1. Introduction

Beginning with Abney's (1987) DP-Hypothesis, many linguists have provided empirical evidence for the presence of a DP in various languages. While the head of DP is occupied by articles in languages that overtly employ them, the focus of recent discussions in languages without articles (such as Russian, Polish, SerBoCroatian) is whether there is a DP on top of NP in these languages. The different proposals range from an elaborated DP structure (cf. Progovac 1998, Leko 1999, Rutkowski 2002, Bašić 2004, Pereltsvaig 2007) to the complete omission of the DP layer in favour of a simple NP analysis (Zlatić 1998, Bošković 2005, 2008, 2011).

This paper argues for a split DP-analysis of nominal expressions in Croatian. I will critically review some of the main arguments that have been brought in favour of an NP analysis (optionality of determiners, unavailability of a DP-head, adjetival nature of determiners) and will show that they are inconclusive. Instead I will show that Croatian nominal expressions do indeed contain a D head. This is against the NP approach in Corver (1992), Zlatić (1998) and Bošković (2005, 2008, 2009), who take determiners to appear either as specifiers of the noun or in a position adjoined to NP. It is also contrary to the DP approach in Progovac (1998) and Leko (1999), who propose that determiners appear in the specifier position of various functional categories projected above NP. I adopt an articulated structure of DP, as proposed by Ihsane & Puskás (2001), in which the left periphery of DP contains the projections TopP (realizing the feature [+specific/non-specific]), the projection DefP (hosting the feature [+-definite]) and the FocP, to which emphasized elements can move. The postulation of a split-DP for Croatian nominals allows for the explanation of word order variations within the DP, along with some other syntactic phenomena (e.g. obligatory definite adjetival inflection in possessive constructions).

This paper is organized as follows: Section 2 gives overview of some of the arguments that have been put forward to show that nominal expressions in SerBoCroatian are simple

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1 The term SerBoCroatian stands for Serbian, Bosnian and Croatian and is adopted here from Aljović (1999). It replaces the term Serbo-Croatian (SC) and will be employed in contexts where the cited literature refers to SC.
NPs. Different determiners that appear with nouns are claimed to be optional and adjectival in category. The consequence of this claim is that they are treated as modifiers, occupying either the specifier position of NP or being adjoined to it. In Section 3 I will show that these arguments are inconclusive for various reasons. As we will see, adjectives and determiners display different syntactic and morphological behaviour. Furthermore, the availability of argument-supporting nominalizations (ASNs) is evidence of the complexity of nominal expressions in Croatian, which cannot be explained by a simple NP-analysis. Section 4 shows that determiners in Croatian impose very strict restrictions on the selection of the nouns they modify, just like their English counterparts. In addition, determiners are not optional, because in certain contexts they must appear with the noun in order to make it accessible to the addressee. Moreover, nominal expressions are evidently endowed with both N- and D-features. This leads to the conclusion that D-features must be mapped onto the level of syntax. Section 5 introduces the reanalysis of NP as a DP, building upon the notions of definiteness and specificity, which are syntactically realized on different functional projections within the nominal left periphery. Section 6 concludes this paper.

2. SerBoCroatian Nominal Expressions as Simple NPs

SerBoCroatian does not have overt articles, which typically occupy the \( D^0 \) structural position in languages that have them and therefore the projection of DP on top of NP is not necessary at first sight. Determiners that are potentially used instead of articles in Croatian, such as prenominal possessives, demonstratives, or quantifiers, have been claimed to be optional within the noun phrase, see (1). Furthermore, they have been claimed to be “morphologically adjectives in SerBoCroatian” (cf. Zlatić 1998, Bošković 2005, 2008, 2009) for the reasons illustrated in (2) - (5):

\[
\begin{align*}
(1) & \quad (Ovaj) \text{ student voli Mariju.} \\
& \quad \text{this student loves Mary} \\
& \quad \text{‘This/the student loves Mary.’} & \quad \text{Zlatić (1998:3)} \\
\end{align*}
\]

Like adjectives, determiners agree in gender, number and case with the head noun and display adjectival morphology; that is, they have an identical declension paradigm:

\[
\begin{align*}
(2) & \quad a. \text{ nekim mladim djevojkama} \\
& \quad \text{some F.PL.INST young F.PL.INST girls F.PL.INST} \\
\end{align*}
\]
Determiners can appear in typical adjectival syntactic environments in SerBoCroatian, such as the predicate position in copula constructions (ibid.):

(3) Ova knjiga je moja.
this book is my.

