

Two types of prepositions in Serbian and the nature of Spell-out

Monika Bašić

This paper explores the syntactic behaviour of two classes of apparently synonymous prepositions in Serbian. It is shown that the two classes differ in the degree to which they allow measure phrases and null DP-complements. The analysis proposed captures the observed differences in terms of a detailed syntactic decomposition of PPs, as well as relates the syntactic behaviour of each class to their morphological make-up. The analysis is then extended to account for a similar pattern in English. The goal is to show how the properties of various types of Ps in both English and Serbian can be made to follow from the lexical specification of the particular vocabulary items found in each language.

1. Two types of Ps in Serbian

Serbian has two classes of apparently synonymous prepositional elements. The members of each class, which I label as *Simple* and *Complex* prepositions, are listed in the table below.

(1)

SimplePs	ComplexPs	
<i>nad</i>	<i>iznad</i>	over, above
<i>pod</i>	<i>ispod</i>	under
<i>pred</i>	<i>ispred</i>	in front of
<i>za</i>	<i>iza</i>	behind

The chosen labels refer to the morphological complexity of the two classes of prepositions. SimplePs are monomorphemic, while ComplexPs are formed by attaching the morpheme *iz* to one of the SimplePs.¹

- (2) $iz + nad \rightarrow iznad$
 $iz + pod \rightarrow ispod$

¹The labels have been chosen in order to avoid any theoretical implications. My intention is however not to suggest that there are no other morphologically simple or complex prepositions in the language.

$iz + pred \rightarrow ispred$
 $iz + za \rightarrow iza^2$

The morpheme *iz* which occurs in ComplexPs is homophonous with the source preposition, meaning ‘from, out of’:³

- (3) David je istrčao iz kuće.
 David AUX run out.of house
 ‘David ran out of the house.’

However, when *iz* is combined with one of the SimplePs, the resulting complex preposition does not have a source interpretation. In fact, both Simple and ComplexPs can be used in the same context, with no significant difference in meaning.⁴

- (4) a. David je stajao pred kućom/ispred kuće.
 David AUX stood in.front house/in.front house
 ‘David was standing in front of the house.’
 b. Helikopter je leteo nad gradom/iznad grada.
 helicopter AUX flown over town/over town
 ‘The helicopter was flying over the town.’

Interestingly, this is not the case in other Slavic languages, such as Russian or Czech, where the corresponding complex prepositions do have source meanings. Thus while *iz-pod* in Serbian means simply ‘under,’ the Russian *iz-pod* and the Czech *z-pod* mean ‘from under.’ Consider the following example from Russian:

- (5) Myšj vybežala iz-pod krovati.
 mouse out-ran from-under bed
 ‘The mouse ran from under the bed.’ (from Arylova et al. 2005)

That ComplexPs in Serbian are truly locative expressions can be shown by applying several diagnostics (based on Svenonius to appear). First of all, as other locative PPs, ComplexPs can appear in the complement position of stative verbs:

- (6) Banka se nalazila ispred hotela.
 bank REFL located in.front hotel
 ‘The bank was located in front of the hotel.’

²Note that phonological changes can slightly alter the shape of the morpheme *iz* in ComplexPs. Thus, when *iz* attaches to *pod* and *pred*, assimilation in voicing gives rise to the forms *ispred* and *ispod*. On the other hand, when *iz* attaches to *za*, elision reduces a double consonant to a single one.

³Abbreviations are as follows: ACC - accusative case, AUX - auxiliary, DIST - distal morpheme, EZ - ezafe linker, INSTR - instrumental case, *I* - imperfective, *P* - perfective, REFL - reflexive

⁴In the examples throughout the article, DP complements of Simple and ComplexPs surface bearing instrumental and genitive case respectively. SimplePs belong to case-alternating prepositions, occurring with instrumental case in locative uses and accusative in directional uses. On the other hand, there is no case-alternation with ComplexPs — the DP complement always surfaces in genitive case. I will set aside the issue of case assignment since I will mostly focus on locative uses of these prepositions.

Furthermore, PPs headed by a ComplexP can be used as locative adjuncts to verb phrases which imply no motion:

- (7) David je pretučen iza škole.
 David AUX beaten behind school
 ‘David was beaten up behind the school.’

Replacing the ComplexPs above with the source preposition *iz* (or any other directional PP) gives rise to ungrammaticality, showing that *iz*, when it occurs on its own, behaves as a directional preposition.

- (8) a. *Banka se nalazila iz hotela.
 bank REFL located from hotel
 b. *David je pretučen iz škole.
 David AUX beaten from school

It can be thus concluded that there are two sets of locative prepositions in Serbian which share basically the same meaning. This article will focus on syntactic properties of these two classes. It will be shown that Simple and ComplexPs differ in the degree to which they allow measure phrases and null DP-complements. I will then propose how the observed differences could be captured in terms of a detailed syntactic decomposition of PPs, as well as relate them to the morphological make-up of each class.

The article is organized as follows. In §2, I identify and illustrate the differences between Simple and ComplexPs, building on Svenonius (to appear). In §3, I turn to a similar pattern in English and an attempt to account for it presented in Svenonius (to appear). I spell out my background assumptions in §4 before moving on to the proposed analysis of the observed patterns in §5. Section 6 concludes the paper.

2. *Contrasting Simple and ComplexPs*

We have seen that both Simple and ComplexPs in Serbian are locative prepositions. As such they express static location and provide information regarding the relationship between the Figure (an object which is being located) and the Ground (the landmark with respect to which the Figure is located). Focusing on their syntactic properties, Simple and ComplexPs can be shown to differ in at least two properties, compatibility with measure phrases and licensing of phonetically null Grounds (drawing on Svenonius (to appear)).

First of all, there is a distinction between Simple and Complex prepositions in the degree to which they allow measure expressions. Measure phrases can be used to modify ComplexPs, as illustrated by the following examples:

- (9) a. Ona je stajala tri metra ispred ulaza.
 she AUX stood three meters in.front entrance
 ‘She was standing three meters in front of the entrance.’
 b. Par centimetara ispod kolena, imao je ogromnu modricu.
 a.few centimeters under knee had AUX huge bruise
 ‘A few centimeters under the knee, he had a huge bruise.’

