preposition. There is a correspondence between semantic properties of particular heads and their syntactic features. Syntactic features of heads incorporated into the case assigning head are copied on the prepositional complement by Agree. At the level of PF, these features are spelled out as a case by means of a specific vocabulary insertion rule. This approach derives case properties of simple and complex prepositions as well as adverbial prepositions.

1. Prepositions and their case properties

It is known that prepositions can assign different cases and that often one case is used for the stative meaning and another one for the dynamic meaning. This pattern can also be observed in Slavic languages, as shown below for Russian and Polish.

Švedova et al. (1980) lists twenty four simple primary prepositions for Russian. Most of them (fifteen) assign one case: *bez* ‘without’, *dlja* ‘for’, *do* ‘to’, *iz* ‘out’, *k* ‘towards’, *krome* ‘except’, *nad* ‘above’, *ot* ‘away’, *pered* ‘in front of’, *pred* ‘in front of’, *pri* ‘at’, *pro* ‘for’, *radi* ‘for’, *u* ‘at’, *čerez* ‘over’; as an illustration consider (1).

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|---|---|---|
| (1) a. <i>do avtomobil-ja</i>
to car-GEN.SG
‘to the car’ | b. <i>iz avtomobil-ja</i>
out car-GEN.SG
‘out of the car’ | c. <i>k avtomobil-ju</i>
toward car-DAT.SG
‘toward the car’ |
| d. <i>ot avtomobil-ja</i>
away car-GEN.SG
‘away from the car’ | e. <i>u avtomobil-ja</i>
at car-GEN.SG
‘at the car’ | f. <i>čerez avtomobil’</i>
over car.ACC.SG
‘over the car’ |

Seven prepositions assign two cases (*v* ‘in’, *za* ‘behind’, *mež* ‘between’, *meždu* ‘between’, *na* ‘on’, *o* ‘about’, *pod* ‘under’) and two prepositions assign three cases (*po* ‘along’, *s* ‘from’). Except the prepositions *mež* and *meždu*, all these prepositions express the difference between the locative/stative and directional/dynamic meaning; consider the stative meaning of the instrumental and locative prepositional phrases in (2a) and (3a) and the dynamic meaning of the accusative prepositional phrases in (2b) and (3b). This difference is confirmed by the (in)compatibility of particular prepositional phrases with stative verbs like *ležat’* ‘lie’, as shown in (2c,d) and (3c,d) for prepositions assigning two cases.¹

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¹ *O* is incompatible with positional verbs like *ležat’* (which also holds for Polish, as shown below) but it can combine with other stative verbs like *pomnit’* ‘remember’: *pomnit’ o stole* / **pomnit’ o stol*.

- (2) a. *pod / za jaščik-ami*
under / behind box-INST.PL
b. *pod / za jaščik-i*
under / behind box-ACC.PL
- c. *ležat' pod / za jaščik-ami*
lie under / behind box-INST.PL
d. **ležat' pod / za jaščik-i*
lie under / behind box-ACC.PL
- (3) a. *v / na / o stol-e*
in / on / about table-LOC.SG
b. *v / na / o stol*
in / on / about table.ACC.SG
- c. *ležat' v / na stol-e*
lie in / on table-LOC.SG
d. **ležat' v / na stol*
lie in / on table.ACC.SG

As to prepositions assigning three cases, consider, for instance, the difference between the stative meaning of the instrumental and locative prepositional phrases in (4a) and (5a) and the dynamic meaning of the genitive and accusative prepositional phrases in (4b) and (5b).²

- (4) a. *stakan s vod-oj*
glass with water-INST.SG
'a glass with water'
b. *veter s jug-a*
wind from south-GEN.SG
'wind from the south'
- (5) a. *po przyezd-e*
after arrival-LOC.SG
'after the arrival'
b. *po pojas*
to waist.ACC.SG
'up to waist'

A similar pattern can be observed in Polish. Bartnicka et al. (2004) lists seventeen primary prepositions (some authors present a more extensive list of prepositions but they also include compound prepositions, e.g. Skibicki 2007, or they list primary and secondary prepositions together, e.g. Kaleta 1995 and contrastive grammar books like Engel et al. 1999, Rytel-Schwarz et al. 2012).³ Eight of them assign one case: *bez* 'without', *dla* 'for', *do* 'to', *ku* 'towards', *od* 'away', *przez* 'through', *przy* 'at', *u* 'at', six assign two cases: *na* 'on', *nad* 'above', *o* 'about', *pod* 'under', *przed* 'in front of', *w* 'in' and three assign three cases: *po* 'on', *z* 'from', *za* 'behind'.

