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Case, prepositions and aspectual prefixation in Russian

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ABSTRACT

The paper offers a theory of the oblique case system of Russian based on Belvin & den Dikken's (1997) idea of 'zonal inclusion'. It is proposed that such a framework can be enhanced by assuming that, in a language like Russian, the different contributions made by the oblique case inflection and by the preposition amount to a domain-narrowing of the former by the latter. Evidence is provided based on the particular behavior of the preposition *s*, which can select for three different cases yielding different meanings. Finally, on the widely shared view that verb prefixes and prepositions in Slavic are based on the same categorial set, it is suggested that, by assuming Predicate Restriction as the mode of composition, we can provide a more parsimonoius account of Russian aspectual prefixation, dispensing with the articulated cartographic structure postulated in most current approaches.

KEYWORDS Syntax-Semantics interface · oblique case · prepositions · verb prefixation

1 THE POLYSEMY OF PREPOSITIONS AND VERB PREFIXES

It is no secret that Russian primary prepositions can mean a lot of different things. A single preposition can encode a number of different relations that, *prima facie*, seem like a bunch of random meanings that do not really match up with each other, or even overlap with the meanings of other prepositions. While this is generally true of any language with nominal adpositions, some prepositions in Russian (or, generally, Slavic) can be 'more polysemous' in selecting more than one morphological case, beyond the familiar directional/locational alternation of ACC(usative) and oblique found in languages like Latin or German. Out of 22 Russian primary Ps, three can take either ACC or PREP(ositional) (=LOC(ative)); two can select for ACC or INS(trumental); two Ps, the focus of investigation in this paper, can take three cases: *po* can select for ACC, PREP or DAT; *s*(*o*) for ACC, INS or GEN, as in (1)-(2).

(1) a. čempionat mira po futbolu
championship world.GEN PO soccer.DAT
'soccer World Cup'

b. po ego pribytii
PO him.GEN arrival.PREP
'upon his arrival'

c. voda po gorlo
water PO throat.ACC
'water up to the throat'

(2) a. veličinoj s banku supa
size.INS about can.ACC soup.GEN
'the size of a can of soup'

b. dama s sobačkoj
lady with dog.EVAL.INSTR
'the lady with the little dog'

c. veter s morja
wind from sea.GEN
'the wind from the sea'

Most formal approaches (e.g., Arsenijević & Gehrke 2008, Gehrke 2005, Haselbach & Pitteroff 2015, Biskup 2019 and earlier work) focus on the ACC/oblique alternation only and a question seldom explicitly addressed is how the interplay of two or three morphological cases with a single preposition gives rise to different meanings, hardly reducible to a common core, i.e., to the 'basic' semantics that the preposition should have in order to convey a certain meaning when combining with a certain case inflection.[1]

Aspectual prefixes are another category notoriously displaying a high degree of polysemy, an expected state of affairs if one takes into account that in Slavic languages most prefixes are homophonous with Ps.[2] Indeed, there is now large consensus about the phrasal nature of verb prefixes and several proposals have been advanced that decompose prefixed verbs into a complex *v*P/VP shell incorporating a P, which is seen, in different flavors, as the head selecting the nominal complement of the verb and subsequently raising (Gehrke 2005, Svenonius 2004, Biskup 2019).[3] If we take Russian verb prefixes as *bona fide* Ps, it is not difficult to see how their polysemy, as observed in nominal environments, is reproduced and amplified in the verbal domain: for example, according to Švedova (1980:§879, 369), the prefix *s-* can confer five different meanings to a perfective verb by attaching to an imperfective, underived verb stem, as illustrated in (3).[4]

(3) a. S-čistit' grjaz' s botinok.
S-clean.INF.PFV dirt.ACC from shoes.GEN
'To clean mud off shoes.'

b. S-kormit' ob"edki sobake.
S-feed.INF.PFV leftovers.ACC dog.DAT
'To feed leftovers to the dog (and use them up).'

c. S-kleit' oskolki.
S-glue.INF.PFV splinters.ACC
'To glue the pieces together.'

d. S-xodit' za doktorom.
S-go.INF.PFV for doctor.INS
'To go fetch the doctor.'

e. S-delat'.
S-do.INF.PFV
'To do.'

Note that the variation in meaning of (1) is partly mirrored in the examples above: provenance/source ('from') in (3-a), comitativity ('with'/'together') in (3-c).[5] Anyway, even considering the meanings of a single P selecting for different cases, they appear to be so idiosyncratic and conflicting that there seems to be no other choice than postulating, for example, three homophonous items in the Lexicon (say, s^1, s^2 and s^3), each one with its own featural makeup and meaning. Obviously, this is not the most desirable option,

[1] To this end, the cognitive and functional-typological literature has devoted relatively more space to these issues, but again focusing on the directional/locational alternation only, one of the most debated topics being the so-called 'two-way prepositions' of German, discussed in several works (e.g., recently, Jach 2021). Among recent works on Slavic prepositions are Lewandowski (2012) for Polish, and Kalyuga (2020).

[2] In Russian, out of 18 productive verbal prefixes (Isačenko 1960:149–151), only four (*vz-*, *vy-* *pere-*, *raz-*) have no corresponding Ps, whereas out of of 22 primary Ps (Švedova 1980:§1657, 705), just seven (*bez*, *dlja*, *k*, *krome*, *meždu*, *radi*, *čerez*) are not used as verbal prefixes. Also, prefixed verbs often select for a complement headed by the corresponding P, especially when prefixation alters the argument structure of the verb, as in (3-a) below, where the quasi-argumental *s botinok* 'from the shoes' is required by the *s-*prefixed verb.

[3] This pertains only to 'lexical' prefixes, as opposed to 'superlexical' ones, according to the widely accepted distinction first put forth in Isačenko (1960).

[4] The prefix meanings, according to Švedova (1980:§879, 369), are the following: (3-a) 'remove from something by means of the action expressed by the base verb'; (3-b) 'to (self-)destroy, to (self-)damage, to use up, to spend (money) as a result of the action expressed by the base verb'; (3-c) 'deliver from different places to one, connect with the help of the action expressed by the base verb'; (3-d) 'perform the action expressed by the base verb once'; (3-e) 'purely aspectual' (the prefix only marks perfective aspect). The *Academic Dictionary of the Russian language* (Gerd 2017:189) lists many more meanings for *s-* (12, among which are, in addition to the ones listed above, 'movements from top to bottom', 'comparison, approximate equalization' and others), and so does Ožegov & Švedova's (1992) dictionary.

[5] The meaning of approximate equation/comparison ('the size of') is not represented in (3) but some examples come from Gerd (2017:189): *sravnit'* 'equal, compare, equate', *sličit'* 'compare, collate, check (with)', *soobrazovat'* 'adapt, conform, coordinate'.

so the starting question(s) of this paper will be the following: is it possible to set up a theory of (oblique) case and prepositions for Russian that would allow the different meanings of the PPs in (2) to be straightforwardly derived from the semantics of one single lexical item, namely *s*, and from the properties of the cases (GEN, INS and ACC) it selects? Or, in other words, do morphological cases have a semantics of their own that can interplay with some basic meaning of prepositions? And, if so, can we regard morphological inflections as 'true' lexical items that enter the derivation as heads?

In this paper, I will address these questions building on the theory of obliques inaugurated in Manzini & Savoia (2011), introduced in §2 and crucially based on the idea of 'zonal inclusion' (§2.1) by Belvin & den Dikken (1997); in §3 I review the case and prepositional systems of Russian in the light of the 'oblique as zonal inclusion' theory, laying out my proposal in §4 and outlining possible outcomes for aspectual prefixation in §5, where I also make some concluding remarks.[6]

2 THE FRAMEWORK: ZONAL INCLUSION AND OBLIQUES

Manzini & Savoia (2011, henceforth M&S) argue, based on data from Albanian, that what is traditionally labeled as 'oblique case' in natural languages corresponds to the lexicalization of a Q(uantification) property, and that the category of Case should be abandoned as a primitive of Syntax, at least as far as oblique case is concerned. Their arguments can be summarized as follows: *a*) the treatment of case as a feature that is uninterpretable in full (i.e., lacks an interpretable counterpart: Chomsky 1995) is at odds with its relational core; *b*) the frequently observed syncretism between GEN and DAT in natural languages points to a broader, more general relation they both encode. On the hypothesis that the functional lexicon also includes sublexical units (hence, also case inflections), M&S observe that the content shared by GEN and DAT bears a close resemblance to the possession relation and ultimately to the notion of 'zonal inclusion' originally developed by Belvin & den Dikken (1997, hereafter B&D) as the relation underlying the various meanings of *have*, which I turn to in the next subsection.