- c. Kuća se nalazila desetak metara iznad puta.
house REFL found ten meters above road
'The house was about ten meters above the road.'

The same examples with SimplePs are however degraded:⁵

- (10) a. ??Ona je stajala tri metra pred ulazom.
she AUX stood three meters in.front entrance
'She was standing three meters in front of the entrance.'
- b. ??Par centimetara pod kolenom, imao je ogromnu modricu.
a.few centimeters under knee had AUX huge bruise
'A few centimeters under the knee, he had a huge bruise.'
- c. ??Kuća se nalazila desetak metara nad putem.
house REFL found ten meters above road
'The house was about ten meters above the road.'

Secondly, ComplexPs allow their complement, i.e., the Ground, to be omitted in certain contexts. The examples below show that identifying the Ground anaphorically is generally sufficient.

- (11) a. Na kraju ulice je naša kuća, a ispred (kuće) je parkiran naš auto.
at end street AUX our house and in.front house AUX parked our car
'Our house is at the end of the street, and our car is parked in front.'
- b. Sedeli smo i posmatrali plažu, dok je iznad (plaže) kružilo jato
sat AUX and watched beach while AUX above beach circled flock
galebova.
seagulls
'We were sitting and watching the beach, while a flock of seagulls was circling above the beach.'
- c. Na vrhu brda je stajalo orahovo drvo, a ispod (njega) je bilo zakopano
on top hill AUX stood chestnut tree and under it AUX been buried
blago.
treasure
'On top of the hill, there was a chestnut tree, and under it the treasure was buried.'

With SimplePs, on the other hand, the Ground must be overt.

- (12) a. Na kraju ulice je naša kuća, a pred *(kućom) je parkiran naš auto.
at end street AUX our house and in.front house AUX parked our car
'Our house is at the end of the street, and our car is parked in front.'
- b. Sedeli smo i posmatrali plažu dok je nad *(plažom) kružilo jato
sat AUX and observed beach while AUX above beach circled flock

⁵Some speakers I've consulted do not find the contrast to be as strong though they all acknowledge that there is a contrast. A Google search reveals that there might also be differences between Croatian and Serbian speakers, suggesting that Croatian speakers are more likely to accept measure phrases with SimplePs than Serbian speakers. I return to this briefly in §5.

galebova.

seagulls

‘We were sitting and watching the beach, while a flock of seagulls was circling above the beach.’

- c. Na vrhu brda je stajalo orahovo drvo a pod *(njim) je bilo zakopano
 on top hill AUX stood chestnut tree, and under it AUX been buried
 blago’
 treasure
 ‘On top of the hill, there was a chestnut tree, and under it the treasure was buried.’

The distribution of measure phrases and null Grounds with Simple and ComplexPs is summarized in the table below.

(13)

	SimplePs	ComplexPs
measure expressions	*	✓
null Ground	*	✓

I will return to this pattern in §5, where I suggest that the differences in the syntactic behaviour of Simple and ComplexPs can be captured by assuming a rather detailed decomposition of PPs, together with a particular view of the interface spell-out procedure. Before doing so, I turn to the proposal put forth in Svenonius (to appear), intended to capture similar facts in English.

3. Two types of locative Ps in English

3.1. Projective vs Bounded Ps

A similar pattern to the one discussed in the previous section has been observed in English by Svenonius (to appear). Svenonius (to appear) distinguishes two types of locative Ps in English on the basis of their compatibility with measure phrases and the possibility of omitting the Ground. The class of prepositions which he refers to as Bounded Ps disallows both measure phrases and null Grounds, while the class of Projective Ps allows both.

- (14) Projective Ps (in front of, inside, above etc.)
- We remained sixty feet in front of the palace.
 - I saw a line of soldiers. The one in front (of it) was talking on the phone.
- (15) Bounded Ps (next to, beside, against etc.)
- *They opened the door one meter next to the stage.
 - There was a beach. Next *(to it), the cliffs swarmed with birds.

The distribution is summarized below, and is clearly similar to the Serbian facts. Serbian ComplexPs behave like Projective Ps in English, while SimplePs pattern together with what Svenonius (to appear) labels Bounded Ps in English.

(16)

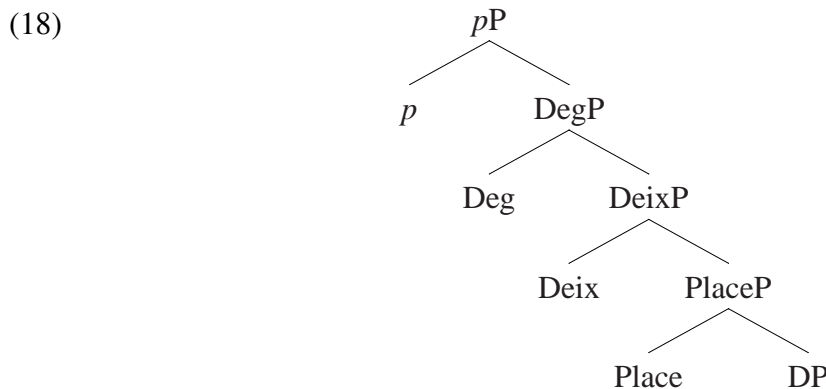
	Bounded Ps	Projective Ps
measure expressions	*	✓
null Ground	*	✓

3.2. Deictic expressions and null Grounds

Svenonius (to appear) establishes another correlation between the possibility of having a null Ground and the possibility of overt *there*. The spatial words *here* and *there* can appear to the right of Projective Ps, but not Bounded Ps.

- (17) a. Get inside there. (Projective P)
 b. *Get next to there. (Bounded P)

Svenonius (to appear) (following Kayne 2004) notes that *there* is not interpreted as the Ground in (17a) — *inside there* means ‘there, inside something,’ rather than ‘inside that place.’ Svenonius therefore concludes that the Ground is null in this case, while the deictic element is introduced higher up, in a layer called Deix[is]. The prepositions themselves head a projection labelled PlaceP, which is dominated by DeixP. The relevant part of the syntactic decomposition of locative PPs argued for in Svenonius (to appear) is given in (18):⁶



Svenonius (to appear) argues that (17a) is derived by phrasal movement of PlaceP to a position left of the deictic element. This movement is obligatory when the Ground is null, as evidenced by the impossibility of having deictic expressions precede the preposition, illustrated in (19b). When the deictic element occurs to the left of the preposition, the Ground must be overt, as shown in (19a).⁷ Svenonius (to appear) thus concludes that the movement of PlaceP licenses the null Ground.

