Serbian Ps with and without *iz* and the Superset Principle

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Abstract

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.

SimplePs	ComplexPs	
nad	*iznad*	over, above
pod	*ispod*	under
pred	*ispred*	in front of
za	*iza*	behind

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

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[1]The labels have been chosen in order to avoid any theoretical implications, but are however not intended to suggest that there are no other morphologically simple or complex prepositions in the language.

$iz + nad \rightarrow iznad$
$iz + pod \rightarrow ispod$
$iz + pred \rightarrow ispred$
$iz + za \rightarrow iza$[2]

When it occurs on its own, the morpheme *iz* functions as a source preposition, meaning 'from, out of':[3]

(1) David je istrčao iz kuće.
     David AUX *run* *out.of house*
     'David ran out of the house'

Interestingly, however, when *iz* is combined with one of the SimplePs, the resulting complex preposition does not have a source interpretation.[4] In fact, both Simple and ComplexPs can be used in the same context, with no significant difference in meaning.[5]

(2) 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. On je helikopterom leteo nad gradom/iznad grada.
         he AUX *helicopter   flown over town/over   town*
         'He was flying over the town in a helicopter'

The discussion to follow will focus on syntactic properties of Simple and ComplexPs. It will be shown that the two classes 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. I start off by establishing that ComplexPs are locative prepositions in Serbian. In §3, I identify and illustrate the differences between these two classes, building on Svenonius (to appear). In §4, I turn to a similar pattern in English and an attempt to

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[2]Note 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.

[3]Abbreviations are as follows: AUX - auxiliary, DIST - distal morpheme, EZ - ezafe linker, ^{I} - imperfective, ^{P} - perfective, REFL - reflexive.

[4]This is in contrast to 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.'

[5]In 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 focus almost exclusively on locative uses of these prepositions.

account for it presented in Svenonius (to appear). I spell out my background assumptions in §5 before moving on to the proposed analysis of the observed patterns in §6. Section 7 concludes the paper.

2. ComplexPs as Place expressions

In the adpositional domain, a basic distinction can be made between so-called Place and Path elements. Place elements 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). Path elements give information about the trajectory, specifying for instance whether motion originates in a Place (Source), or ends in a Place (Goal).

I take both Simple and ComplexPs to be Place expressions. That ComplexPs are Place expressions might require some justification, though. Recall that ComplexPs contain the morpheme *iz* which is homophonous with the source preposition *iz* 'from, out of.'

(3) David je istrčao iz   kuće.
     David AUX *run*   *out.of house*
     'David ran out of the house'

Since source prepositions are Path elements and ComplexPs contain a morpheme that independently behaves as a source preposition, it is not immediately obvious that ComplexPs should be treated as Place, rather than Path expressions. Nevertheless, several diagnostics can be employed to show that ComplexPs behave as Place elements. First of all, Svenonius (to appear) points out that members of the category Place can appear in the complement position of stative verbs, and can be used as locative adjuncts to verb phrases which imply no motion. Examples below show that on the basis of these tests, ComplexPs do behave as Place expressions. In (4a) the stative verb *nalaziti se* 'be located' takes a prepositional phrase headed by a ComplexP as its complement, while in (4b) the PP acts as a locative adjunct.

(4) a. Banka se   nalazila ispred   hotela.
         bank   REFL *located   in.front hotel*
         'The bank was located in front of the hotel'
     b. 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 Path element) gives rise to ungrammaticality, showing that *iz*, when it occurs on its own, behaves as a Path expression.

(5)   a. *Banka se   nalazila iz   hotela.
              bank   REFL *located from hotel*

        b. *David je   pretučen iz   škole.
              David AUX *beaten   from school*

Furthermore, when used with imperfective verbs, the only interpretation possible with ComplexPs is locative.

(6)   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'

The examples in (6) cannot get a directional reading. If ComplexPs were Path expressions, this would be a surprising result since Path elements can license directional readings even with imperfective verbs:

(7)   a. On je   leteo   iz   Beograda.
              he AUX $flown^I$ *from Belgrade*
              'He was flying from Belgrade'

        b. On je   trčao ka   kući.
              he AUX run^I *towards house*
              'He was running towards the house'

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

(8)   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'

Having established that ComplexPs behave as Place expressions, several questions emerge that will be addressed in the following sections. First of all, considering that both Simple and ComplexPs are Place elements sharing basically the same meaning, are there any syntactic differences between these two classes? Secondly, what is the role of the morpheme *iz* in ComplexPs?