As to prepositions assigning one case, consider (6), analogous to the Russian examples in (1). There are three differences: since Polish does not have *iz*, *z* is used in (6b); in the 'toward' meaning in (6c), *do* must be used instead of *ku* (*samochodowi*); and in the 'at' meaning in (6e), *przy* (or *koło*) must be used instead of *u* since the adessive *u* in cases like *u samochodu* is judged as archaic or bookish (Markowski 2000 et al.).

- (6) a. *do samochodu*
to car-GEN.SG
'to the car'
b. *z samochodu*
from car-GEN.SG
'out of the car'
c. *do samochodu*
to car-GEN.SG
'toward the car'

² As to the third cases, the preposition *s* also assigns the approximative accusative and *po* also assigns dative, which can convey various meanings, e.g., the distributive meaning, the reason meaning, the motion along a surface.

³ Prepositions do not receive much attention in Polish grammars. For instance, grammars like Szober (1957), Grzegorzczkova et al. (1984), Wróbel (2001) and Bąk (2010) discuss prepositions only in connection with other phenomena like parts of speech, nominal cases, the verbal selection and they do not offer a complete overview.

- | | | |
|--|--|---|
| d. <i>od samochod-u</i>
away car-GEN.SG
'away from the car' | e. <i>przy samochodzi-e</i>
at car-LOC.SG
'at the car' | f. <i>przez samochód</i>
over car.ACC.SG
'over the car' |
|--|--|---|

Concerning prepositions assigning two cases, consider the accusative-instrumental alternation in (7) and the accusative-locative alternation in (8). Similarly to Russian, instrumental and locative prepositional phrases have the stative meaning and accusative prepositional phrases have the dynamic meaning.⁴

- (7) a. *nad / pod / przed skrzyni-ami*
above / under / in.front.of box-INST.PL
b. *nad / pod / przed skrzyni-e*
above / under / in.front.of box-ACC.PL
c. *leżeć nad / pod / przed skrzyni-ami*
lie above / under / in.front.of box-INST.PL
d. **leżeć nad / pod / przed skrzyni-e*
lie above / under / in.front.of box-ACC.PL
- (8) a. *w / na / o stol-e*
in / on / about table-LOC.SG
b. *w / na / o stół*
in / on / about table.ACC.SG
c. *leżeć w / na stol-e*
lie in / on table-LOC.SG
d. **leżeć w / na stół*
lie in / on table.ACC.SG

In contrast to Russian, Polish stative prepositional phrases like (7a) can also combine with certain dynamic verbs and denote the result location of the figure argument. This, however, does not mean that the prepositional phrases contain a dynamic meaning (cf. Przybylska 2002).

Prepositions assigning three cases also express the difference between the stative and dynamic meaning, as shown by the difference between the locative and instrumental prepositional phrases in (9a), (10a) and (11a) and the accusative and genitive prepositional phrases in (9b), (10b) and (11b). The dynamic meaning of the examples in (b) is based on the presence of a scale, path and trajectory.

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|--|---|
| (9) a. <i>po obiedzi-e</i>
after lunch-LOC.SG
'after the lunch' | b. <i>po kolan-a</i>
to knee-ACC.PL
'knee deep' |
|--|---|
-
- | | |
|---|---|
| (10) a. <i>kolega z jabłk-ami</i>
colleague with apples-INST.PL
'a colleague with apples' | b. <i>jabłka z prowincj-i</i>
apples from province-GEN.SG
'apples from the province' |
|---|---|

⁴ In Polish, too, the preposition *o* cannot combine with the verb 'lie' because of its abstract meaning.

- (11) a. *strzelać za dom-em*
 shoot behind house-INST.SG
 ‘shoot behind the house’
 b. *strzelać za dom*
 shoot behind house.ACC.SG
 ‘shoot at sth. behind the house’

Both languages also have complex prepositions consisting of two (or three) prepositions, as in (12) and (13), and adverbial prepositions, consisting of two (or three) prepositions or of a preposition and an element belonging to another word class, as shown in (14) and (15).

- (12) a. *iz-za stol-a*
 out-behind table-GEN.SG
 ‘from behind the table’
 b. *iz-pod stol-a* (R)
 out-under table-GEN.SG
 ‘from under the table’
- (13) a. *s-przed stol-u*
 from-in.front.of table-GEN.SG
 ‘from in front of the table’
 b. *z-nad stol-u* (P)
 from-above table-GEN.SG
 ‘from above the table’
- (14) a. *v-pered-i drugich*
 in-in.front.of-LOC.SG others.GEN.PL
 ‘in front of the others’
 b. *s-zad-i dom-a* (R)
 from-back-GEN.SG house.GEN.SG
 ‘from behind the house’
- (15) a. *po-środk-u stol-u*
 on-middle-LOC.SG table-GEN.SG
 ‘in the middle of the table’
 b. *do-kol-a stol-u* (P)
 to-circle-GEN.SG table-GEN.SG
 ‘around the table’

The prepositional case marker can attach to various categories, for instance, to a noun, as in (16a) and (17a), to an adjective, as in (16b) and (17b), to a preposition, as in (16c), and to a deictic pronoun or adverb, as in (17c).