⁶The structure of locative PPs assumed by Svenonius (to appear) is in fact even more elaborate than shown in (18), with two additional categories below Place, namely K for case and Ax[ial]PartP, hosting for instance *top* in a complex expression like *on top of*. For the sake of simplicity, I will ignore these projections as they are not relevant for my current concerns.

⁷Examples such as *Get inside the house here* are grammatical but Svenonius (to appear) shows that in such cases *here* must be inside the DP.

- (19) a. Come here inside the closet.
 b. ??Come here inside.

In this way, the two seemingly independent facts, appearing with a null Ground and preceding a deictic element, are captured by a single movement of PlaceP (which hosts the preposition and the null DP) to the left of the deictic expression. This movement must be unavailable for Bounded Ps, such as the one in (17b), since these are ungrammatical when they occur to the left of *there*. To explain this, Svenonius (to appear) assumes that Bounded Ps have an additional *p* feature, which must be checked by head-movement from Place to *p*. If PlaceP would move to a specifier position below *p*, then the *p* feature of a Bounded P would remain unchecked, assuming that a head cannot move out of a specifier. As a result, Bounded Ps don't allow null Grounds and cannot precede deictic expressions, since both of these properties are dependent on the movement of PlaceP.

Note that by assumption *p* is higher than at least DeixP. If *p* was taken to be lower than Deix, then Bounded Ps could first check their *p* feature and then move leftward across the deictic element, deriving the ungrammatical (17b). Thus the categorial hierarchy given in (18) coupled with the assumption that Bounded Ps have an additional *p* feature and that the movement of PlaceP to a position above Deix licenses null Grounds derives the distribution of null Grounds and captures the placement of deictic elements.

What is not stressed in Svenonius (to appear) though and poses a potential problem for the analysis is the fact that deictic expressions are compatible with both types of locative Ps when the Ground is overt.

- (20) a. Come here inside the closet. (Projective P)
 b. Lie there next to the closet. (Bounded P)

It is not entirely clear whether the deictic element occupies the specifier or the head of Deix on Svenonius's (to appear) analysis, but either option seems problematic. If *there* was in the head of DeixP, it would block head movement of a Bounded P to check its *p* feature. On this scenario, we would incorrectly predict that Bounded Ps should always be incompatible with deictic elements. If *there* was assumed to occupy the specifier of DeixP, the Bounded P could move and check its features in *p*P, but we would end up with the wrong word order. Since *p*P is higher than Deix, we would predict that the Bounded P should precede the deictic element after moving to *p*P, clearly the wrong result:

- (21) *Lie next to there the closet.

Thus, as (20) shows, both types of locative Ps are compatible with deictic expressions when the Ground is overt. What makes (17b) ungrammatical is the presence of null Ground, regardless of the position of the deictic expression. However, the fact remains that when the preposition allows its Ground to be null, it must precede the deictic element, suggesting possibly a necessity for some kind of licensing movement targeting the position above DeixP.

Serbian replicates the English pattern in cases involving overt Grounds. As illustrated below, both Simple and ComplexPs are compatible with deictic expressions:

(22) SimplePs

- a. Nezadovoljni radnici su se okupili tamo pred skupštinom.
 dissatisfied workers AUX REFL gathered there in.front parliament
 ‘Dissatisfied workers gathered there in front of the parliament.’
- b. Mačka leži ovde pod stolom.
 cat lies here under table
 ‘The cat is lying there under the table.’

(23) ComplexPs

- a. Nezadovoljni radnici su se okupili tamo ispred skupštine.
 dissatisfied workers AUX REFL gathered there in.front parliament
 ‘Dissatisfied workers gathered there in front of the parliament.’
- b. Mačka leži ovde ispod stola.
 cat lies here under table
 ‘The cat is lying there under the table.’

As expected, when the Ground is null, only ComplexPs are licit. Recall that SimplePs disallow null Grounds (illustrated in (12)).

- (24) a. On je stajao tamo ispred.
 he AUX stood there in.front
- b. *On je stajao tamo pred.
 he AUX stood there in.front

However, in contrast to English, the deictic expression always precedes the preposition in Serbian.

- (25) a. Come inside here.
 b. ??Come here inside.
- (26) a. On je stajao tamo ispred.
 he AUX stood there in.front
- b. *On je stajao ispred tamo.
 he AUX stood in.front there

3.3. Measure phrases

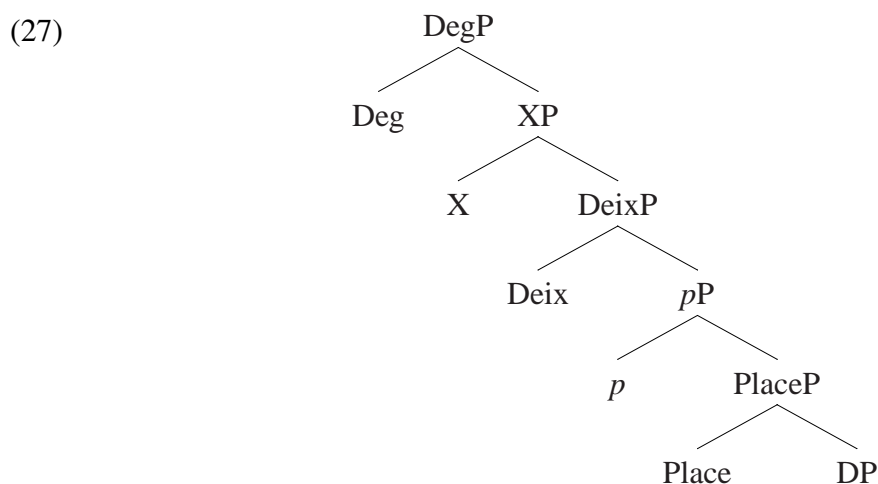
Adopting a vector space semantics for locative PPs (see Zwarts 1997; Zwarts & Winter 2000), Svenonius (to appear) argues that the Place head can be treated as a function from regions to vector spaces. Measure expressions restrict these vector spaces by picking out a subset of vectors of certain length. Svenonius (to appear) assumes that a special Degree head, μ introduces measure phrases in its specifier position. The reason why Bounded Ps, according to Svenonius (to appear) do not combine with measure phrases is that they do not denote vector spaces at the Place level and thus cannot combine with μ . Bounded Ps presuppose either a complex Ground (*among, between*), or a very short or zero distance (*beside, next to, against*).