3. Contrasting Simple and ComplexPs

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:[6]

(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
             a.few centimeters under knee   *had* AUX *huge*
            modricu.
            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'

Furthermore, ComplexPs allow the 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
            at end   street AUX *our house and in.front house* AUX
            parkiran naš novi auto.
            parked   our new car
            'Our house is at the end of the street, and our new car is parked in front'

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[6]Some 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 §6.

    b. Sedeli smo i   posmatrali plažu. Iznad (plaže) je   kružilo
         sat   AUX *and watched*   *beach* *above* *beach* AUX *circled*
         jato galebova.
         flock seagulls
         'We were sitting and watching the beach. A flock of seagulls
         was circling above the beach'

    c. Na vrhu brda je   stajalo orahovo drvo, a   ispod (njega)
         on top hill AUX *stood chestnut tree and under it*
         je   bilo zakopano blago.
         AUX *been buried   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
         at end   street AUX *our house and in.front   house*   AUX
         parkiran naš novi auto.
         parked   our new car
         'Our house is at the end of the street, and our new car is parked
         in front'

    b. Sedeli smo i   posmatrali plažu. Nad   *(plažom) je
         sat   AUX *and observed   beach above   beach*   AUX
         kružilo jato galebova.
         circled flock seagulls
         'We were sitting and watching the beach. A flock of seagulls
         was circling above the beach'

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

We have seen thus that the two properties which distinguish SimplePs and ComplexPs are the possibility of omitting the Ground and the possibility of measure modification. The distribution of measure phrases and null Grounds is summarized in the table below.

	SimplePs	ComplexPs
measure expressions	*	✓
null Ground	*	✓

    I will return to this pattern in §6, 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 formulation of the interface spell-out condition. Before doing so, I turn to the proposal put forth in Svenonius (to appear), intended to capture similar facts in English.

4. Two types of locative Ps in English

4.1. Projective vs Bounded Ps

The investigation of the syntactic behaviour of Serbian prepositions presented here has been inspired by observations made in Svenonius (to appear), where a similar pattern in English is discussed. 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.

(13)   Projective Ps (in front of, inside, above etc.)

    a.   We remained sixty feet in front of the palace.

    b.   I saw a line of soldiers. The one in front (of it) was talking on the phone.

(14)   Bounded Ps (next to, beside, against etc.)

    a.   *They opened the door one meter next to the stage.

    b.   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.

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

4.2. 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.

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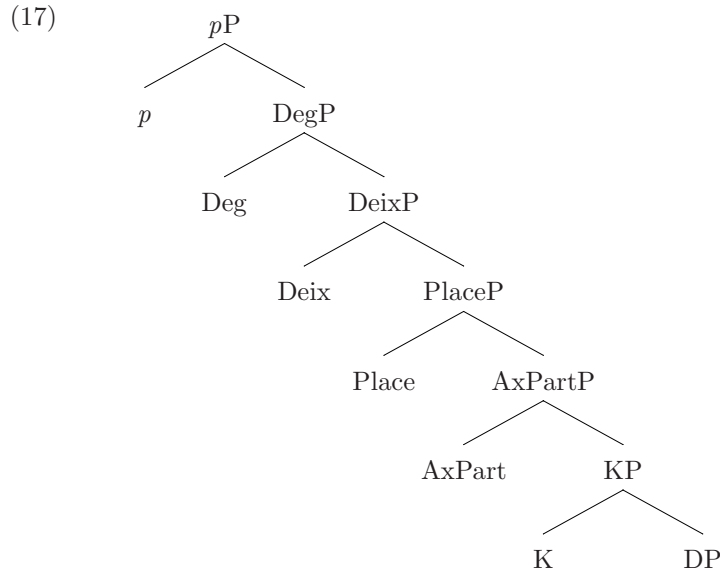   b.   *Get next to there. (Bounded P)

Svenonius (to appear) (following Kayne 2004) notes that *there* is not interpreted as the Ground in (15) — *inside there* means 'there, inside something,' rather than 'inside that place.' Thus, Svenonius 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.[7] When the Ground is null, the PlaceP undergoes phrasal movement to a position left of the deictic element. This movement somehow licenses the null Ground and is obligatory, as evidenced by the impossibility of having deictic expressions precede the preposition. When the deictic element occurs to the left of the preposition, the Ground must be overt:

(16)   a.   Come here inside the closet.
        b. ??Come here inside.