Determiners can stack up and display a relatively free word order, just like adjectives do:

(4) a. ta moja slika
this my picture

b. Jovanova skupa slika vs. skupa Jovanova slika
John’s expensive picture vs. *expensive John’s picture (Bošković 2005:6)

Finally, like regular adjectives, determiners can be extracted from within the noun phrase:

(5) Ovu i lepu sam pronašla [t/i knjigu].
This/nice-A.F.SG AUX found book-A.F.SG
‘This/nice I found book.’ (Zlatić 1998:7)

3. Revisiting the Pro-NP Arguments

3.1. Determiners are a Non-Adjectival Category

The following morphological and syntactic evidence shows that adjectives and determiners do not belong to the same class:

1. **Derivation.** The group of descriptive adjectives constitutes an open class, whose inventory can be arbitrarily enlarged. Through the attachment of different suffixes, adjectives can change both their form and meaning (cf. Frleta 2005):

(6) a. rouge → rougâtre → rougeaud

b. crven → crvenkast → zacrvenjen
‘red → reddish → red-hot’
Unlike adjectives, the group of determiners constitutes a closed class of lexical items with a limited and a clearly defined inventory of words. The derivational process applied to the adjective *crven ‘red’* in (6) is not productive in the case of determiners, as depicted in (7):

(7)  
- a. ovaj /* ovajkast / *zaovajjen
  this / *thisish
- b. taj / *tajkast / *zatajjen
  that / *thatish

2. **Inflection.** Descriptive adjectives can create comparative and superlative forms. Determiners in general cannot be graded (cf. Frleta 2005):

(8)  
- a. lijep → ljepši → najljepši
  beautiful → more beautiful → the most beautiful
- b. taj → *tajji → *najtajji / moj → *mojjii → *najmojjii
  that → *thater → *thatest / my → *myer → * the myest

3. **Modification.** Descriptive adjectives can be modified by adverbs derived from various adjectives as well as by degree adverbs. With the exception of certain indefinite quantifiers, e.g. *malo ‘little’* or *puno ‘a lot’, such modification of determiners is not possible:

(9)  
- a. nevjerovatno lijepo / veoma kratko / totalno uvjerljivo ispričana priča
  incredibly nicely / very shortly / totally convincingly told story
- b. lijepo / kratko / uvjerljivo / *ova / *moja / *jedna / *malo priča
  nicely / shortly / convincingly this / my / one / *little story
- c. veoma velik vs. *veoma ova / *veoma moja / *veoma jedna
  very large” vs. *very this / *very my / *very one

4. **Predicative Constructions.** The appearance of possessives in copular constructions is taken as an evidence of their adjectival nature, see (3). If possessives can appear in copular constructions in Croatian, we would expect all other determiners to follow and to display the same behaviour. However, as the following examples show, this is not the case:

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2 This does not mean that the derivational suffixes given above attach to every adjective. They are selective with respect to the base to which they attach.

3 There are some adjectives that are non-gradable as well, e.g. *dead or nuclear.*
   This book is *one / ?first / *several / *each/every / *some.
   (The) book is *this / *that-MEDIAL / *that-DISTAL

5. **Thematic Structure.** Adjectives have a theta grid as part of their lexical entry and they may take arguments, as shown below:

(11)  Ja mislim da je prodavačica poštena.
   I think that is salesperson-FEM. honest-FEM.
   ‘I think that the salesperson is honest.’