- (16) a. *v Moskv-u*
 in Moscow-ACC.SG
 ‘to Moscow’
 b. *s-vysok-a*
 from-high-GEN.SG
 ‘from above, haughtily’
 c. *po-sred-i* (R)
 on-amidst-DAT.SG
 ‘in the middle of’
- (17) a. *do-kol-a*
 to-circle-GEN.SG
 ‘around’
 b. *do syt-a*
 to sated-GEN.SG
 ‘to one’s fill’
 c. *przed-t-em* (P)
 in.front.of-it-INST.SG
 ‘earlier’

In the light of these facts, the question arises how the various case assigning properties and their corresponding meanings are derived in the minimalist approach.

The remainder of the paper is structured as follows. In section 2, I decompose prepositions into several projections and discuss syntactic and semantic properties of these projections. I am mainly concerned with spatial prepositions. Section 3 shows how prepositional cases are assigned. It establishes the relation between the meaning of particular projections and their syntactic features and proposes vocabulary insertion rules for particular cases.

2. Case and the internal structure of prepositional phrases

2.1 Dynamic phrases are more complex than stative phrases

According to the literature, dynamic prepositional phrases are more complex than stative prepositional phrases (see e.g. Jackendoff 1983, Bierwisch 1988, Wunderlich and Herweg 1991, Kracht 2002, 2008, Van Riemsdijk and Huybregts 2002, Zhang 2002, Den Dikken 2010). This view is supported by the following data.

First, there are complex dynamic prepositions containing a stative preposition, as in (12) and (13), but there are no complex stative prepositions containing a dynamic preposition. In the same vein, dynamic wh-adverbs can be derived from stative wh-adverbs, as shown for temporal adverbs below. On the contrary, there are no examples of stative wh-adverbs derived from dynamic wh-adverbs.⁵

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|---------|--------------|----|-----------------|----|-----------------|-----|
| (18) a. | <i>kiedy</i> | b. | <i>do kiedy</i> | c. | <i>od kiedy</i> | (P) |
| | when | | to when | | from when | |
| | ‘when’ | | ‘till when’ | | ‘since when’ | |

The same also holds for complex adverbial prepositions. Dynamic prepositions, as in (19b,c) and (20b,c), contain a stative preposition, as in (19a) and (20a), but there is no stative adverbial preposition containing a dynamic preposition.⁶

- | | | | | | | |
|---------|---------------|----|-----------------------|----|-------------------------|-----|
| (19) a. | <i>pered</i> | b. | <i>v-perĕd</i> | c. | <i>s-pered-i</i> | (R) |
| | in.front.of | | in-in.front.of.ACC.SG | | from-in.front.of-GEN.SG | |
| | ‘in front of’ | | ‘to the front of’ | | ‘from the front of’ | |
-
- | | | | | | | |
|---------|--------------------|----|------------------|----|------------------------|-----|
| (20) a. | <i>kol-o</i> | b. | <i>do-kol-a</i> | c. | <i>w-o-kol-o</i> | (P) |
| | circle- NOM/ACC.SG | | to-circle-GEN.SG | | in-about-circle-ACC.SG | |
| | ‘at’ | | ‘around’ | | ‘around’ | |

Given this, the dynamic phrase, which encodes the dynamic meaning, embeds the stative phrase, which is responsible for stative meanings, as shown below.

- (21) [_{DynamP} Dynam [_{StatP} Stat [_{DP} N]]]

In addition, given the discussed correspondence between cases and the type of the meaning, locative and instrumental prepositional phrases will have the structure in (22) whereas accusative and genitive prepositional phrase will have the structure in (21).

- (22) [_{StatP} Stat [_{DP} N]]

⁵ It is not decisive for the argument whether or not the preposition forms one word with the adverb (e.g. in Czech and Slovak, they form one word); what is crucial is that the dynamic element is more complex than the stative element and includes it.

⁶ With respect to (19b), one might object that it is based on the noun *perĕd* ‘front’ but this is problematic for (19c), where the case ending *-i* does not go together with the masculine gender of *perĕd*.