The two seemingly independent facts, appearing with a null Ground and preceding a deictic element, are thus 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 (15b), 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. In the syntactic decomposition of locative Ps argued for in Svenonius (to appear) and given in (17), pP tops off the functional sequence and serves the function of introducing the Figure.[8]

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[7]Given that I will follow Svenonius (to appear) in assuming that there are several functional heads above PlaceP, the use of the label 'Place' in the general discussion in §2 will correspond to the extended projection, not necessarily to PlaceP.

[8]K is a function from a DP object to the space occupied by it. It is manifested by case markers in many languages. An AxPart (such as *front* in complex expressions like *in front of*) is a function from the space occupied by the Ground to subparts of it (see Svenonius (to appear) for more detail). For the sake of simplicity, I will ignore these projections as they are not relevant for my current concerns.

(17)

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                        pP
                      /    \
                     p     DegP
                          /    \
                        Deg    DeixP
                              /    \
                            Deix   PlaceP
                                  /    \
                               Place   AxPartP
                                       /    \
                                   AxPart    KP
                                            /  \
                                           K    DP
```

Recall now that the movement of PlaceP to a specifier above Deix licenses the null Ground and at the same time places the preposition to the left of the deictic expression. This phrasal movement cannot take place when the PlaceP is headed by a Bounded P because Bounded Ps must head-move to p for feature checking purposes. As a result, Bounded Ps are incompatible with null Grounds and cannot precede deictic expressions. 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 thus the ungrammatical (15b).

If the PlaceP headed by a Bounded P were to first move to a projection below pP, then the p feature of Bounded Ps could not be checked, assuming that a head cannot move out of a specifier. Thus the categorial hierarchy given in (17) 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.

(18)   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

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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 pP, but we would end up with the wrong word order. Since pP is higher than Deix, we would predict that the Bounded P should precede the deictic element after moving to pP, clearly the wrong result:

(19)   *Lie next to there the closet.

Thus, as (18) shows, both types of locative Ps are compatible with deictic expressions when the Ground is overt. What makes (15b) 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, as suggested by Svenonius (to appear).

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

(20)   SimplePs
        a. Nezadovoljni radnici su   se   okupili tamo pred
            dissatisfied   workers AUX REFL *gathered there in.front*
            skupštinom.
            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'

(21)   ComplexPs
        a. Nezadovoljni radnici su   se   okupili tamo ispred
            dissatisfied   workers AUX REFL *gathered there in.front*
            skupštine.
            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)).

(22)   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.

(23) a. Come inside here.
      b. ??Come here inside.

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

      b. *On je   stajao ispred tamo.
          he AUX *stood   in.front there*

4.3. Measure phrases