This type of explanation seems to me difficult to extend to cases of Serbian Simple and ComplexPs, since these are, as already noted, nearly synonymous. In §5, I will therefore pursue an alternative approach to the incompatibility of measure phrases with certain types of Ps in both English and Serbian. I start off however by laying out my assumptions regarding the internal structure of prepositional phrases.

4. Background assumptions

4.1. The structure of locative PPs

Many studies focusing on adpositional phrases in recent years have argued for more or less fine-grained decomposition of PPs (Koopman 2000; den Dikken (to appear); Svenonius (to appear)). Following this line of research, and building in particular on the proposal put forth in Svenonius (to appear), I will assume that the syntactic structure of locative Ps is as illustrated below.



Svenonius (2003) proposes that the split-V hypothesis be extended to P. In analogy to the verbal domain where the external argument is introduced by a distinct head usually known as little *v* (Kratzer 1996). Svenonius (2003) assumes that there is a functional head *p* which introduces the Figure and takes PP as its complement. In his more recent work, Svenonius proposes a finer-grained decomposition of PPs and introduces a number of projections between *pP* and PP (see the tree in (18)). Thus, *pP* is argued to dominate both Deix and DegP. Recall that in Svenonius (to appear), the placement of *p* higher than Deg and Deix plays a crucial role in accounting for the distribution of null Grounds — Bounded Ps cannot license a null Ground by moving over Deix since they have to check their *p* feature by head-movement and *pP* is above Deix.⁸ Since the analysis to be proposed will not rely on the position of *pP* in the functional sequence, I will follow more closely the analogy with the verbal domain and assume that *pP* takes PlaceP as its complement, with Deg and Deix appearing higher up.

DeixP is the projection hosting deictic expressions, such as the spatial words *here* and *there* discussed in the previous section. (Svenonius (to appear); cf. den Dikken (to appear)). Sveno-

⁸It is less clear why *pP* should be above Deg.

nus (to appear) shows that at least in some languages which have distal and proximal morphemes, these are preceded by measure phrases, suggesting that Deix is below Deg:

- (28) Persian
- a. dær 10 metri-ye un birun-e xane.
 at 10 meters-EZ DIST outside-EZ house
 ‘there, 10 meters outside the house’
- b. *dær un 10 metri-ye birun-e xane
 at DIST 10 meters outside house

In Serbian, as well, the measure phrase precedes the deictic expression:⁹

- (29) 10 metara tamo ispred kuće
 10 meters there in.front house

Following Svenonius (to appear), I assume that null Grounds are licensed by movement to a position above Deix, which I label here simply as XP.¹⁰ Finally, on top of XP there is a DegP, hosting measure expressions (cf. Koopman 2000; den Dikken (to appear), Svenonius (to appear)).

4.2. The Spell-out procedure

A particular view of the relationship between abstract functional structure and the actual lexical items which instantiate it will play a crucial role in accounting for the patterns discussed in the previous sections. Following Halle & Marantz (1993), I assume that word-formation is syntactic in nature and that the phonological information is inserted into the structure after all syntactic operations have applied. I do not assume, however, that lexical items are inserted under a single terminal node. Rather, I will adopt the view that a single morpheme can lexicalize (or be associated with) a number of syntactic heads (see McCawley 1968; Starke 2005; Ramchand 2008; Caha 2007 and references cited therein). A particular morpheme can spell out a sequence of syntactic heads if these are adjacent to each other, i.e. a single morpheme can lexicalize one or more heads that select each other’s maximal projections (see Abels & Muriungi 2008). The Spell-out procedure is regulated by the Superset principle, which allows a lexical item to spell out a certain chunk of syntactic structure if the lexical entry of that item contains all or a *superset* of features present in the syntax (Starke 2005; Caha 2007).¹¹ This means that the spell-out procedure can ignore lexical features, but cannot ignore syntactic features, i.e., all syntactic

⁹The deictic expression can also precede the measure phrase, but in that case it is followed by a long pause.

¹⁰Svenonius (to appear) is not explicit about the landing site of the Groundless PlaceP, other than noting that it occupies a specifier below Deg but above Deix. If deictic expressions occupy the specifier of DeixP, then the Groundless PlaceP can either move to a higher Spec of DeixP (assuming multiple specifiers), or alternatively there must be another functional projection below Deg, i.e. the one I label here as XP, on Svenonius’s approach as well. Note also that on Svenonius’s analysis it is the entire PlaceP, hosting the Ground, which moves to the licensing position, while on the approach developed here, it is only the null Ground which undergoes movement.

¹¹For discussion of empirical and theoretical advantages of the Superset Principle over the Subset Principle employed in Distributed Morphology see Caha (2007).

features must be lexicalized.

With these assumptions in hand, I now turn to the analysis intended to capture the syntactic properties of different types of Ps in Serbian and English.

5. Analysis

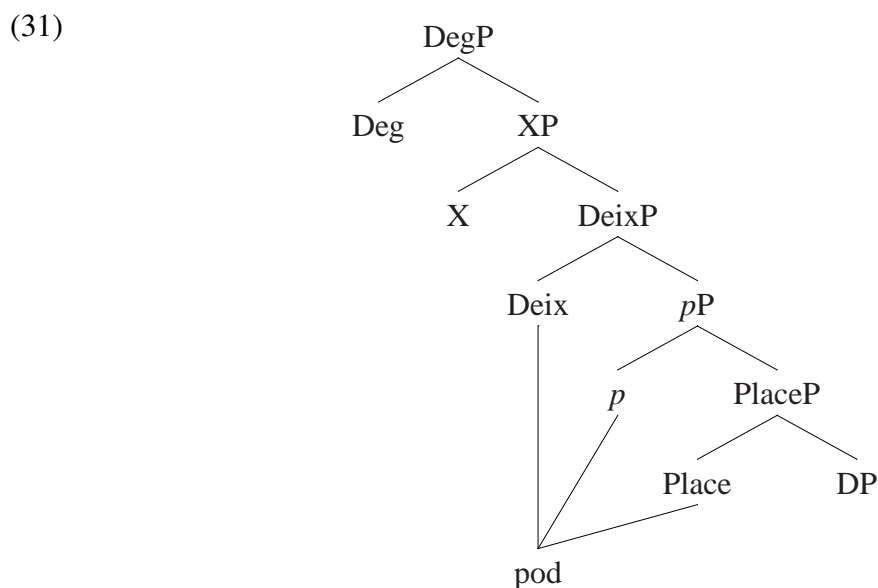
5.1. Simple vs ComplexPs in Serbian

We have seen in §2 that ComplexPs in Serbian occur freely with measure expressions and are able to license null Grounds. On the other hand, it was shown that SimplePs disallow both null Grounds and measure modification.