2.1 'ZONAL INCLUSION' (BELVIN & DEN DIKKEN 1997)

B&D (1997) pursue a unified account of 'experiencer *have*' and 'presentational *there*' constructions on a decompositional approach to *have* (Belvin 1996), conceptualized as the inverted counterpart of *be+to*. They take (4-a) and (4-b) to be generated from the same structure (4-c), whereby in (4-a) the DAT predicate inverts with its subject (the VP *a strange man walk into my office*), then incorporates into Agr and, along with Agr, into an aspectual functional head F, immediately dominating the small clause. The complex F+Agr+Case is spelled out as *have*.

(4) a. I had a strange man walk into my office.
b. There walked a strange man into my office.
c. [$_{FP}$ Spec [$_{F'}$ F [$_{AgrP_1}$ [$_{AgrP_2}$ Agr [$_{VP}$ a strange man walk into my office]] [$_{Agr'}$ Agr [$_{PP}$ {to me} / {there}]]]]]
'The event of a strange man walking into my office {was (i.e., happened) to me.} / {was there (existed, happened. took place)}.'

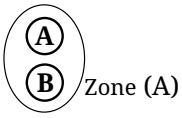
[6]Space limitations preclude a discussion, suggested by an anonymous reviewer, of other Slavic languages in comparison with Russian, so this task remains for my future research. However, it must be stressed that the same considerations made above on the polysemy of prepositions and verb prefixes (as well as on their categorial overlap) can be replicated for most languages of the Slavic family, at least for those belonging to its Western and Eastern branches. For example, *z*(*e*) in Polish is both a preposition and a verb prefix, much in the same way as Russian *s*(*o*): as a preposition it selects for INS, GEN and ACC conveying the same interpretations as those in (2), whereas in its prefixal usage it covers a range of different meanings largely corresponding to the ones in (3).

What is interesting for the purpose of the present article is the semantics they ascribe to *have*, for which it is worth quoting in full B&D (1997:170–171, emphasis mine):

> […] the 'meaning' of *have* […] denotes a special kind of inclusion relation […] dubbed '*zonal inclusion*'. […] Entities have various zones associated with them, such that an object or eventuality may be included in a zone associated with an entity without being physically contained in that entity. […] The type of zones which may be associated with an entity will vary with the entity. Sentential entities have two zones associated with them above and beyond non-sentient entities, specifically, a *zone of control* and a *zone of experience*. These two zones are distinguished by the nature of the relation between objects or events which occur in them and the entity with whom the zone is associated. […] These two zones give rise to the *causative* and *experiencer* interpretation of *have* sentences, respectively.

Zonal inclusion, thus, is "a stative relation in which entity A includes entity B in a zone associated with A" (B&D 1997:171) and is represented in the image schema in (5), where A is the first-person subject of (4-a), the 'possessor' (more properly, the 'includer') of the event (B = *a strange man walk into my office*).

(5)



2.2 THE FUNDAMENTAL OBLIQUE

M&S (2011) propose that the so-called oblique cases and their prepositional counterparts (following Fillmore 1968), are Q(uantificational) heads – i.e., dyadic operators yielding a relation between the element to which they attach and: *a*) the internal argument of the verb (= DAT/*to*), or *b*) the head of a noun phrase (= GEN/*of*).

They take it that the content of Q is B&D's zonal inclusion, a broad relation encompassing alienable and inalienable possession, part-whole, etc., conceptualized as an elementary inclusion predicate denoting a 'superset-of' relation, which is therefore notated ⊆, though it is not construed as strictly as in set theory but in a looser sense.[7] Thus, in (6), *to* introduces a 'possessive' relation between John and the argument of the ditransitive verb bearing the Theme θ-role (*the books*), much in the same way in which in (7) *the woman* (the possessor) and *the children* (the *possessum*) are related to each other via the GEN ending *'s* or the preposition *of*.

(6) I gave the books *to* John.
[$_{VP}$ gave [$_{predP}$ the books [[$_{PP}$⊆ to [John]]]]]

(7) { the children *of* the woman / the woman'*s* children }
[$_{DP}$ the children [$_{PP}$⊆ of [the woman]]

According to M&S, the widespread DAT/GEN syncretism (e.g., in Romanian) matches the identical lexicalization of the ⊆ operator; otherwise, GEN and DAT are specialized lexicalizations of ⊆ for DP-embedding and sentential embedding, respectively.[8]

Franco & Manzini (2017b) observe that INS (or one of its varieties like ablative or comitative) is the case most likely to be lexicalized, after GEN and DAT, in any case-inflecting language. INS and the *with*-phrase, they argue, encode the zonal inclusion

[7] Recall B&D's definition, by which inclusion in the zone of control or in the zone of experience associated with an entity does not entail physical containment in that entity.

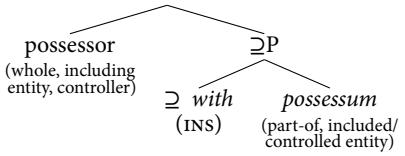
[8] Manzini & Franco (2016), Franco & Manzini (2017a) (hereafter M&S (2016) and F&M (2017a)) also suggest that the structural closeness of DAT/*to* and GEN/*of* may be the most straightforward explanation of the reason why Differential Object Marking is often lexicalized by DAT/*to* (e.g., Spanish, Southern Italian dialects), by GEN (Russian and most Slavic languages) or, notably, by a syncretic GEN/DAT inflection, as in Eastern Armenian (F&M 2017a:430).

relation in the same way as GEN and the *of* -phrase do, but taking as their internal argument not the possessor but the *possessum*. Much simplifying F&M's line of reasoning, (8) is the mirror image of (7), whereby the 'possessive' relation is reversed w.r.t. the order of arguments, in such a way that the complement of the PP (the *with*-phrase) in (8) is 'zonally included' by the DP immediately dominating it, rather than 'zonally including' it as in (7).

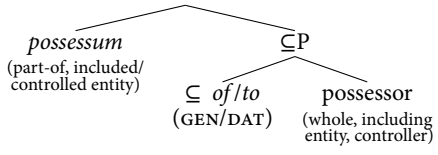
(8) the woman *with* the children
[$_{DP}$ the woman [$_{PP}$(⊇) with [the children]]

Having integrated INS and *with*-phrases into the theory, F&M (2017b:3) arrive at the conclusion that "the fundamental obliques of natural languages are a system of elementary predicates attaching arguments to the verbal spine as possessing/including other constituents (DAT/GEN) – or as entertaining the reverse relation with them (INS)". The fundamental oblique system, schematized in (9), has "a common core consisting of part/whole content, deployed in order to enrich the argumental structure supported by verbal projections (via Chomsky's Agree, deriving direct case)".[9]

(9) a. 'SUBSET-OF': 'includes' (⊇)



b. 'SUPERSET-OF': 'is-included' (⊆)



The theory emerging from M&S (2011, 2016), F&M (2017a, 2017b), in dispensing with any categorial distinction between P(reposition) and K(ase), holds that morphology is not post-syntactic nor underspecified, explicitly excluding Late Insertion and Impoverishment as postulated in Distributed Morphology (Halle & Marantz 1993 and subsequent work). This leads to a further assumption, namely that morphological elements always have a content: case 'morphemes' have a predicational core (the fundamental ⊆ / ⊇ relation) and are stored in the Lexicon, just like Ps; as such, they enter the computation as heads.

3 OBLIQUE CASE AND THE INTERACTION WITH PREPOSITIONS

Given a radically lexicalist theory of oblique case like the one outlined in the preceding sections, Russian (along with other Slavic languages) stands out as an ideal testing ground for observing how and whether oblique cases and prepositions are reducible to the elementary relation of 'zonal inclusion' (either as superset/whole, or subset/part), for several reasons: *a*) a relatively large number of oblique morphological cases; *b*) a considerable prepositional inventory; *c*) the existence of prepositions selecting multiple cases, with all the related issues touched upon in §1.[10] In order to test whether the oblique cases of Russian in their contexts are consistent with the theory of the fundamental oblique

[9]A point made by F&M (2017b) in discussing the DAT/INS syncretism, is that the inclusion predicate (⊆ = DAT/*to*) and its reverse (⊇ = INS/*with*) may reduce to an even more primitive content conveying inclusion in either direction. Conversely, the two opposite relations may remain distinct in their lexicalizations but converge interpretively at LF, as is the case in the *with*/*to* alternation in (i), where *museum* and *his pictures* can be related either as the latter being included in the former or the other way round.