Turning to measure phrases, Svenonius (to appear) assumes that these are introduced by a special Degree head, μ (following Svenonius and Kennedy 2006 on Meas in APs). Measure expressions restrict vector spaces by picking out a subset of vectors of certain length. 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*).[9]
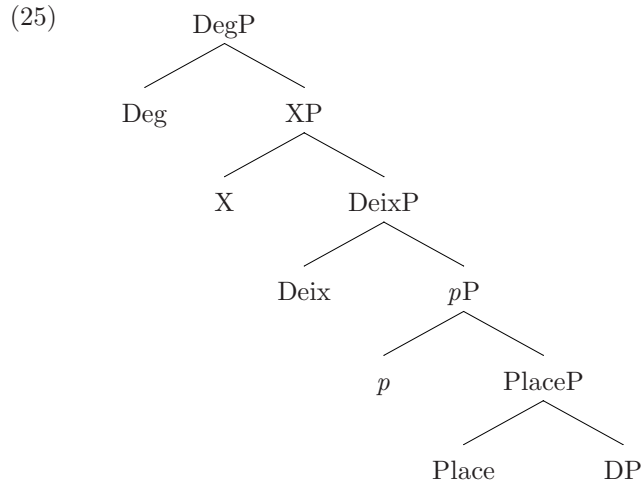
This type of explanation seems to me difficult to extend to cases of Serbian Simple and ComplexPs, since these are, as already noted, nearly synonymous. Considering therefore that a semantic explanation seem implausible, I will offer an alternative account of this incompatibility in section 6. I start off however by laying out my assumptions regarding the internal structure of prepositions.

5. Background assumptions

5.1. 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.

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[9]It is not entirely clear to me why on Svenonius's assumptions the impossibility of measure phrases should correlate with impossibility of licensing null Grounds.

(25)

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                    DegP
                   /    \
                 Deg     XP
                        /  \
                       X    DeixP
                            /    \
                         Deix     pP
                                 /  \
                                p    PlaceP
                                     /    \
                                  Place    DP
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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 (17)). 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.[10] 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)). Svenonius (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:

(26)   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*

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[10]It is less clear why pP should be above Deg.

In Serbian, as well, the measure phrase precedes the deictic expression:[11]

(27)   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.[12,13] Finally, on top of XP there is a DegP, hosting measure expressions (cf. Koopman 2000, den Dikken (to appear), Svenonius (to appear)).

5.2. The Superset principle

The second ingredient of the analysis to follow is the Superset principle (Starke 2005, Caha 2007). The Superset principle is the interface spell-out condition which allows a Vocabulary item to spell out a certain chunk of the syntactic tree if the lexical entry of that item contains all or a *superset* of the nodes/features present in the syntax.[14] This means that the spell-out procedure can ignore lexical features, but cannot ignore syntactic features, i.e., all syntactic features must be spelled-out. Note that the Superset principle enables Vocabulary items to target a non-terminal node.[15] Thus several syntactic heads can be targeted and spelled out by a single morpheme.[16]

    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.

6. Analysis

6.1. Simple vs ComplexPs in Serbian

We have seen in §3 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.

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

[12]The nature of this projection is further discussed in §6.

[13]Note that I assume that what undergoes movement to SpecXP is only the null DP-Ground, which is in need of licensing. This is in contrast to Svenonius (to appear) where what moves to the licensing positions is the entire PlaceP, hosting the Ground.

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

[15]Spell-out of non-terminals has been proposed in the literature by a number of people. See McCawley (1968), Caha (2007) and references therein. In the theory of Distributed Morphology, several tools are used to mimic the empirical effects of the spell-out of non-terminals. For detailed discussion, I refer the reader to Caha (2007).

[16]For similar ideas see Ramchand (in press) where a single lexical item is associated with multiple syntactic heads. See also Fábregas (this volume).

	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.

(28)