(30)

	SimplePs	ComplexPs
measure expressions	*	✓
null Ground	*	✓

In order to account for the observed pattern, let us assume that the lexical entry of SimplePs, such as *pod* ‘under,’ contains the features [Deix, *p*, Place]. According to the Superset Principle, this means that SimplePs can lexicalize maximally Deix, *p*, and Place, or a subset of these, but cannot lexicalize X and Deg. This is illustrated below.



With this assumption regarding the lexical specification of SimplePs in place, we can now account for the incompatibility of SimplePs with both null Grounds and measure expressions. The reason why SimplePs do not combine with measure phrases is that they cannot lexicalize the Deg head, which is responsible for introducing measures. If Deg is present in the structure, it must be ‘spelled-out,’ i.e., it must be identified by a lexical item. Adopting the Superset Principle, a SimpleP is not a possible candidate for spelling out Deg since the lexical specification

of SimplePs does not contain Deg.¹²

The same logic can be used to capture the distribution of null Grounds. Following Svenonius (to appear), I assume that null Grounds are licensed in the specifier position above DeixP, which I have labelled XP. SimplePs then do not occur with null Grounds because they cannot lexicalize X, the head in whose specifier null Grounds are licensed.¹³ What is more, we also know that XP must be higher in the functional sequence than at least DeixP. We've seen that SimplePs are compatible with deictic expressions, therefore they must be able to spell out Deix. If X was below Deix, a SimpleP would not be able to spell out the structure containing Deix since the lexical specification of a SimpleP would now be a subset of syntactic features present — a scenario prohibited by the Superset Principle. That the licensing position for null Grounds is above Deix is the conclusion reached by Svenonius (to appear) as well, on somewhat different grounds.

Turning now to ComplexPs, recall that these are morphologically related to SimplePs, being formed by attaching a morpheme *iz* to one of the SimplePs. Since we've already reached the conclusion that SimplePs spell out [Deix, p, Place], the morpheme *iz* must then be able to spell out (at least) [Deg, X].

¹²The question that arises is what happens to Deg and X when they are not spelled out by a SimpleP. For the sake of explicitness, I assume that they can be missing. The issue is however too complex to be given a proper treatment here (see Starke 2004 for relevant discussion). Alternatively, we could assume that Deg and X are always present, but can have [+/-] values. Only marked values of Deg and X can license modifiers and null Grounds. This would mean that SimplePs can lexicalize Deg and X on the condition that they have unmarked values.

¹³A reviewer points out that the reason why SimplePs cannot take null complements could be because they are proclitics. Evidence that prepositions in Serbian are proclitics comes solely from the location of accent, i.e. the observation that a tone can spread onto a preceding preposition. Note however that tone spread happens both with Simple and ComplexPs. Nevertheless, let us for a moment entertain the idea that the examples with SimplePs taking a null complement are ungrammatical not because the movement licensing null complements is unavailable, but because SimplePs lack an appropriate host to which they could attach. In this respect, consider first (32), an example of Right Node Raising, which does not give rise to ungrammaticality:

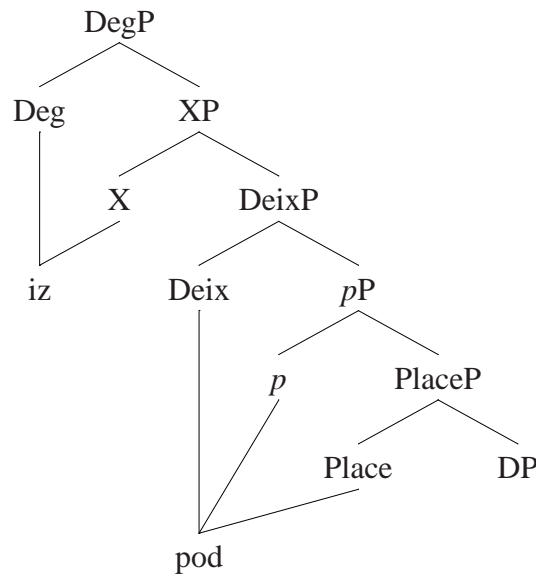
- (32) *nad i pod zemljom*
 above and below ground

If the prosodic requirements of the preposition *nad* 'above' are somehow satisfied in (32), the question arises of how to account for the following contrast in prosodic terms, i.e. why the participle in (33b) is not an appropriate host for the preposition:

- (33) a. *ispod (stola) ostavljene cipele*
 under table left shoes
 b. *pod *(stolom) ostavljene cipele*
 under table left shoes
 'the shoes left under the table'

I therefore conclude that the possibility of SimplePs to license null Grounds cannot be reduced to their status as proclitics. The reason why (33b) is ungrammatical under the approach developed here is due to the unavailability of the movement licensing null complements. I also assume that Right Node Raising does not involve movement (see Abels 2003 and references cited there).

(34)



This assumption about the lexical entry of the morpheme *iz* allows us to capture the observation that by adding *iz* to one of the SimplePs, the use of measure phrases and null Grounds becomes possible. While a SimpleP such as *pod* cannot spell out Deg, Deg can be spelled out by *iz*, thus making the site for insertion of measure phrases available. Anaphoric identification of Grounds becomes possible as well, since *iz* can spell out X, which is by assumption the position where null Grounds are licensed. Deictic expressions are expected to be compatible with ComplexPs as well, since Deix is always spelled-out by *pod*.¹⁴ In the following subsection, I will adopt the same kind of approach to account for the parallel facts in English.