2.2 The case assigning head

The data show that case is determined by the highest head in the prepositional structure. Concretely, complex prepositions like (13), repeated here as (23), assign genitive, which is the case assigned by the dynamic *s* (in (23a)) and *z* (in (23b)). The prepositions *przed* and *nad* do not assign genitive, only accusative and instrumental.

- (23) a. *s-przed stol-u*
from-in.front.of table-GEN.SG
'from in front of the table'
- b. *z-nad stol-u*
from-above table-GEN.SG
'from above the table'

Similarly, the Russian complex prepositions *iz-za* and *iz-pod* in (12)=(24) assign genitive, the case assigned by the dynamic component *iz*, but not by the stative *za* and *pod*. *Za* and *pod* assign accusative and instrumental.⁷

- (24) a. *iz-za stol-a*
out-behind table-GEN.SG
'from behind the table'
- b. *iz-pod stol-a*
out-under table-GEN.SG
'from under the table'

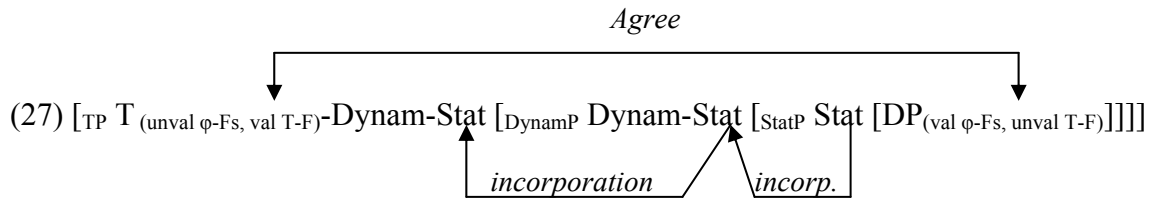
In the case of adverbial prepositions, case is also determined by the highest head. In the Russian (25), accusative, locative and genitive are assigned by the left prepositions *v* and *s*, which can be dynamic (as in (25a,c)) in contrast to the stative *pered*, which assigns only instrumental. In the Polish examples, the accusatives in (26a,c) could theoretically be assigned by both prepositions, *na* and *o* and *w* and *o*, but genitive in (26b) can be only assigned by the left *do*.

- (25) a. *v-pered*
in-in.front.of.ACC.SG
'to the front of'
- b. *v-pered-i*
in-in.front.of-LOC.SG
'in front of'
- c. *s-pered-i*
from-in.front.of-GEN.SG
'from the front of'
- (26) a. *na-o-kol-o*
on-about-circle-ACC.SG
'around'
- b. *do-o-kol-a*
to-about-circle-GEN.SG
'around'
- c. *w-o-kol-o*
in-about-circle-ACC.SG
'around'

The heads *Dynam* and *Stat*, however, cannot assign case by themselves because *Dynam* should assign case exactly when *Stat* does not assign case and *Stat* in turn should assign case when *Dynam* does not project. Unfortunately, *Stat* does not know whether or not *Dynam* will merge in the derivation, which is the usual look-ahead problem. A related problem is that it is not clear why in certain cases *Stat* could assign case and in others could not. It also does not help to assume optional ϕ -features on the head *Stat* inducing the case assignment process because again, there should be a dependency between the presence/absence of these features on *Stat* and the presence/absence of the *Dynam* head in the derivation.

⁷ Biskup (2009) argues that the quantificational (delimitative) *po* is a morphological adjunct in Czech, hence it is not visible for syntactic processes and cannot participate in case assignment. The Russian *po-nad* and *po-za*, which assign instrumental and have *po* in the higher position, and the Polish *ponad* and *poza*, which assign accusative and instrumental (the case of *nad* and *za*), could instantiate the same pattern since neither the Russian *po* nor the Polish *po* assigns instrumental.

For this reason, I follow Biskup (2009) and assume that case is assigned by some higher head, which has all information relevant to case assignment. Analogously to the verbal domain, there is a head T, which c-commands Dynam and Stat and has unvalued ϕ -features and the valued T(ense)-feature. This has the advantage that all cases are treated uniformly as Agree between T-features and ϕ -features (which is an extension of Pesetsky and Torrego's (2004) approach to structural cases). Since the case assigned to the prepositional complement is not identical for all prepositions, as we saw above, the head T must be somehow instructed which case it shall assign. This is ensured by incorporation of the lower prepositional heads into T. The whole case assigning process is shown below.



Although there is no visible agreement morphology on prepositions in Russian and Polish, there *are* languages with overt prepositional agreement (Baker 2008, Hagège 2010) and with tensed prepositions (Bowerman and Aygen-Tosun 2000, Harlow 2007). Agreement morphology on prepositions can be found, for instance, in Abaza, Abkhaz, Hungarian, Irish, Iwaidjan languages, Jacalteco, Tsakhur, Welsh and tensed prepositions in Titan and Māori. The presence of the TP projection in prepositional phrases is also semantically plausible because the prepositional predication holds at a certain time (cf. von Stechow 2006, 2007 for the presence of a time argument in the meaning of prepositions and Kracht's 2008 function *loc*', which takes an object and a time point and returns the region that the object occupies at the time).