(i) a. He presented [$_{DP}$ the museum [$_{PP}$(⊇) [$_{P}$(⊇) with] [$_{DP}$ his pictures]]]
b. He presented [$_{DP}$ his pictures [$_{PP}$(⊆) [$_{P}$(⊆) to] [$_{DP}$ the museum]]]

[10]In addition to all the above, Russian seems to be particularly liberal in allowing PPs or non-nominative NPs to acquire subject or quasi-subject properties in a series of constructions that have been the object of much literature. Among them are, for example, the possessive 'perfect' construction with *u*+NP$_{[GEN]}$

outlined in §2 (i.e., can be defined in terms of ⊆/⊇ properties and derived sub-properties), in §3.1.1 I review the Russian oblique cases that appear to belong to the ⊆ ('superset-of') category, while §3.1.2 is devoted to the only exponent of the ⊇ ('subset-of') category, the instrumental.[11]

3.1 RUSSIAN CASES AND THE ⊆/⊇ DIVIDE

3.1.1 ⊆ *'SUPERSET-OF'*: DATIVE, GENITIVE, LOCATIVE

The morphological cases of Russian I ascribe to the fundamental oblique encoding a 'superset-of' relation (⊆) are the dative, the genitive and the prepositional (locative).

Datives can easily be construed as in M&S (2011, 2016), since they occur in non-prepositional embedding as either: *a*) arguments of ditransitive verbs, or *b*) arguments bearing the Experiencer θ-role, as in DAT Experiencer constructions (10-a), adverbial constructions (10-b) and adjectival NOM/ACC-Theme constructions (10-c).

(10) a. Saše { nravjatsja knigi / nravitsja igrat' v futbol. }
Saša.DAT please.3PL books please.3SG play.INF at football
'Saša likes books / to play football.'

b. Borisu { veselo / xolodno / skučno / ploxo. }
Boris.DAT happy cold bored bad
'Boris is happy / cold / bored / not well.'

c. Saše {nužen vrač / nužno vrača. }
Saša.DAT needed.ADJ doctor.NOM needed.ADV doctor.ACC
'Saša needs a doctor.' (Bailyn 2012:161ff.)

Experiencers surfacing in DAT are actually predicted to arise in languages by a theory treating the latter as, roughly, potential 'possessors' of entities, among which are also the states predicated by a clause.[12] Thus, *Saše* 'to Sasha' and *Borisu* 'to Boris' in the above examples are naturally interpreted as the possessors of the states of loving books, being happy, and so on. Note also that (10-a)-(10-c) do match the configuration in (9-b), whereby the DAT(⊆) inflection takes the sister of its projection (the VP) as the *possessum*, with subsequent raising of the DAT noun to Spec,TP for independent reasons (for a discussion, see Bailyn 2012:161–171).

Like the dative, in Russian the genitive can also be easily conceived in terms of a ⊆ head, i.e. a specialized inflection either: *a*) for DP/NP-embedding, or *b*) as a Differential Object Marking inflection for masculine (II class) animates (Bossong 1998:209-ff.).

(Trubinskij 1984), comitative constructions of the type *Čto s toboj* (Janda 1993:185), the infinitive dative subject construction (Moore & Perlmutter 2000), the dispositional reflexive ('*feel-like*') construction of Franks (1995:364) and others.

[11] The split of oblique cases into ⊆-obliques and ⊇-obliques makes the interesting prediction that there may exist elements lexicalizing both the ⊆ property and the ⊇ property (thus conflating GEN, DAT, PREP and INS into one item), or elements lexicalizing more than one 'specialization' (or sub-property) of ⊆ (e.g. DAT/GEN/PREP or DAT/PREP), but not elements that fuse the ⊇ property with one or two specializations/sub-properties of ⊆ only (say, INS/DAT or INS/GEN/PREP).The prediction is indeed borne out in Russian, where syncretisms among ⊆-obliques do occur (e.g., DAT/GEN or GEN/PREP, briefly discussed at the end of §3.1.1), while INS consistently displays a phonological realization distinct from that of GEN, DAT and PREP, except in the feminine singular of the adjectival declensions, where INS participates in the syncretism of all oblique cases, the inflection *oj*/*-ej*. Crucially, however, only for INS is an alternative non-syncretic lexicalization available, the (highly stylistically marked) inflection *-oju*/*-eju*.

[12] On this point, see the discussion of the Italian example corresponding to (10-a) in M&S (2016:230-232), where it is also argued, building on an insight in Pylkkänen (2008), that the existence of a single DAT/oblique morphology to introduce both Experiencers and Goals (and DOM arguments) is not coincidental, but instead reflects a unique 'possessor' characterization shared by both. Moreover, Franco (2024) shows that that the same ⊆/⊇ elementary predicates (conveying inclusion, possession, part/whole relations, etc.) correspond to the content of serial (light) verbs in languages having serial verb constructions and, more interestingly, this ⊆/⊇ content can encode the same variety of θ-relations as that displayed by prepositions or oblique case: for example, serial light verbs of the GIVE type introduce Goals and Benefactives, but they are also capable of encoding Experiencers and mono-argumental (intransitive) datives, exactly as DAT or *to* can. Thanks to an anonymous reviewer for bringing this to my attention.

(11) Maša uvidela { kot-a / brat-a. }
Maša saw cat-N.SG.GEN brother-M.SG.GEN
[$_{vP}$ CAUSE/*v* [$_{VP}$ [$_{V}$ uvidela] [(⊆)P [$_{NP}$ kot/brat] [(⊆) -a]]]]
'Maša saw a cat / her brother' (F&M 2017a:433)

As is well known, GEN in Russian is in some sense pervasive, (or, at least, more frequent than expected), being required or optional: *a*) under negation; *b*) in various environments involving (definite or indefinite) quantification, including numerals; *c*) in intensional contexts with verbs like *ždat'* 'wait for', *iskat'* 'seek', *xotet'* 'want'; *d*) in comparatives. For reasons of space, I will not be going through the details of these constructions, addressed extensively in many papers, and I will just note that most approaches to the instances of GEN listed in *a*)-*d*) above take it that they entail, to various degrees and with different machineries, some sort of quantification due to a Q head or feature, not unlike M&S's (2011) view of GEN/*of* as a Q(⊆) category.[13]

If we turn now to the prepositional case, basically a locative, the first observation one can make is that locations, as such, can quite obviously be associated with concepts like inclusion or part/whole and with the 'superset-of' relation. Franco et al. (2021) observe that most often natural languages lexicalize Location by means of the same cases or adpositions which introduce GEN, DAT and INS, and argue that LOC is a specialization of the ⊆ relation, which arises, for example in the case of Romance *à* 'to', simply from the locative nature of the element embedded in the *à*-phrase, which also introduces Goals (i.e., is the prepositional counterpart of DAT).[14]

A relevant fact, pinpointed by Blake (2001:157–162), is that LOC is the oblique more likely to be lexicalized in languages after GEN and DAT, but, crucially, before INS.[15]

Since PREP, by definition, is restricted to prepositional environments, it is quite straightforward to take it as another 'specialized' instance of ⊆, whereby its locative interpretation would not be due to a semantic feature, but would arise as a by-product of the selectional restriction preventing a PREP ending to attach to a NP not embedded under a (locative) PP. Under this view, PREP lexicalizes exactly the same ⊆ content as DAT and GEN and, indeed, syncretism facts (DAT/PREP in the singular of class I nouns, GEN/PREP in the plural of the adjectival declension), suggest that this might actually be the case. [16]

[13] Notably, Bailyn (2004) argues that "genitive is Q", i.e. the spell-out of an uninterpretable [q] feature that is checked by Q, the (usually null) head of a QP that in turn is selected by Neg (via the VP shell), by V, or by a Q-operator sitting in Spec,QP (a numeral or a quantifier in direct case). For an overview of the genitive of Negation literature see Bailyn (2012:199–218).

[14] The authors show that the intra-Romance variation in conveying different location meanings (state *vs* directionality, direction of motion, human *vs* non-human location, etc.) can be reduced to different mappings onto the prepositional lexicon and on different selectional requirements on the site of attachment in the VP shell, if ⊆/⊇ properties are taken as basic and locative ones as derived.

[15] As noted by an anonymous reviewer, whom I wish to thank for this insight, this is also in line with Caha's (2009) Universal Functional Sequence, whereby INS is contained in the functional layer thereof, labeled LOC$_3$, or in higher hierarchically ordered layers (DAT < LOC$_2$ < PART < GEN < LOC$_1$ < ACC < NOM). It must be emphazised, though, that for the theory laid out in §4 nothing hinges on a sequence of strictly ordered cases. Also, differently from the nanosyntactic approach, the present proposal, while taking it that morphological cases are the inflectional counterpart of PPs, does not assume that the latter are different realizations of case features, as far as it does not adopt Peeling (Caha 2009:chap. 4 and references quoted therein) and, most of all, post-syntactic spell-out.