5.2. Bounded vs Projective Ps in English

In §4, we have seen that two types of locative prepositions in English discussed in Svenonius (to appear) exhibit the same pattern as the one found in Serbian. One class of prepositions, which Svenonius (to appear) labels as Bounded Ps, disallows measure phrases and null Grounds, while so called Projective heads are compatible with both.

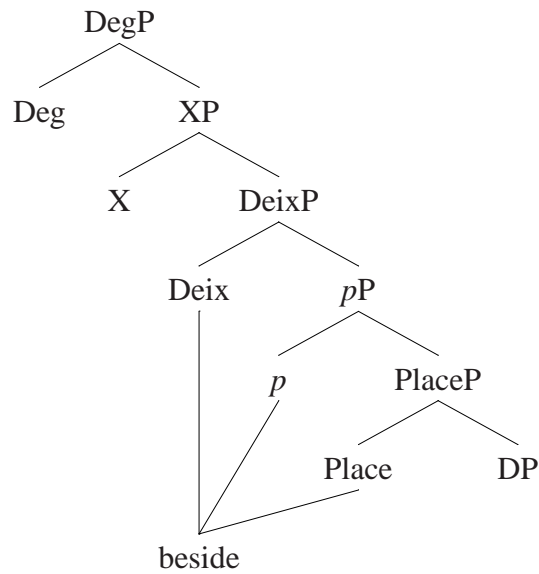
(35)

	Bounded Ps	Projective Ps
measure expressions	*	✓
null Ground	*	✓

The explanation provided for Serbian facts can be easily extended to English data. I assume that Bounded Ps (such as *next to*, *beside* etc.) are like Serbian SimplePs in that their lexical entry is specified for the features [Deix, *p*, Place].

¹⁴An alternative, suggested by the reviewer, would be to list each ComplexP separately in the lexicon, together with the feature specification [Deg, X, Deix, *p*, Place], rather than parsing them into two separate morphemes. This type of approach, however, would fail to capture the observation that Simple and ComplexPs are morphologically related and that it is always the addition of the morpheme *iz* which is responsible for availability of null Grounds and measure phrases.

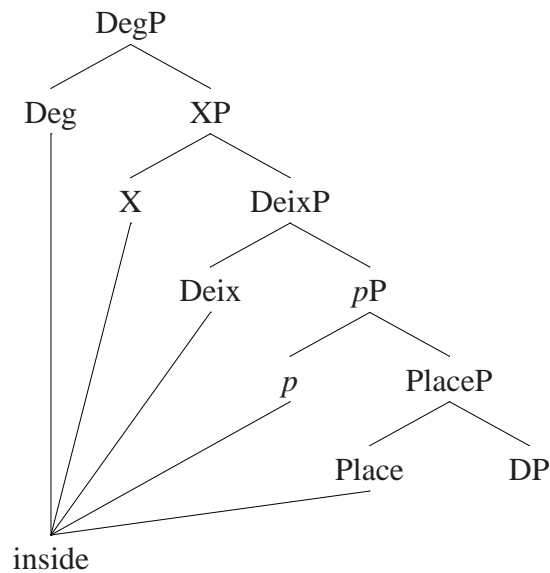
(36)



Since Bounded Ps are not able to spell out Deg, measure phrases are illicit. Null Grounds cannot be licensed either since there is nothing to lexicalize X. Anaphoric identification of the Ground is therefore impossible with Bounded Ps.

Place heads (such as *inside*, *above* etc.), on the other hand, can lexicalize the entire functional sequence, as shown below:

(37)



Since Place heads can lexicalize Deg and X, they are correctly predicted to be able to occur with both measure expressions and null Grounds.

Note that according to the approach pursued here, it is the lexical entries of Projective Ps such as *inside* that contain more features than lexical entries of Bounded Ps. This is exactly the opposite of what is assumed by Svenonius (to appear), where Bounded Ps were specified for an additional *p* feature.

The proposed analysis thus enables us to give a unified account of Serbian and English facts by deriving the differences in the syntactic behaviour of various types of prepositions from their lexical specifications. Different types of locative Ps thus vary with respect to how much functional structure they are able to spell out, which in turn has consequences for their syntactic behaviour.

5.3. *Some speculations regarding the XP projection*

So far I have been assuming that null Grounds are licensed in a projection above DeixP, labelled XP. The question that emerges is what the nature of this functional layer is. In particular, is it possible to do away with this projection, the sole purpose of which is to provide a licensing position for null Grounds?

It is immediately obvious that DeixP and XP cannot be reduced to a single projection. If we were to do so, we would be unable to rule out null Grounds with either SimplePs in Serbian or Bounded Ps in English. As we have seen, both SimplePs and Bounded Ps can occur with deictic expressions and thus are clearly able to spell out Deix. If DeixP were at the same time the position where null Grounds could be licensed, we would predict that these should be licit with SimplePs and Bounded Ps. This is clearly the wrong result.

The other possibility would be to collapse DegP and XP into a single projection. If we thus eliminated XP, the specifier of DegP could be targeted by movement of the null Ground, while measure phrases could be adjoined to DegP.¹⁵ This would have the welcome consequence of correlating the possibility of having null Grounds with the possibility of measure modification. We have seen that in both English and Serbian whenever measure modification is impossible, null Grounds are also illicit. The question is why these two properties pattern together. By linking both properties to a single projection, let's say DegP, we predict that a preposition which is not able to lexicalize Deg would be incompatible with both measure phrases and null Grounds. The Serbian and English facts discussed so far suggest that this kind of approach could be on the right track. However, if the connection between measure expressions and anaphoric identification of Ground proves not to be as tight when facts from other languages are taken into account, this would suggest that we might nevertheless want to keep these two projections apart. Pending further research, I leave this issue unresolved for now.¹⁶

¹⁵See den Dikken (to appear) for similar suggestions regarding his Dx[space]P, which corresponds to Koopman's (2000) DegP. In den Dikken's analysis, Dx[space]P is the counterpart of the Dx[tense]P (a.k.a. TP) in the clausal domain. The specifier of Dx[space]P can be filled by movement of the complement of P, just like SpecTP is filled by movement of an argument of the verb. There is furthermore no special relationship between this projection and the insertion site of measure phrases. Nevertheless, measure phrases can adjoin to Dx[space]P, in the way that adverbials are commonly assumed to adjoin to TP. A significant difference between den Dikken's Dx[space]P and my DegP however is that Dx[space]P is assumed to host deictic expressions as well.