To allow embedding of prepositional phrases, I assume that the prepositional TP is selected by the little prepositional head *p*. Since this projection does not play a role in the case assignment process, I will not include it in the following discussion.

2.3 A more detailed decomposition

The prepositional structure is more complex; it has been argued that there is a localizing function that situates the external argument (the figure) in space relative to a neighbourhood region of the internal argument (the ground) (e.g. Lang 1991, Wunderlich and Herweg 1991, Kracht 2008). This localizing function has been argued to be morphologically realized in languages like Japanese and Korean; see Wunderlich (1991, 2012), Bierwisch (1996). The neighbourhood region is often expressed by a special relational word, which Svenonius (2006) calls *Axial Part*. In accordance with the region semantics, I will use the following meaning for the locative head.

(28) $\lambda R \lambda x [\text{loc}(x, R)]$

The function *loc* localizes the referent of the figure argument (*x*) with respect to neighbourhood region of the ground argument (*R*), which is specified by the appropriate preposition.

It has been proposed that dynamic prepositional phrases contain the operator *become* (or *change*); see, for instance, Dowty (1979), Wunderlich (1991), Stiebels (1996). This operator identifies the transition from one region into the other and takes the final state as its argument. Therefore, it comes in two types, for goal prepositions, consider (29a) and for source prepositions (29b).

- (29) a. $\lambda P \lambda x [\text{become}(P(x))]$
 b. $\lambda P \lambda x [\text{become}(\neg P(x))]$

The *become* operator embeds the phrase projected by the function *loc*, hence the prepositional structure of dynamic prepositions looks like (30). For simplicity, I use labels related to semantic properties of particular projections. Thus, *BecomeP* replaces the former dynamic phrase and the projection *Reg(ion)P* replaces the stative projection. The localizing function projects *LocP* above *RegP*.

- (30) $[_{TP} T [_{BecomeP} Become [_{LocP} Loc [_{RegP} Reg [_{DP} N]]]]]$

As an illustration consider the LF in (31), with the Russian dynamic prepositional phrase *iz doma* ‘out of the house’.

- (31)
- $$\begin{array}{c}
 TP \quad \lambda x \lambda t [\text{at}(\text{become}(\neg \text{loc}(x, \text{int}(\iota y [\text{house}(y)]))), t)] \\
 \swarrow \quad \searrow \\
 \lambda P \lambda x \lambda t [\text{at}(P(x), t)] \quad T \quad \text{BecomeP} \quad \lambda x [\text{become}(\neg \text{loc}(x, \text{int}(\iota y [\text{house}(y)])))] \\
 \swarrow \quad \searrow \\
 \lambda P \lambda x [\text{become}(\neg P(x))] \quad \text{Become} \quad \text{LocP} \quad \lambda x [\text{loc}(x, \text{int}(\iota y [\text{house}(y)]))] \\
 \swarrow \quad \searrow \\
 \lambda R \lambda x [\text{loc}(x, R)] \quad \text{Loc} \quad \text{RegP} \quad \text{int}(\iota y [\text{house}(y)]) \\
 \swarrow \quad \searrow \\
 \lambda y [\text{int}(y)] \quad \text{Reg} \quad \text{DP} \quad \iota y [\text{house}(y)] \\
 \quad \quad \quad \text{iz} \quad \quad \quad \text{dom}
 \end{array}$$

After applying the meaning of *Reg* to the DP complement, we receive the internal region of the house. The localizing function situates the referent of the figure argument *x* in that region. The figure, however, merges later in the derivation since it does not intervene between the case assigning *T* and the ground argument. At the earliest, it merges in *Spec,TP*; if it is *p* that is responsible for its introduction, then it merges in *Spec,pP* (e.g. Svenonius 2003, Biskup and Putnam 2012). Applying the operator *Become*, the resulting meaning is that it becomes true that the referent of *x* is not located in the internal region of the house. The head *T* then relates this meaning to a certain time, typically to the reference time introduced by the verbal predicate.

Prepositional complements do not have to be overtly realized, as shown by the following examples. Although they do not contain an overt noun, they contain a case ending.