[16] Alternatively, one may think of a specialized semantics for the PREP case, whereby the primitive loose ⊆ relation is narrowed down to encompass spatial inclusion only, perhaps by way of an extra [loc] feature/property constraining the interpretation of the ⊆P complement to a location. It is important to stress that, even if a pure syntactic account (PREP as an instance of ⊆ specialized for PP embedding) appears to be the most economical, the postulation of a [loc] feature might nonetheless be needed in view of the existence of the preposition *po*, that can select for both DAT and PREP, with different meanings (as exemplified in (1-a) and (1-b), respectively). Thanks to an anonymous reviewer for pointing out the higher explanatory power of the syntactic account.

3.1.2 ⊇ *'SUBSET-OF'*: INSTRUMENTAL

The remaining oblique case of Russian, the instrumental, matches in full the properties of the ⊇ ('subset-of') category argued for by F&M (2017b), its prototypical instances being not only NP adjuncts (as instrument, manner, mode of action, or various other circumstantial meanings) as in (12-a), but also the *by*-phrase in the passive construction (12-b) and in nominalizations (12-c), or the 'unintentional causer' in the adversity impersonal construction (Zimmerling 2013) in (12-d).

(12) a. Ivan pišet pis'mo karandašom.
Ivan writes letter pencil.INS
'Ivan is writing a letter with the pencil.'
b. Zadanie vypolnjaetsja studentami.
assignment executes.REFL students.INS
'The assignment is being completed by students.'
c. Vypolnenie studentami zadanij.
execution students.INS assignments.GEN
'The completion of assignments by students.'
d. Lug zalilo vodoj.
meadow.M.SG.ACC flooded.PST.N.SG water.F.SG.INS
'The meadow was flooded.'

Yet, starting from Bailyn & Rubin (1991), the standard view is that INS is closely tied to predication, so that Predicate instrumentals, like those in (13), are taken as paramount examples of its licensing, rather than non-predicational instrumentals as (12-b)-(12-d) (Bailyn 2012:177).

(13) a. Ivan byl soldatom.
Ivan.NOM was soldier.INS
'Ivan was a soldier.'

b. Ivan kažetsja glupym.
Ivan.NOM seems stupid.INS
'Ivan seems (to be) stupid.'

On cross-linguistic grounds, there are, however, reasons to favor (12-a)-(12-d) over (13) as the most 'natural' environments for INS: in languages with a morphological case for the 'instrument-of' relation, the other relations that are more likely to be associated with it are the causative/agentive one and the comitative one (Narrog 2008:598–599), whereas Predicate instrumentals, as far as one can tell, appear to be a fairly specific feature of (some) Slavic languages.[17] The conflation of instruments, causers and (demoted) agents into a single piece of morphology is better captured, instead, in Pylkkänen's (2008) view of INS as a high applicative, generated between *v* (Voice/Cause) and V, expressing the relation between the oblique argument (in Spec,ApplP) and the event described by the VP, exactly as VoiceP and CauseP (merged just above ApplP) encode the relation between the VP event and the respective arguments in their Spec, the agent and the causer/demoted agent. If we translate this into F&M's (2017b) framework and accommodate the INS inflections in (12) into the ⊇ structure (9-a), *karandašom* 'pencil' in (12-a) is naturally interpreted as an instrument simply by being enclosed in the 'zone' associated to the event of writing a letter; in (12-b) the ⊇ projection (the INS inflection *-ami*) takes *student-* as its internal argument and the passive clause as its external argument; *vodoj* in (12-d) is generated VP-internally or at least in a position lower than *v*, as argued by Lavine (2013:195).

[17] A reviewer, while agreeing that predication is not at the core of the Russian INS case, asks how the present proposal can deal with facts like those in (13), thus in §4.1 I briefly discuss primary predication, suggesting that the presence of INS is due to specific properties of the copula *byt'*.

3.2 THE CONTENT OF OBLIQUE CASE INFLECTIONS AND THE ROLE OF P

M&S (2011, 2016) and F&M (2017a, 2017b), in taking it that 'oblique case' and 'preposition' are just different names of the ⊆/⊇ relation, do not say much about those languages (such as Russian) with both cases and prepositions, except for a brief discussion of comitatives in Latin, where they suggest that the preposition *cum* 'with' may possibly duplicate the ⊇ content of the ablative case morpheme and contextually restrict its interpretation to convey the comitative relation (F&M 2017b:7–8). Bellucci & Dal Pozzo (2016), Franco et al. (2017) offer a decompositional approach to the articulated system of spatial cases of Finnish in terms of specialized lexicalizations for ⊆ that encode the internal/external divide and merge with the 'outer' case inflection that lexicalizes Path or Place. A form in the inessive case like *talossa* 'in the house' is given a representation as (14-a) and the denotation proposed for the *-s-* inflection is shown in (14-b).

(14) a. $[_{\text{PlaceP}}\ [_{(\subseteq)\text{P}}\ [_{\text{DP}}\ \text{talo}]\ [_{(\subseteq)}\ \text{-s}]]\ [_{\text{Place}}\ \text{-sa}]]$
b. $[\![\text{-s}]\!] = \lambda y \lambda x.[\text{included-by}(y, x) \wedge \text{int-loc}(y)]$
('x included by y, y an internal location')
'in the house'
(from Bellucci & Dal Pozzo 2016, Franco et al. 2017, adapted)

Yet, even postulating 'hyperspecialized' lexicalizations of ⊆/⊇ like that in (14-b) is of no help if we want to maintain zonal inclusion as a primitive in a system where the oblique is lexicalized by both P and K. In fact, defining a semantics for the oblique PPs of Russian or, say, Latin amounts to teasing apart the different contributions made by P and by the case morpheme, for at least two theory-internal reasons. The first theoretical constraint is, rather trivially, Full Interpretation (Chomsky 1995): oblique morphemes and Ps, like any other overt element, must end up interpretable at LF. Hence, if the PP *cum*+$\text{NP}_{[\text{ABL}]}$ in Latin (or *s*+$\text{NP}_{[\text{INS}]}$ in Russian) has a ⊇ content supplemented with a comitative flavor, this content must be contributed by both P and INS. This leads us to the other theoretical concern, viz. the syntax/semantic interface: if the ⊆/⊇ relation is a predicate that takes two arguments and puts them in a zonal inclusion relation (part-whole/possessor-*possessum*, etc.) in either direction, this interpretive content must be manipulated at LF by usual operations such as Function Application, Predicate Modification, type-shifting, and any other modes of composition made available by UG. In the next section, I will try to define a differentiated semantics for case inflections and prepositions occurring in the PPs of Russian that I have identified as the locus of a zonal inclusion relation.

4 PROPOSAL

4.1 A SEMANTICS FOR RUSSIAN OBLIQUE CASE

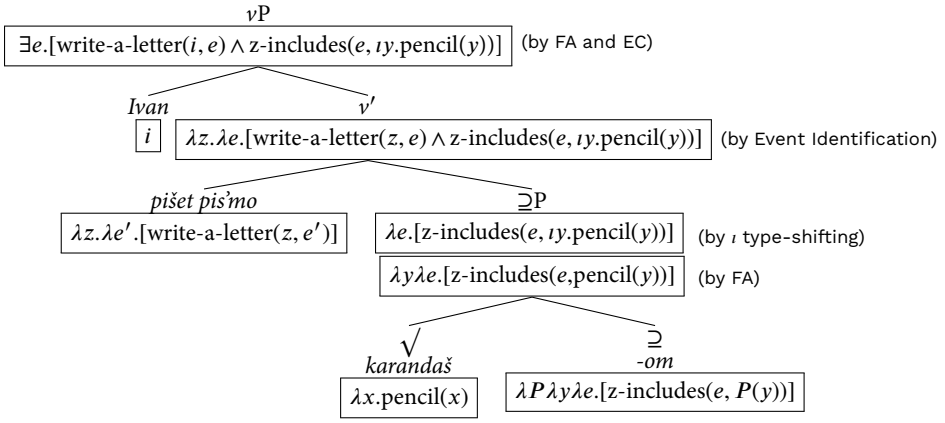
Building on F&M's (2017b) definition of the fundamental oblique and on the discussion of the Russian oblique case system in §3.1.1-§3.1.2, in (15) I formalize the denotation of the GEN and INS inflectional heads (epitomized by the forms in the singular of Class I nouns, *-a* and *-om*) according to their ⊆/⊇ content.[18] A crucial assumption underlying (15) is that the inflected nominal resulting from the attachment of GEN or INS to the root is a predicate (semantic type $\langle e, t\rangle$ or $\langle e, \langle e, t\rangle\rangle$) which, following Chierchia (1998), can subsequently undergo type-shifting (via the operators ∩ 'down', ι or ∃) and need not project a DP to be interpreted as an argument with a generic or (in)definite meaning.