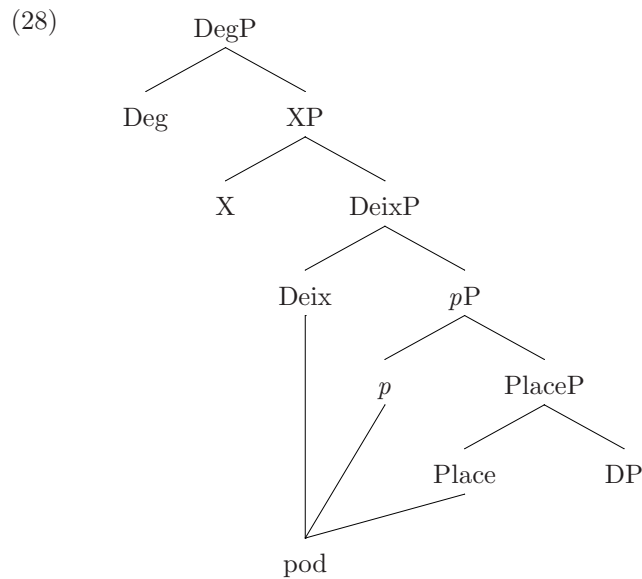
With this assumption regarding the lexical specification of SimplePs in place, we can now account for the incompatibility of SimplePs with both null Grounds and measure expressions. The reason why SimplePs do not combine with measure phrases is that they cannot lexicalize the Deg head, which is responsible for introducing measures. If Deg is present in the structure, it must be 'spelled-out,' i.e., realized by a phonological exponent. 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.[17]

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[17]The 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

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. 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].

(29)
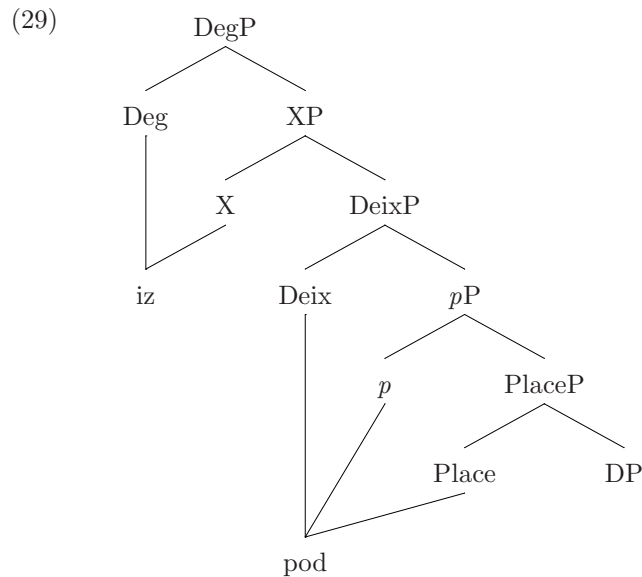
This assumption about the lexical entry of the morpheme *iz* allows us to capture the observation that by adding *iz* to one of the SimplePs, the use of measure phrases and null Grounds becomes possible. While a SimpleP such as *pod* cannot spell out Deg, Deg can be spelled out by *iz*, thus making the site for insertion of measure phrases available. Anaphoric identification of Grounds becomes possible as well, since *iz* can spell out X, which is by

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that they have unmarked values.

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*.

In the following subsection, I will adopt the same kind of approach to account for the parallel facts in English.

6.2. 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.

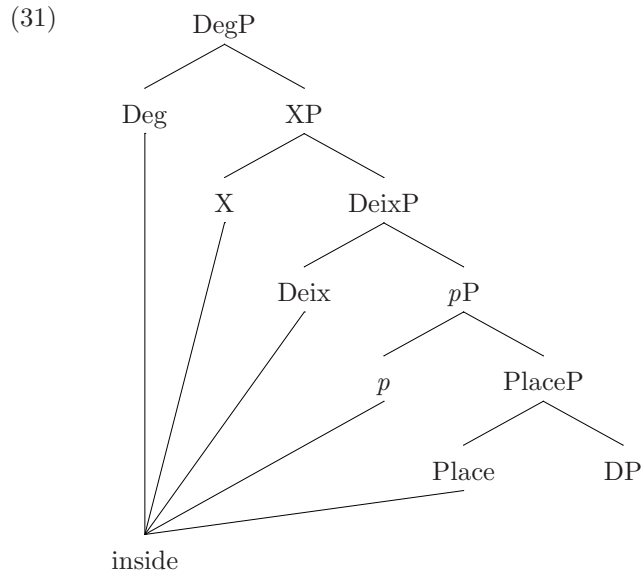|	Bounded Ps	Projective Ps
measure expressions	*	✓
null Ground	*	✓

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].

(30)
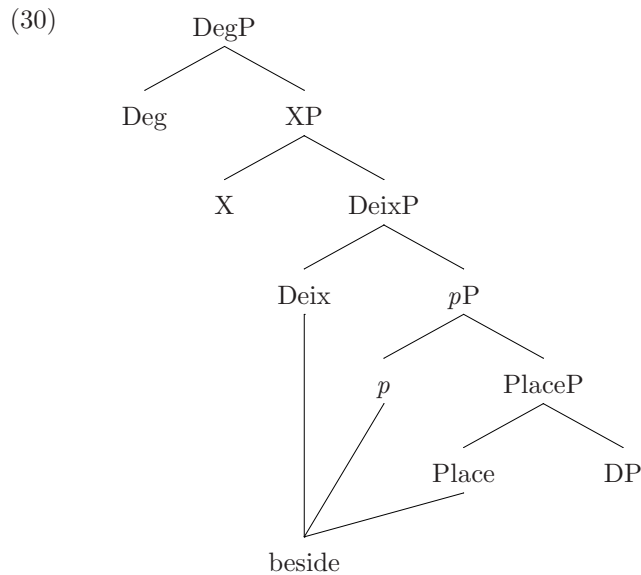
Since Bounded Ps are not able to spell out Deg, measure phrases are illicit. Null Grounds cannot be licensed either since there is nothing to lexicalize X. Anaphoric identification of the Ground is therefore impossible with

Bounded Ps.

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

(31)

```
                DegP
              /      \
           Deg       XP
            |       /    \
            |      X     DeixP
            |      |    /     \
            |      |  Deix    pP
            |      |   |     /   \
            |      |   |    p   PlaceP
            |      |   |    |   /     \
            |      |   |    | Place    DP
            |      |   |    |  /
             _____/
                inside
```

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.

6.3. 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.[18] 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.[19]

7. Summary and open questions

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

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[18]See 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.

[19]As 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).

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 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).

A number of open questions however remain. Though I have followed Svenonius (to appear) in assuming that null Grounds are licensed in a position above DeixP, it is far from clear why this should be the case and what the exact nature of this functional layer is. Furthermore, I have said nothing about directional uses of ComplexPs, although I have noted that ComplexPs can get directional readings under perfective verbs. Clearly the lexical entry of *iz* needs to be refined to take into account not only the possibility of directional interpretation with ComplexPs but also the fact that *iz* can function as a source preposition when occuring on its own. Since this requires a more detailed investigation of the category Path, the behaviour of source vs. goal directional PPs, as well as the interaction between the PP and the aspectual properties of the verb, I leave the issue open for further research.

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