- (32) a. *na lew-o* (P) b. *po-sred-i* (R) c. *s-pered-i* (R)
 on left-ACC.SG on-amidst-DAT.SG from-in.front.of-GEN.SG
 ‘on the left’ ‘in the middle of’ ‘from the front of’

There are several arguments for the presence of a covert noun in examples like these. Firstly, from a theoretical point of view, since case is a reflection of the operation Agree between ϕ -features, there must be an element in these examples that has valued ϕ -features. Secondly, adverbial prepositional phrases like *speredī* refer to a certain place; hence we expect a referential element (e.g. a covert noun PLACE) in such phrases. This is supported by the existence of prepositions like *vmesto* ‘in place of’, in which the noun PLACE (*mesto*) is present overtly.

In *na lewo* in (32a), which has the neuter accusative ending, the noun is not visible but there are adverbial prepositional phrases in which a neuter noun is expressed overtly; consider the Polish *około* ‘about’, containing the neuter noun *kolo* ‘wheel’. The next argument is based on case properties of adverbial prepositions. They mostly assign genitive and we know that genitive is the case of complements of nouns.

3. Case in the derivation

I assume that there is a correspondence between semantic properties of heads in prepositional phrases and their syntactic features and that syntactic features of heads incorporated into T represent the value(s) of the T-feature on T. These values are copied on the prepositional complement by Agree. At the level of PF, the values are spelled out as a case by means of the vocabulary insertion operation. This proposal has the advantage that the relation between prepositions and their cases is not accidental since case is based on semantic properties of particular heads in the decomposed prepositional phrase (which is in accord with the Jakobsonian approach 1936/1971 to cases, in which cases are bundles of semantic features).

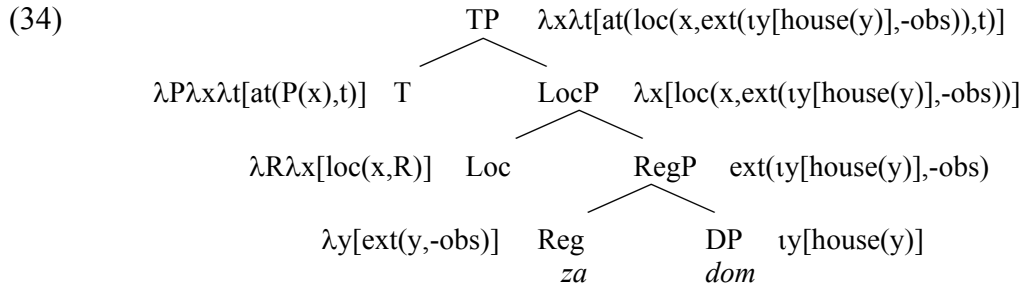
To be more concrete, in (31), the internal meaning of Reg corresponds to the syntactic internal-feature and the meaning of the negative Become corresponds to the syntactic become-feature and source-feature.⁸ The presence of the general become-feature and the specific source-feature or goal-feature on Become allows us to have just one vocabulary insertion rule for accusatives (among other things), as we will see below. Since source prepositions (see *iz*, *ot* in (1b,d) and *z*, *od* in (6b,d)) assign genitive, I propose the following vocabulary insertion rule.

(33) [become, source] → genitive

Because of lack of space, I use only simplified vocabulary insertion rules; instead of particular vocabulary items, I put case in the rules. With particular markers, the rules will be more complex because of inner-paradigmatic and trans-paradigmatic syncretism.

Now let us look at some stative prepositions, for instance, the meaning of the Russian and Polish *za* is shown below in the Russian *za domom* ‘behind the house’.

⁸ To keep the correspondence between semantic properties and syntactic features of the particular heads as simple as possible, I use only privative features.



The referent of the figure is located in the ext(ernal) region behind (-obs) the house. *Obs* represents the observer axis and +obs is used for the ‘in front of’ meaning. The external meaning of Reg corresponds to the syntactic external-feature and +/-obs axis (and vertical axis for the Russian and Polish *nad* and *pod*) corresponds to the syntactic projective-feature. Since projective prepositions (*nad* ‘above’, *pod* ‘under’, *pered* ‘in front of’, *za* ‘behind’/*nad*, *pod*, *przed*, *za*) assign instrumental, I assume the following vocabulary insertion rule.

(35) [projective] → instrumental

As to the stative *na* ‘on’, *o* ‘about’, *po* ‘along’, *v* ‘in’/ *na*, *o*, *po*, *w*, they can be taken to denote a contact between the figure and ground, in addition to their specific meaning, see (3), (5), (8) and (9); hence the following vocabulary insertion rule can be used.⁹

(36) [contact] → locative

The dynamic *za/za* (modulo the Russian *pod* and Polish *nad*, *pod*, *przed*) has LF like the stative *za* in (34), with the difference that the head *Become* is present. The positive become meaning corresponds to the syntactic become-feature and goal-feature, which suggests the following vocabulary insertion rule.