¹⁶As already noted, Croatian seems to be freer in the use of measure phrases than Serbian. A quick Google search reveals that combinations of measure expressions with SimplePs can be occasionally found predominantly on Croatian sites (though the number of hits is still significantly smaller than for ComplexPs). This might suggest that SimplePs are able to lexicalize Deg, but not X, at least for some Croatian speakers (and possibly even some Serbian speakers for whom the contrast is less strong). Note also that the cases discussed so far offered us no clue as to what the relative ordering between Deg and X might be. The behaviour of SimplePs in Croatian then might be taken as an indication that X in fact dominates Deg.

5.4. Directional uses of ComplexPs

In §1, it has already been noted that the morpheme *iz* which occurs in ComplexPs is homophonous with the source preposition *iz*, meaning ‘from, out of’. Nevertheless, we have seen that PPs headed by ComplexPs not only lack the source directional interpretation, but generally behave like locative expressions. That ComplexPs are locative PPs is further supported by the fact that they receive only locative interpretation when combined with imperfective verbs.

- (38) a. David je trčao iza kuće.
 David AUX run^I behind house
 ‘David was running behind the house.’
 b. Beba je puzala ispod stola.
 baby AUX crawled^I under table
 ‘The baby was crawling under the table.’

ComplexPs can however get a directional interpretation when they are used with perfective verbs. Interestingly, even then the most natural interpretation is a goal rather than source directional one.

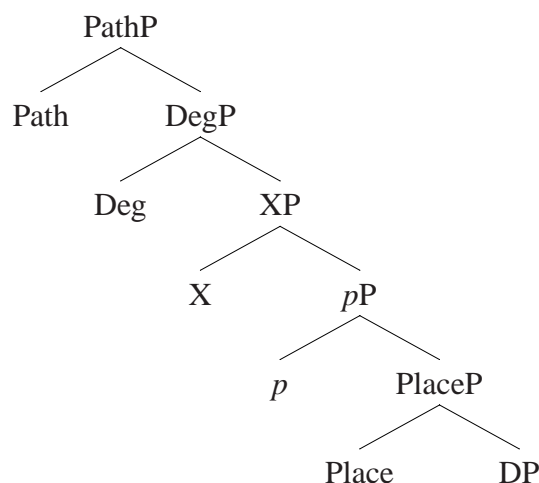
- (39) a. David je otrčao iza kuće.
 David AUX run^P behind house
 ‘David ran to behind the house.’
 b. Beba je otpuzala ispod stola.
 baby AUX crawled^P under table
 ‘The baby crawled to under the table.’

How can we account for directional uses of ComplexPs? In particular, can the lexical entry of the morpheme *iz* be refined in such a way as to capture not only the possibility of directional interpretation in cases like (39), but also the fact that *iz* can function as a source preposition when occurring on its own?

One way to address this issue under the current approach would be to assume that the lexical entry of the morpheme *iz* carries additional features which give rise to a directional interpretation. It is often argued that directional PPs contain a category labelled *Path*.¹⁷ In the functional sequence, *Path* dominates the projection(s) of *Place*.

¹⁷*Path* and *Place* is the terminology used by Jackendoff (1983), Koopman (2000), Svenonius (to appear) etc. Some others use *dir[ectional]* and *loc[ative]* instead (see van Riemsdijk and Huybregts 2002, den Dikken (to appear)).

(40)



If there is a single lexical entry for *iz*, then the lexical specification of *iz* should include the category *Path*. As a result, *iz* would be able to lexicalize the Path head and thus give rise to a directional interpretation. We would then predict that a directional reading should always be possible, not only with the source preposition *iz*, but also with ComplexPs.¹⁸ That this is however not the case is clear from examples in (38), i.e. a directional interpretation of PPs headed by ComplexPs is not available with imperfective verbs. Consider also the following contrast:

- (41) a. *Lopta se kotrljala iz kuhinje u kupatilo.*
 ball REFL rolled^I from kitchen into bathroom
 ‘The ball rolled from the kitchen into the bathroom.’
- b. **Lopta se kotrljala ispod stola u kupatilo.*
 ball REFL rolled^I under table into bathroom
 Intended: The ball rolled from under the table into the bathroom

Although having a single lexical entry for the morpheme *iz* covering all of its uses would certainly be desirable, the unavailability of a directional reading in cases like (38) and (41b) forces us to conclude that the source preposition *iz* and the morpheme *iz* in ComplexPs cannot share the same lexical entry.

A welcome consequence of assuming separate entries is that it allows us to account for the contrast between (38) and (39), i.e. the fact that aspectual properties of the verb have an effect on the availability of directional interpretation. If ComplexPs cannot lexicalize the Path head, examples in (38) are correctly predicted to allow only locative interpretation. In order for a directional interpretation to arise, the Path head has to be lexicalized. Note that perfective verbs in Serbian (and Slavic more generally) are formed by attaching a prefix to an imperfective base.¹⁹

¹⁸Note that a directional interpretation would not be necessary since the Superset principle allows the lexical features to be ignored.

¹⁹A reviewer asks whether it is a general property of locative prepositions in Serbian to receive directional interpretation only when used with perfective verbs. Most prepositions in Serbian that can be used both in locative

- (43) a. Beba je puzala ispod stola.
 baby AUX crawled^I under table
 ‘The baby was crawling under the table.’
 b. Beba je OD-puzala ispod stola.
 baby AUX away-crawled^P under table
 ‘The baby crawled to under the table.’

What I would like to argue is that the Path head can be lexicalized by prefixes. As a result, a directional reading of ComplexPs becomes possible with perfective verbs.²⁰ Assuming thus that the morpheme *iz*, unlike the source preposition *iz*, cannot lexicalize the Path head opens up a way of capturing the effect that the choice of a particular aspectual pair has on the availability of directional reading with ComplexPs.