[18] For the sake of brevity, I omit the denotations of DAT and PREP that, by definition, should be that of GEN in (15-a), except for a possible locative specification for PREP (cf. the formula adapted from Bellucci & Dal Pozzo (2016) in (14-b) and some remarks in footnote 16).

(15) a. $[\![\text{-a}_{[\text{GEN}]}]\!] = \lambda P.\lambda y.\lambda x.[\text{ z-included } (y, P(x))]$
'x, x a P, is included in a zone associated with y' – ($\subseteq$)
b. $[\![\text{-om}_{[\text{INS}]}]\!] = \lambda P.\lambda y.\lambda x.[\text{ z-includes } (y, P(x))]$
'x, x a P, includes y, in a zone associated with x' – ($\supseteq$)

Taking it that the root of a common noun is, as standardly assumed, a property-denoting predicate of type $\langle e, t\rangle$ that is fed to the λ-abstracts in (15) as their first argument, the oblique-inflected nominal (corresponding to the $\subseteq/\supseteq$ projection) is actually a two-place relation between two entities, one of which has the properties described by the noun root.[19] To make it clear, a derivation for example (12-a) is provided in (16), where the denotation of the top node roughly reads 'there is an event e such that e is an event of writing a letter by Ivan and the pencil is included in a zone associated with e', which conveys the reading we want, with the proviso that 'included in a zone associated with e' is shorthand for a set of 'zonal inclusion' properties (being a *possessum*, a controlled entity, etc…) picking up the most contextually salient interpretation at LF, i.e., the 'instrument-of' reading.

(16) Ivan pišet pis'mo karandašom.



In the simplified schema in (16), besides collapsing the verb with its object, I have omitted the semantic types, so the INS-inflected $[\![karandašom]\!]$ is implicitly taken to have type $\langle e, \langle v, t\rangle\rangle$, as it takes first an argument of type e (immediately discharged by a type-shifting operator, in this case ι, that binds the variable y) and then an event argument (type v). A simple (non-neo-Davidsonian) event semantics is assumed, thus the verb-object complex is of type $\langle e, \langle v, t\rangle\rangle$ and cannot compose with the type-shifted phrase *karandašom* (type $\langle v, t\rangle$) by way of ordinary Function Application. However, this configuration (a function f of type $\langle e, \langle v, t\rangle\rangle$ and a function g of type $\langle v, t\rangle$ as input of composition) is precisely what Kratzer (1996:122) requires for her Event Identification rule to apply and yield a function h (type $\langle e, \langle v, t\rangle\rangle$) as output:[20] the e' argument of the vP gets identified with the event variable carried by *karandašom* and composition proceeds further to the discharging of the external argument and to existential closure. I assume that the same device also works for the GEN in (9-b), the only differences being the direction of the zonal inclusion relation and the site of attachment (NP/DP instead

[19] The way predicates are labelled in (15) (*z-includes*, *z-included*) may appear misleading w.r.t. the direction of the inclusion relation, but it simply reflects the order in which the arguments are taken by the predicate, i.e., first the argument in the sibling node of the head $\supseteq$ or $\subseteq$, then the sibling node of its projection. The prefix *z-* in the terms *z-includes* and *z-included* stands, rather trivially, for *z(onally)*, to refer to the zonal inclusion relation and to avoid possible confusion with the subset/superset relation proper or with spatial relations.

[20] Event Identification is proposed by Kratzer to implement the Agent-introducing projection Voice and detaching, semantically and syntactically, verbs from their external arguments. Even if in the structure in (16) I do not make use of a Voice projection and retain the external argument as part of the argumental structure of the vP, I resort to Event Identification drawing on its definition as given by Kratzer (1996:122): "one of several admissible conjunction operations, [which] makes it possible to chain together various conditions for the event described by a sentence".

of VP) of the inflected nominal.[21]

Before proceeding to the next section, in which prepositions are integrated into the theoretical framework, something still needs to be said on Predicate instrumentals, as far as I have rejected a view of INS as the mere outcome of a feature-checking operation triggered by a Pred head, claiming (in line with F&M 2017a 2017a, 2017b) that obliques are elementary predicates endowed with a semantic content.[22] In order to show that in Russian the ⊇ content of the INS inflection is likely to play a role in its licensing in predication, I will briefly elaborate only on copular contexts, starting from two observations: *a*) the NP sitting in the complement position of a primary predicate small clause can optionally receive INS case only if an overt, fully-fledged copula *byt'* is present, that is, the predicate must necessarily be past- or future-tensed; *b*) due to the lack of an overt *there*-like expletive, an intransitive copular sentence with a PP adjunct can often be ambiguous between an existential and a predicative sentence; the two are in fact indistinguishable at the morphological level, as shown in (17) (Partee & Borschev 2007:147).

(17) a. V gorode byl doktor.
In town was.M.SG doctor.NOM.M.SG
'There was a doctor in town.'
b. Doktor byl v gorode.
doctor.NOM.M.SG was.M.SG in town
'The doctor was in town.'

Consider now (13-a), repeated here as (18-a), and its alternating counterpart (18-b) with the NP in NOM case: a well known fact, mirrored in the glosses, is that there is a subtle difference in the interpretation of the predicate NP, which in the former example has a stage-level interpretation (the property that is predicated of the subject is understood as temporary) while in the latter it is predicated as a permanent, individual-level property.

(18) a. Ivan byl soldatom.
Ivan.NOM was soldier.INS
'Ivan was a soldier (then).'

b. Ivan byl soldat.
Ivan.NOM was soldier.NOM
'Ivan was (and still is) a soldier.'

A speculation I can offer here to account for the occurrence of INS in copular contexts is that the past tense form *byl* in (18-a) is indeed interpreted in the same way as it is interpreted in (17-a), whereas the $\text{NP}_{[\text{INS}]}$ *soldatom* corresponds to the PP *v gorode*, i.e., to the coda of the existential sentence. I follow Francez (2009) and assume that in a *there*-existential (19-a) the pivot is a second-order predicate (a GQ) and the (non-obligatory) coda is a modifier thereof, whereas the meaning of a bare existential (i.e., an existential with no coda and with the pivot NP headed by a determiner) is as in (19-b).[23]

[21] I am implicitly assuming a type $\langle e, \langle e, t\rangle\rangle$ for the GEN inflection (instead of $\langle e, \langle v, t\rangle\rangle$ of INS), since ⊆P usually attaches to nominal projections. However, it must be postulated also that some kind of coercion operation is available for any ⊆/⊇ phrase (i.e., oblique-inflected nominal) so that, for example, a nominal in the INS case can freely switch from type $\langle v, t\rangle$ to type $\langle e, t\rangle$ if embedded under a (non-eventive) NP. Technically, this may be implemented using Asher's (2011) Type Composition Logic or via polymorphic types in the fashion of Staps & Rooryck's (2024) unified account for *by* in English. Anyway, I will not go into details here and leave this issue aside.

[22] The existence and *raison d'être* in syntactic theory of the supposedly ubiquitous PredP, assumed in most current literature, have been recently called into question by Matushansky (2019), who argues for its elimination from syntactic theory, showing that the motivation for which it was originally conceived (the need for predication in the Small Clause to be mediated) ultimately led to much circular reasoning when PredP was extended to more and more domains.

[23] In (19-b), if τ is any simple semantic type and N is a set determined by the common noun in the pivot (expressed by its characteristic function $\lambda x.N(x)$), Q is a relation between sets determined by the determiner of the pivot. Thus, in (i-a) the relation *no* holds between two sets P, Q iff their intersection is empty, while in (i-b) it holds iff the cardinality of their intersection is 1.

(i) a. $[\![\text{there is no bread}]\!] = \lambda P_{\langle e,t\rangle}[\mathbf{no}_{\langle\langle e,t\rangle,\langle\langle e,t\rangle,t\rangle\rangle}(\lambda x.\text{bread}(x), P)]$

(19) a. There$_{expletive}$ be$_{copula}$ NP$_{pivot}$ XP$_{coda}$.
b. $[\![\text{there be NP}]\!] = [\![\text{NP}]\!] = \lambda P_{\langle\tau,t\rangle}[\mathbf{Q}_{\langle\langle\tau,t\rangle,\langle\langle\tau,t\rangle,t\rangle\rangle}(N_{\langle\tau,t\rangle}, P)]$
(Francez 2009:8)

I take it that in Russian an overt copula can only have the meaning $\lambda x.\lambda P.P(x)$ if it has a NP$_{[\text{NOM}]}$ as its complement (like *soldat* in (18-b)), otherwise the existential reading is activated and the agreeing NP is interpreted as the pivot, the NP$_{[\text{INS}]}$ as the coda. The pivot in the formula in (19-b) is a predicate, but *Ivan* in (18-a) has type *e*, so I assume it is first type-shifted to $\langle e, t\rangle$ by the operator *ident* (Partee 1987:362-366), as in (20-a). Then, since *Ivan* is a proper name, the set N is a singleton, hence the cardinality of the relation Q in (19-b) can only be 1, so we substitute *a* for Q and get the meaning in (20-b).