(37) [become, goal] → accusative

Given the two features, accusative markers are more specific than instrumental markers (see (35)) and fit better in the dynamic feature specification in the instrumental-accusative alternation examples. The rule in (37) can also be used with the same effect for *na*, *o*, *po*, *v/na*, *o*, *po*, *w*, which alternate between locative and accusative, and also for the accusative preposition *čerez* ‘over’/*przez*. This is in line with the fact that goal prepositions mostly assign accusative and with the claim that accusative is characterized as indicating the goal (Van Schooneveld 1986).

There is also the goal preposition *do* ‘to’/*do*, which assigns genitive. Given the other rules, it is not possible to have one vocabulary insertion rule for this goal genitive and the source genitive (e.g. [become] → genitive). Since with *do* the referent of the figure argument does not have to end in the ground – it can be located just near the ground – Reg has a

⁹ The locative preposition *pri* ‘at’/*przy* could also be analyzed in this way.

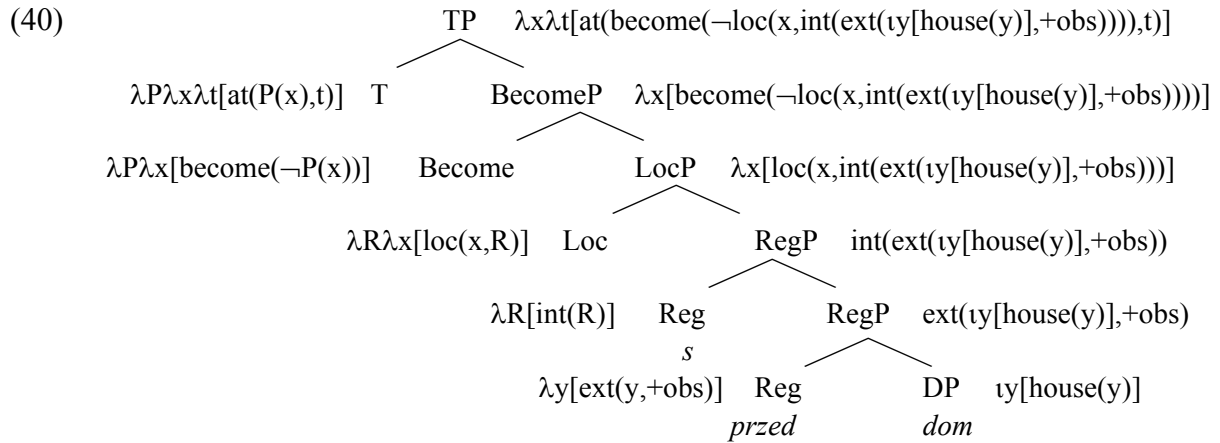
proximity-feature. Because of the Specificity Condition, the vocabulary insertion rule in (38) then correctly prevents accusative markers from appearing on the complement of *do*.

(38) [become, goal, proximity] → genitive

As to dative case, it is assigned by the preposition *k* ‘towards’/*ku*. With this preposition the figure argument is oriented with respect to the ground argument, which leads to the following vocabulary insertion rule.

(39) [oriented] → dative

Complex prepositions like the Russian *iz-za* ‘from behind’ and the Polish *sprzed* ‘from in front of’ have a more complex structure; consider (40), with the Polish *sprzed domu* ‘from in front of the house’. The referent of the figure moves out of the region that is in front of the house.