6. Conclusions

This article has focused on two types of nearly synonymous locative Ps in Serbian. The two types differ morphologically in that ComplexPs are bimorphemic, consisting of a morpheme *iz* attached to one of the SimplePs. It was shown that the two types differ syntactically as well. ComplexPs such as *ispod* allow measure modification and null Grounds while SimplePs, such as *pod*, do not. I have argued that these properties might be accounted for by assuming a fine-grained syntactic decomposition of Place expressions in combination with a particular view regarding the spell-out of syntactic structure. The differences between these two classes were argued to stem from the amount of functional structure each type of preposition is able to spell out. SimplePs are thus assumed to be able to lexicalize only a subset of categories lexicalized by ComplexPs, and as a result display more restrictions in their syntactic behaviour.

It was further argued that the same logic can be pursued to account for the differences between what Svenonius (to appear) has labelled Projective and Bounded Ps in English. Though these two types in English are not morphologically related, they pattern like Serbian Ps with respect to measure modification and anaphoric identification of Grounds. I have argued that the differences between these two classes can be captured by assuming that Projective Ps such

and directional contexts are case-alternating prepositions. Thus, with SimplePs, for instance, it is not sufficient to change the aspectual value of the verb in order to obtain a directional interpretation (see (42a)), rather the case of the DP-complement to P has to change from instrumental to accusative (see (42b)).

- (42) a. *Beba je otpuzala pod stola.
 baby AUX away-crawled^P under table.INSTR
 b. Beba je otpuzala pod stol.
 baby AUX away-crawled^P under table.ACC
 ‘The baby crawled to under the table.’

In this paper, I won’t discuss the interaction between case assignment and the interpretation of a PP. Note that the complement of ComplexPs always surfaces in genitive case. What is interesting about ComplexPs is that unlike with other prepositions in the language and despite the fact that they seem to incorporate a source preposition, the availability of directional interpretation in this case depends solely on the aspectual properties of the verb.

²⁰That lexical prefixes merge as Path heads has been argued on independent grounds by Romanova (2007).

as *inside* can spell out a superset of categories lexicalized by Bounded Ps. Thus, the proposed analysis shows how the properties of various types of prepositions in both English and Serbian can be made to fall out from the lexical specification of the particular vocabulary items found in the lexical inventory of each language. This has a welcome consequence of reducing the intra- and interlanguage variation to properties of lexical items, i.e., to that component of grammar for which there is independently strong evidence of learning (Borer 1984).

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Monika Bašić

Centre for Advanced Study in Theoretical Linguistics (CASTL), University of Tromsø
monika.basic@hum.uit.no

References

- Abels, K. (2003). *Successive cyclicity, anti-locality, and adposition stranding*. Ph.D. thesis, University of Connecticut, Storrs.
- Abels, K. & P. K. Muriungi (2008). The focus particle in Kîtharaka: Syntax and semantics. *Lingua* 118, pp. 687–731.
- Arylova, A., E. Romanova, Žanna Glušan & E. Markovskaja (2005). Distribution of directional and locative prepositions in Russian. A presentation made within the project Moving Right Along, available at <http://www.hum.uit.no/a/svenonius/MRA/index.html>, University of Tromsø.
- Borer, H. (1984). *Parametric Syntax*. Foris, Dordrecht.
- Caha, P. (2007). The shape of paradigms. Talk at GLOW XXX. Ms., University of Tromsø.
- den Dikken, M. (to appear). On the functional structure of locative and directional PPs. Cinque, G. & L. Rizzi (eds.), *The Cartography of Syntactic Structure, vol. 6*, Oxford University Press, New York.
- Halle, M. & A. Marantz (1993). Distributed Morphology and the pieces of inflection. Hale, K. & S. J. Keyser (eds.), *The View from Building 20: Essays in Linguistics in Honor of Sylvain Bromberger*, MIT Press, Cambridge, Ma., pp. 111–176.
- Jackendoff, R. (1983). *Semantics and Cognition*. MIT Press, Cambridge, Ma.
- Kayne, R. S. (2004). Here and there. Leclère, C., Éric Laporte, M. Piot & M. Silberztein (eds.), *Lexique Syntaxe, et Lexique-Grammaire/Syntax, Lexis, Lexicon-Grammar: Papers in Honor of Maurice Gross*, John Benjamins, Amsterdam, pp. 253–275.
- Koopman, H. (2000). Prepositions, postpositions, circumpositions, and particles. Koopman, H. (ed.), *The Syntax of Specifiers and Heads*, Routledge, London, pp. 204–260.
- Kratzer, A. (1996). Severing the external argument from the verb. Rooryck, J. & L. Zaring (eds.), *Phrase Structure and the Lexicon*, Kluwer, Dordrecht, pp. 109–137.
- McCawley, J. D. (1968). Lexical insertion in a grammar without deep structure. Darden, B. J., C.-J. N. Bailey & A. Davidson (eds.), *Papers from the fourth regional meeting of the Chicago Linguistic Society*, University of Chicago, Chicago, pp. 71–80.
- Ramchand, G. (2008). *Verb Meaning and the Lexicon: A First Phase Syntax*. Cambridge University Press.
- Romanova, E. (2007). *Constructing Perfectivity in Russian*. Ph.D. thesis, University of Tromsø.
- Starke, M. (2004). On the inexistence of specifiers and the nature of heads. Belletti, A. (ed.), *Structures and Beyond: The Cartography of Syntactic Structures, vol. 3*, Oxford University Press, New York, pp. 252–268.

- Starke, M. (2005). Nanosyntax class lectures. Spring 2005, University of Tromsø.
- Svenonius, P. (2003). Limits on P: *filling in holes* vs. *falling in holes*. Dahl, A., K. Bentzen & P. Svenonius (eds.), *Tromsø Working Papers on Language and Linguistics: Nordlyd 31.2, Proceedings of the 19th Scandinavian Conference of Linguistics*, University of Tromsø, Tromsø, pp. 431–445. Available at www.ub.uit.no/baser/nordlyd/.
- Svenonius, P. (to appear). Spatial P in English. Cinque, G. & L. Rizzi (eds.), *The Cartography of Syntactic Structure, vol. 6*, Oxford University Press, Oxford. Available at <http://ling.auf.net/lingBuzz/000001>.
- Zwarts, J. (1997). Vectors as relative positions: A compositional semantics of modified PPs. *Journal of Semantics* 14, pp. 57–86.
- Zwarts, J. & Y. Winter (2000). Vector space semantics: A model-theoretic analysis of locative prepositions. *Journal of Logic, Language, and Information* 9, pp. 169–211.