(20) a. $[\![\text{Ivan}]\!] = ident(i) = \lambda x.[x = i]$
b. $[\![\text{Ivan byl}]\!] = \lambda P_{\langle e,t\rangle}[\mathbf{a}_{\langle\langle e,t\rangle,\langle\langle e,t\rangle,t\rangle\rangle}(\lambda x.[x = i]), P)]$

Now consider the NP$_{[\text{INS}]}$ *soldatom*: its meaning in (21-a) is composed by FA of the predicate λx.soldier(x) to the denotation of INS (15-b), exactly like *karandašom* in (16). *Soldatom*, however, is not referential, so we cannot assume ι type-shifting as for *karandašom*, and neither is it an indefinite, so the $\exists$ operator is also ruled out. The only option left among the type-shifting operations that, according to Chierchia (1998), are freely available in a D-less language like Russian is the one that 'nominalizes' a property into a kind, namely the $^{\cap}$ 'down' operation. Indeed, reference to the soldier-kind or to 'soldierhood' is also the interpretation that intuitively seems to fit best into a context like (18-a), so assume that (21-a) undergoes 'down' $^{\cap}$ type shifting and yields (21-b).

(21) a. $[\![\text{soldatom}]\!] = \lambda x\lambda y.[\text{z-includes}(y,\text{soldier}(x))]$
b. $^{\cap}([\![\text{soldatom}]\!]) = \lambda y.[\text{z-includes}(y,{}^{\cap}\text{SOLDIER})]$

If we now come back to the formula in (20-b), it is a λ-abstract expecting to be fed by an argument of type $\langle e, t\rangle$ to get a truth value, and for Francez (2009), indeed, this is still an uncontextualized meaning which must be applied to a contextually salient set C. However, the meaning of the NP$_{[\text{INS}]}$ *soldatom* in (21-b) is exactly of type $\langle e, t\rangle$, so it can be applied at once to (20-b) by ordinary FA and yield (22), which approximately reads 'the intersection of the (singleton) set of the entities that are Ivan with the set of the entities that zonally include the soldier-kind/the property of 'soldierhood' has cardinality 1'. Adding the contribution of Tense, which we have so far ignored, this is equivalent to saying 'at a contextually salient past time, Ivan was in the set of entities that are soldiers', which is precisely the meaning we want.[24]

(22) $[\![\text{Ivan byl}]\!]([\![\text{soldatom}]\!]) = \lambda P_{\langle e,t\rangle}[\mathbf{a}(\lambda x.[x = i]), P)](\lambda y.[\text{z-includes}(y,\text{soldier}(x))])$
$= \mathbf{a}(\lambda x.[x = i]), \lambda y.[\text{z-includes}(y,{}^{\cap}\text{SOLDIER})])$

---

b. $[\![\text{there is a flower}]\!] = \lambda P_{\langle e,t\rangle}[\mathbf{a}_{\langle\langle e,t\rangle,\langle\langle e,t\rangle,t\rangle\rangle}(\lambda x.\text{flower}(x), P)]$

The set P is abstracted over in the examples in 23 and the meanings (i-a) and (i-b) are *uncontextualized* until a contextually salient set or *contextual domain* C – in the absence of an overt modifier (i.e., a coda) – binds P, yielding the *contextualized* meanings in (ii).

(ii) a. $[\![\text{there is no bread}]\!]_{contextualized} = \lambda P_{\langle e,t\rangle}[\mathbf{no}(\lambda x.\text{bread}(x), P)](C) = \mathbf{no}(\lambda x.\text{bread}(x), C)$
b. $[\![\text{there is a flower}]\!]_{contextualized} = \lambda P_{\langle e,t\rangle}[\mathbf{a}(\lambda x.\text{flower}(x), P)](C) = \mathbf{a}(\lambda x.\text{flower}(x), C)$

[24]Admittedly, this account for INS in copular environments, prompted by an anonymous reviewer, is highly speculative and needs more careful implementation and further evidence. However, a clue that it might be on the right track is that in (22) Tense scopes over the existential assertion, which has the nice consequence that the NP$_{[\text{INS}]}$ restricts it relative only to a certain time interval, yielding the stage-level reading of the property that is predicated.

	⊆			–	⊇
	DAT	GEN	PREP	ACC	INS
bez		+			
čerez				+	
dlja		+			
do		+			
iz		+			
k	+				
krome		+			
meždu		(+)			+
na			+	+	
nad					+
o			+	+	

	⊆			–	⊇
	DAT	GEN	PREP	ACC	INSTR
ot		+			
pered					+
po	+	(+)	+	+	
pod				+	+
pri			+		
pro				+	
radi		+			
s		+		+	+
u		+			
v			+	+	
za				+	+

Table 1: Case selection of Russian primary prepositions (Švedova 1980:§1657, p. 705)

4.2 THE CONTRIBUTION OF THE PREPOSITION: *S* AS A CASE STUDY

Table 1 lists Russian's 22 primary prepositions and the morphological cases selected by each, grouped by the relevant zonal inclusion relation they encode (⊆/⊇), where the dash (–) over ACC simply stands for the absence of any such relation. Even at a quick glance at the table, *s* stands out as the most interesting case, for it can combine with GEN, INS and ACC, that is to say, with two items lexicalizing the zonal inclusion relation in either directions, on the one hand, and, on the other hand, with an inflection which is neutral w.r.t. such a relation, since its content, by hypothesis, is presumably null or somewhat 'purely syntactic'. As noted in §1, differently case-inflected nominals attached to *s* yield idiosyncratic interpretations, apparently not reducible to a common content ('off'/'from'/'since' *vs* 'with' *vs* 'about'/'approximately-the-size-of'), as shown in (2). Thus, *s* can reasonably serve as a case study for observing how oblique cases and Ps, conflated by F&M (2017b) into a single category characterized by the ⊆/⊇ content, interact in a language like Russian, where this class must feature, as a minimal requirement, two clearly distinct subclasses, each making a different contribution to the interpretation of the PP. So, if the content of oblique inflections is as formalized in (15), what are the conditions for embedding, say, an INS-inflected nominal under a P (for example, *s*)? The claim I advance here is that these are the same conditions required for embedding a GEN- or ACC-inflected nominal under *s*, or, in other words, that the denotation of *s* alone is unchanged and the different meanings (provenance/causation, comitativity, approximation) should be imputed to the contribution of the case inflection only. To implement this idea, the hypothesis I will investigate can be phrased in these terms: if the preposition *s(o)* specifies the inclusion relation denoted by INS (⊇) as comitative, then it must introduce some kind of modification or restriction into the inflected nominal, i.e., into the predicate that relates x (the λ-bound variable left after saturation of y by merger with the nominal base) to being included in the 'zone' of x. Moreover, this modifier must be such that it also yields the interpretations that y is related to x as its source (event/entity/place/time of origin), when the inflection is GEN (⊆), and that y is comparable in size to x, when it is ACC.

It can easily be observed that a comitative relation expressed as a predicate x-with-y usually entails prominence of its subject, whereas in the relation that, by hypothesis, is its opposite (x-from-y) what turns out to be somehow more prominent (more 'visible' or 'given') is its subject. These facts are clearly reminiscent of the Ground/Figure pair familiar from cognitive linguistics and invite comparison with their features, as proposed by Talmy(2000 and earlier work). Thus, I suggest that *s* modifies the zonal including relation and gives rise to a Ground/Figure pattern in the form of a one-place predicate (notated *gr/fig*), which is calculated contextually, relative to the direction of the relation:

in the case of *s*+$NP_{[INS]}$ the sister of the $\supseteq$ projection, i.e., the subject of the 'z-includes' predicate, is interpreted as Ground (and the included entity, necessarily, as Figure). With GEN, things go the other way round and the subject of the 'z-included' predicate, as the included/controlled entity, is interpreted as Figure. Before implementing technical details and addressing possible issues of compositionality, I wish to clarify that the Ground/Figure conceptualization I plan to employ, although this notion originates in the spatial domain, is devoid of any characterization understood with reference to physical space and makes no reference to locations or paths as its primitives, whereby contrastive pairs such as static/dynamic or large/small are conceived on a more abstract level.[25] The statement above that "*s* gives rise to a Ground/Figure pattern" is to be understood as a mapping from the broad and somewhat vague zonal inclusion relation to the more specific (though still very abstract) Ground/Figure relation, so that the members of the inclusion relation get equipped with the properties in (23) and with additional features derived therefrom.