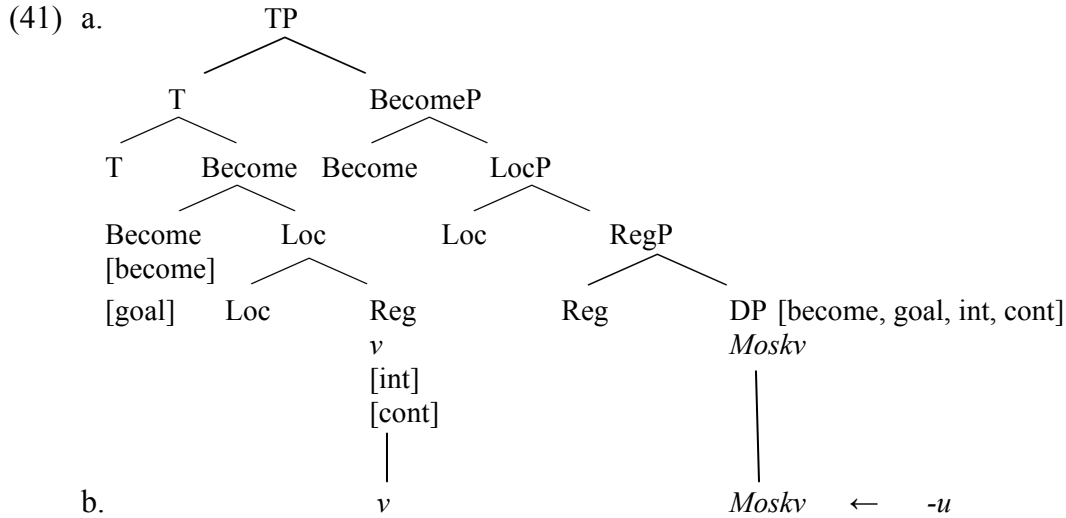


The external meaning of the lower Reg corresponds to the syntactic external-feature and -obs corresponds to the projective-feature. The internal meaning of the higher Reg corresponds to the syntactic internal-feature and the meaning of the negative Become corresponds to the syntactic become-feature and source-feature. Since given the Specificity Condition, the vocabulary item with the highest number of matching features is inserted into the terminal, the genitive marker (see rule (33)) wins over the instrumental marker (rule (35)). Analogously, we can analyse adverbial prepositions like the Russian *spered* ‘from the front of’, with the difference that, in contrast to (40), the DP is covert and embeds a genitive complement.

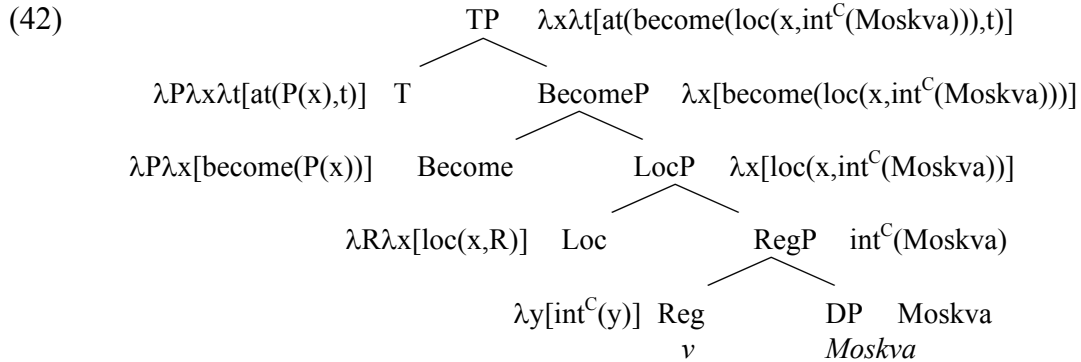
In this way, we account for the observation that it is the higher preposition that determines case. A comparison of the proposed vocabulary insertion rules shows that dynamic case markers are more specific than stative case markers.

For the sake of clarity, I will now present a complete derivation of the Russian *v Moskvu* ‘to Moscow’. The syntactic derivation of this phrase, with the complex T head and appropriate features, is shown in (41a). Given the ordering of prepositions in cases like *iz-za* ‘from behind’, *sprzed* ‘from the front of’, *znad* ‘from above’, *spered* ‘from the front of’ and

the fact that Become is higher than Reg, incorporation must happen to the right. The T-feature of DP is valued as [become, goal, internal, contact] via Agree with the complex T.



The PF of v *Moskvu* is in (41b). Given the vocabulary insertion rule in (37) [become, goal] \rightarrow accusative, the accusative marker (for the second declension *-u*) is suffixed to the noun. The LF of v *Moskvu* is shown below; the superscript *C* is a shorthand for the contact relation between the referents of the figure and ground. The positive meaning of Become corresponds to the syntactic become-feature and goal-feature and the internal, contact meaning of Reg corresponds to the syntactic internal-feature and contact-feature.



Generally, case markers are spelled out in accordance with the linearized syntactic structure, that is, on the closest overt element. If the noun is covert, the marker is suffixed to the closest non-nominal element, for instance, to a modifier present in the DP like in the Polish *na lewo* ‘on the left’. If there is no modifier, the case marker is suffixed to the closest preposition (merged as Reg) like in the Russian *posredi* ‘in the middle of’.

4. Conclusion

We have seen that prepositional cases have a meaning; they are based on semantic properties of particular prepositional heads incorporated into the case assigning head T. Syntactically, prepositional cases result from the operation Agree between ϕ -features and Tense-features of the head T and the prepositional complement. The prepositional complement can be overt as

well as covert. In either case, the case marker is spelled out on the closest overt element in the prepositional phrase. I dealt mostly with spatial prepositions but if it is correct that spatial meanings are the underlying meanings of prepositions and other prepositional meanings are based on them, then the proposed analysis can be extended to all prepositions.

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