(23) *The general conceptualization of Figure and Ground in language*
The Figure is a moving or conceptually movable entity whose path, site, or orientation is conceived as a variable, the particular value of which is the relevant issue. The Ground is a reference entity, one that has a stationary setting relative to a reference frame, w.r.t. which the Figure's path, site, or orientation is characterized (Talmy 2000:312).

4.3 MODES OF COMPOSITION: INTRODUCING RESTRICT

In the previous section it was remarked, on intuitive grounds, that the very broad relation of zonal inclusion is somehow narrowed down or specified by the intervention of a P like *s*, so the latter arguably acts as a modifier of the predicate introduced by the oblique inflection. Though, as is also clear from (16), an oblique noun, taken by P as its complement, is in effect a zonal inclusion predicate with only one λ-bound variable, the other being already bound by $\cap$, ι or $\exists$, hence not available for targeting by further composition operations. On the other hand, it is also obvious that whatever composition operation occurs at the PP node, it does not saturate this argumental slot, which is filled only at a subsequent stage by the element taking the PP as a complement.[26] This is also consistent with the intuition that some sort of modification at the PP level is involved.

Chung & Ladusaw (2004), based on their analyses of object incorporation in Chamorro and indefinite determiners in Māori, propose a new rule of semantic composition called Restrict (or Predicate Restriction, hereafter PR), by which a property P (type $\langle e, t\rangle$) can target an unfilled argument slot of a predicate relation R and restrict it to its extension, leaving it unsaturated and available for saturation at a later stage, as in (24).

(24) $\text{RESTRICT}(\lambda y\lambda x\lambda e.[\text{feed}'(y)(x)(e)], \text{cat}') = \lambda y\lambda x\lambda e.[\text{feed}'(y)(x)(e) \wedge \text{cat}'(y)]$

Chung & Ladusaw (2004:73) claim that lexical items carry explicit instructions on the way they are entered into composition, so PR must apply whenever a head requires it.[27] They also emphasize (2006:347ff.) that Restrict is only superficially similar to intersective

[25] Of course, this does not preclude that interpretations entailing physical stativity or dynamicity may arise as the result of the composition with specific lexical items or, as argued by Manzini & Roussou (2012), by way of interpretive enrichments that are produced at LF whenever needed, by the introduction of operators (i.e., λ-abstracts) that create the relevant relations.

[26] If the PP is an adjunct to another element, rather than its complement, the open argumental slot of the inclusion relation may not be technically saturated but identified – by PM – with the λ-bound variable of that element. This is fully equivalent to the effects of the saturation of the zonal inclusion relation, since its referential filling is just postponed to a later stage, as actually happens in (26).

[27] To this end, they claim, Restrict is not an operation that applies when composition by ordinary Function Application is not possible, nor is it like type-shifting, a Last Resort operation employed by Grammar to remedy type-mismatches or to achieve semantic completeness.

modification, since it has domain-narrowing properties that, for example, prevent an argumental slot, already supplied via PR with a property P, to be saturated (or composed again via PR) with a property Q whose domain is not subordinate to that of P. Based on the discussion so far, the claim I advance here is that prepositions in Russian are entered into composition via PR, narrowing down the domain of the external argumental slot of the zonal inclusion relation, yet leaving it unsaturated and available for composition with the head of the projection immediately dominating the PP.

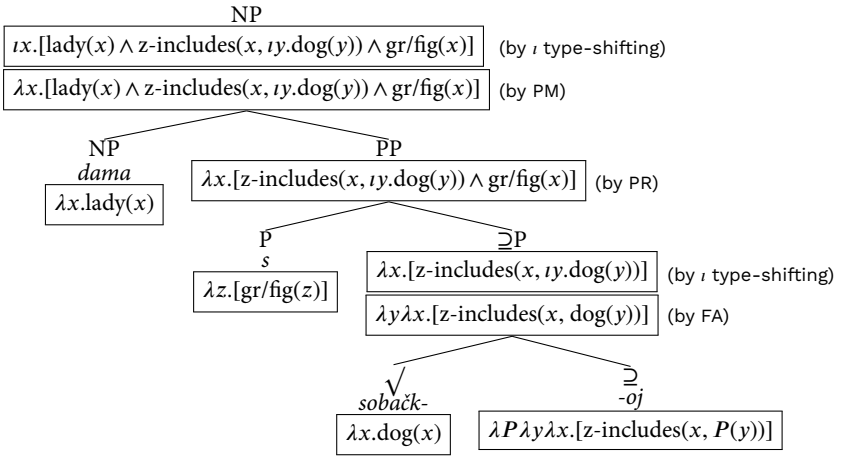
4.4 IMPLEMENTATION: THE PREPOSITION *S* IN THE STRUCTURE

Let me keep the preposition *s* as a case study on the basis of (2-b), repeated below as (25).

(25) dama s sobačkoj
lady with dog.INS
'the lady with the little dog'

The proposal I put forth that the predicative content of *s* is basically the property of being Ground or Figure requires that the device for assigning either value be explicit. Consider the denotation of *s* in (26), where I propose a syntactic structure (and the corresponding semantic composition) for (25): $\lambda z.$[gr/fig(z)] means that the argument z taken by the predicate is either interpreted as Figure or as Ground, but it can only be interpreted as such after composition at the PP node with the predicate expressing the zonal inclusion relation has taken place, and only making reference to the other conjunct in the formula (z-includes(x, $\iota y.dog(y)$)). Since x includes in its 'zone of control/experience' the entity ιy.dog(y), and x is either Ground or Figure, as an 'inclusor' it is necessarily interpreted (locally, at the NP level) as Ground (conversely, the other argument in the predicate is automatically interpreted as Figure).

(26)



When semantic composition reaches the adjunct NP node and the argumental slot x is saturated, the interpretation as Ground of the entity x is (re-)calculated contextually on the basis of the features of ιx.lady(x) that are compatible with the features associated to the notion of Ground as defined by Talmy (2000:315–316), namely: *a*) an inclusor is a reference-point; *b*) a superset is conceptually larger; *c*) an entity (A) associated to a zone in which entity (B) is included is more independent, is more familiar/expected, and is more immediately perceivable.[28] Finally, the interpretation of *s sobačkoj* in (25) as a

[28] A brief note is in order here on why there are two composition operations at top node of the tree, namely Predicate Modification of *dama* by the PP, followed by a iota type-shifting operation. As is evident, the PP is an adjunct to the NP *dama* and technically the latter does not saturate the lambda-bound argumental slot x of the PP ('restricted' by the preposition *s*), that is type-shifted to a definite description by the ι operator only after the PP has adjoined to the NP. However, the domain-narrowing effect, which according to Chung & Ladusaw (2004, 2006) is a hallmark of the operation Restrict, has already occurred at the level of the PP,

comitative relation in a strict sense is ensured by a referential property shared by the two nouns, the animacy feature.[29] Nevertheless, other properties of Ground, such as that of being larger, more permanently located, or geometrically more complex, may prove to be more compatible with referential properties of other NPs, as in (27), where they give rise to a 'part-whole' (or 'permanent property') interpretation (Stolz et al. 2008:41–43).

(27) dom s mezoninom
house with mezzanine.INS
'the house with the mezzanine'

A 'bidirectional' definition of the denotation of $[\![s]\!]$ as $\lambda z.[\text{gr/fig}(z)]$ has the advantage of identifying the higher nominal with Figure when the complement of *s* encodes the superset-of ($\supseteq$) relation, i.e., it is an $\text{NP}_{[\text{GEN}]}$: in (2-c) first *veter* is assigned the value Figure, since the predicate introduced by the GEN inflection ends up, roughly, like 'the unique x such that x is the wind and x is included in the zone associated with y, and y is the unique y such that y is the sea'; consequently Ground gets identified with *more* and some properties of the latter are enriched or re-interpreted accordingly, to yield meanings like point of origin, source, (indirect) cause, etc. Another welcome feature of a two-way definition of the Ground/Figure denotation is its ability to also derive the meaning 'approximate equation/comparison' of the preposition *s* when the noun is in ACC case: when no zonal inclusion relation is expressed (as is the case with ACC), the argument targeted by $\lambda z.[\text{gr/fig}(z)]$ cannot be assigned a value of Ground or Figure. Since the property must be interpreted anyway, failure to assign a value to the higher element x (in the relation between the internal argument y and the external argument x of the nominal inflection) results in both x and y being able to get either value (or be ambiguous between one and the other), thus making x and y isomorphic, that is, commensurable, which is precisely the definition of the meaning of s+$\text{NP}_{[\text{ACC}]}$ given in descriptive grammars of Russian. For the PP *s banku* in (2-a) I propose that composition goes as in (28):[30]

(28) $[\![s]\!] = \lambda z.[\text{gr/fig}\ (z)]$; $[\![bank\text{-}]\!] = \lambda x.[\text{can}\ (x)]$; $[\![\text{-}u_{[\text{ACC}]}]\!] = \lambda P.P$
$[\![\text{-}u_{[\text{ACC}]}]\!]\ ([\![bank\text{-}]\!]) = \lambda x.[\text{can}\ (x)]$ (by FA)
$[\![s]\!]\ ([\![banku]\!]) = \lambda x.[\text{gr/fig}\ (x) \wedge \text{can}\ (x)]$ (by PR)

I take it that the denotation of the ACC morpheme is vacuous, since it does not introduce any relation between entities and, as far as I have assumed that roots of (non-relational) common nouns are properties and their type is $\langle e, t\rangle$, direct case must do nothing and only allow this property to undergo type-shifting (via $^{\cap}$ 'down', ι or $\exists$) in order for the noun to be referential and be taken by the verb as an argument of type e (an entity) or

since the domain of the internal argument of the predicate, the target of Restrict, reduces to either of the two functions of the Ground/Figure relation, in this case Ground, due to the *subset-of*/$\supseteq$ nature of the INS morpheme.

[29] An anonymous reviewer points out that a potential problem for the analysis proposed here is how it treats simple case, without a P, since it could be argued that an abstract *gr/fig* relation is present also in these cases and, for example, the difference between a comitative and an instrumental may be imputed mainly to the animacy feature, not the type of 'inclusion' (in other words, it is suggested that some type of DOM is at play in such cases). While it is true that in some contexts like (i-a) the complement position of *s* is restricted to sentient entities, I take it that (i-b) is a true comitative sentence, even if the complement of *s* lacks the animacy feature, hence I exclude DOM phenomena.

(i) a. S nim byl infarkt.
with him.INS was.M.SG heart-attack.M.SG.NOM
'He had a heart attack.'
b. Ja prosto uexal so svoimi veščami.
I simply left with REFL.POSS.PL.INS things.INS
'I just left with my stuff.'

[30] The complement *supa* 'of soup' of the NP *banka* 'can' is omitted for simplicity.

$\langle\langle e,t\rangle,t\rangle$ (a GQ).[31] In (28) I assume there is no type shifting as the noun is non-referential, and the PP is, in fact, predicative. The peculiar status of the PP with ACC (as opposed to those with INS and GEN) could then arguably be a consequence of its different semantic type.[32]

5 CONCLUSION: SOME CONSEQUENCES FOR ASPECTUAL PREFIXES

Approaching the end of this paper, I wish to suggest some possible outcomes that the theory laid out so far opens up w.r.t. aspectual prefixation, a ground that mirrors the difficulties faced to account for multiple-case Ps, as recalled in §1. A proposal that has come up recently in the field is Tolskaya's (2015, 2018) decomposition of prefixed verbs as having their meaning arising from a core semantics of the P that interacts with its position in the (cartographic, fine-grained) structure of Asp and V. As convincing and elegant as her proposal is, I argue that, taking advantage of the conceptualization of P (preposition = prefix) that I have proposed, i.e., as entering into composition via PR, it can be simplified and recast in such a way that at least a part of its convoluted structure can be dispensed with, while reducing the amount of needed movement operations. Suppose we amend the denotation of P proposed in §4.4 and let it also introduce an event argument e' which is carried with x as a λ-bound variable e' when PR applies, as in (29).

(29) $[\![\text{s}]\!] = \lambda z.\lambda e'.[\text{gr/fig}(e', z)]$

Suppose also that Ramchand's (2004:327) Principle of Event Composition (EComp for short) advocated by Tolskaya holds when P takes a verb as its complement, so that e' 'leads to' the verb's event argument e.[33] For (30), then, the composition can go as in (31).

(30) Poezd so-šël s rel's. (Tolskaya 2015:228)
train s-walked from rails
'The train derailed.'

(31) $[\![poezd]\!] = \iota x.[\text{train}(x)]$;
$[\![šël]\!] = \lambda z.\lambda e.[\text{go}(z, e)]$;
$[\![rel's_{[\text{GEN}]}]\!] = \lambda x.[\text{z-included}(x, \iota y.\text{rail}(y))]$
$[\![sošël]\!] = \lambda z.\lambda e'.\lambda e.[\text{go}(e, z) \wedge \text{gr/fig}(e', z) \wedge \text{leads-to}(e', e)]$
(by PR and EComp)
$[\![s\ rel's_{[\text{GEN}]}]\!] = \lambda x.\lambda e'.[\text{z-included}(x, \iota y.\text{rail}(y)) \wedge \text{gr/fig}(e', x)]$
(by PR, x interpreted as Figure since x is zonally included)
$[\![sošël\ s\ rel's]\!] = \lambda z.\lambda e'.\lambda e.[\text{go}(e, z) \wedge \text{gr/fig}(e', z) \wedge \text{leads-to}(e', e)$
$\wedge\ \text{z-included}(z, \iota y.\text{rail}(y)) \wedge \text{gr/fig}(e', z)]$
(by Event Identification)
$[\![poezd\ sošël\ s\ rel's]\!] = \lambda e'.\lambda e.[\text{go}(e, \iota x.\text{train}(x)) \wedge \text{leads-to}(e', e)$
$\wedge\ \text{z-included}(\iota x.\text{train}(x), \iota y.\text{rail}(y)) \wedge \text{gr/fig}(e', \iota x.\text{train}(x))]$

[31] The idea that obliques are of type $\langle e,t\rangle$ (or $\langle e,\langle e,t\rangle\rangle$) while NOM and ACC are of type $\langle\langle e,t\rangle,t\rangle$ relies on the conjecture, put forth by Partee et al. (2012), that alternations in Russian between ACC and NOM, on the one hand, and GEN, on the other hand, correspond to an alternation of type e and type $\langle e,t\rangle$.

[32] The construction s+NP$_{[\text{ACC}]}$ has been investigated in Billings (1995), who singled out several restrictions to which it is subject, among which are the so-called 'single word constraint' (by which only one noun must be embedded under *s*, although there are some exception) and the ban on plurals (which, however, does not affect *pluralia tantum*, so a noun like *vorota* 'gate' is fine, since it is morphologically plural but semantically singular). Another exceptional feature of s+NP$_{[\text{ACC}]}$ is its ability to be be inserted also in argumental position, a feature that, to my knowledge, it shares only with the PPs headed by po+NP$_{[\text{DAT}]}$ (only in the singular) or po+NP$_{[\text{ACC}]}$ (if an item in ACC is a numeral only). Since *po* is the only other P of Russian that can take three cases, I suspect this feature actually has something to do with the presence of ACC and its different semantic type, but for reasons of space I cannot go into details and I will leave the issue for future research.

[33] The exact formulation of the principle states that "if a head X which introduces an eventuality variable e_x, embeds a projection YP where Y introduces the eventuality variable e_y, then the structure is interpreted as $e_x \rightarrow e_y$ (e_x 'leads to' e_y)".

The denotation in (31) reads 'there exists an event e' such that e' leads to an event e of a train going, and the train is zonally included in the rail, and the train is a Figure (= is from Ground, i.e., the rail) in e'''. Thus, in principle, the meaning of a prefixed perfective verb can be derived by simply embedding the unprefixed imperfective verb under P, whereby semantic composition can do the job with no need to postulate a strict syntax-semantics, one-to-one, mapping. This is, of course, just a suggestion and much work, which I leave for future research, is needed to achieve such a result.

To sum up the main results of this paper, it has been shown that the conceptualization of oblique case as an elementary inclusion predicate put forth by M&S (2011 and subsequent works) can be effectively applied to Russian, which appears to be consistent with it. To overcome some vagueness in the 'oblique as zonal inclusion' theory, a formal semantics for the zonal inclusion relation has been provided and it has been proposed that the different contributions made by the oblique case inflection and by the preposition amount to a domain-narrowing of the former by the latter, crucially involving Predicate Restriction (Chung & Ladusaw 2004, 2006). Finally, it has been suggested that an explanation of the intricacies of Russian aspectual prefixation may fruitfully benefit from adopting Predicate Restriction as the mode of composition of P with the unprefixed verb, reducing the articulated cartographic structure adopted in most current approaches.

ABBREVIATIONS

3	third person	LF	Logical Form
ABL	ablative	LOC	locative
ACC	accusative	M	masculine
ADJ	adjective	N	neuter
ADV	adverb	NOM	nominative
DAT	dative	PART	partitive case
DOM	Differential Object Marking	PFV	perfective
EVAL	evaluative suffix	PL	plural
EC	Existential Closure	PM	Predicate Modification
F	feminine	POSS	possessive
FA	Function Application	PR	Predicate Restriction
GEN	genitive	PREP	prepositional case
GQ	Generalized Quantifier	PST	past
INF	infinitive	REFL	reflexive
INS	instrumental	SG	singular

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