In its function as predicate of the subordinate clause, the adjective poštena ‘honest’ assigns the theta role of agent to its subject prodavačica ‘salesperson’. Apart from the fact that determiners do not appear in predicative constructions, they also do not have a theta grid as a part of their lexical entry.

3.2. **Argument-Supporting Nominalizations (ASNs) in Croatian**

In order to support the view that nominal expressions in languages with and without articles are fundamentally different, Bošković (2008, 2009, 2011) claims that the latter do not allow ASNs with two lexical genitives\(^4\). According to Bošković (2011:2), an ASN like one in German (12a) is not possible in Croatian, as it disallows two nominal genitive arguments:

(12)  a. Hannibals Eroberung Roms
   Hannibal-GEN conquest Rome-GEN
   b. Kolumbov-o otkriće Amerike
   Columbus-POSS.NOM discovery America-GEN

First, Croatian has ASNs equivalent to (12a), see (12b). Second, note that -s in (12a) is a possessive marker and not a genitive (cf. Strunk 2004), just like -ov in (12b). The unavailability of two structural genitives within the DP is a cross-linguistic fact (Alexiadou 2001). Given the inability of the noun otkriće ‘discovery’ to assign two structural genitives, the noun Kolumbo moves to a prenominal position, where it agrees with the head noun and

\(^4\) Languages without articles don’t allow transitive nominals with two genitives (Bošković 2008:5).
receives nominative case via Spec-head agreement (Kuna 2003). The movement triggers a change in the word category. On its way from the lower complement position to the specifier of a higher functional projection, the noun Kolumbo picks up the possessive suffix -ov, thus becoming a functional category, a determiner. This process necessarily presupposes the existence of a further functional layer above the NP and below the DP, namely the functional projection PossP. Following Kuna’s proposal, which provides evidence for the existence of functional PossP projection above NP (and for DP-internal NP-movement), I propose an elaborated structure of ASNs in Croatian that necessarily includes further functional projections. As is known, deverbal nouns of the type given in (13b) inherit not only the aspectual specification of their related verbs but also other verbal properties, such as their argument structure or case assignment. Consider the following:

(13) a. Saveznik uništava neprijateljske ciljeve napalm-bombama.
   allied forces-NOM. destroy<sup>Impf</sup> enemy’s targets-ACC. napalm bombs-INS.
   ‘Allied forces have been destroying enemy’s targets with napalm bombs.’

b. savezničko uništavanje neprijateljskih ciljeva napalm-bombama
   allied forces destroying<sup>Impf</sup> enemy’s targets-GEN. napalm bombs-INS.

The deverbal noun uništavanje in (13b), which is derived from the imperfective ditransitive verb uništavati ‘destroy<sup>Impf</sup>’, obviously preserves the properties of its verbal core, since the semantic relations established in the sentence in (13a) remain the same in (13b). Especially the assignment of genitive and instrumental case to its internal arguments in (13b) makes both the nominal and the verbal characteristic of the noun uništavanje ‘destruction<sup>Impf</sup>’ obvious. In a nutshell, I assume that the structure of ASNs in Croatian looks as follows: [DP [AgrP [NumP [ClassP [nP [AspP [VP]]]]]]]. For space reasons, a detailed analysis of the above structure cannot be given here.

What does the structure of ASNs tell us about the structure of Croatian nominals? As mentioned earlier, the displayed complexity of their internal syntactic structure cannot be accounted for by a simple NP-analysis. Since one nominal argument is necessarily realized as a possessive adjective within the ASN construction, the question arises as to where it appears within its syntactic structure. Perceiving of the structure of nouns as being parallel to the structure of the clausal domain, in that it consists of three different areas (determination area, morphosyntactic area and an area where the thematic relations are established, cf. Alexiadou et al. 2007:51), allows for the assumption that the possessive element is generated somewhere lower within the nominal structure in a position where it receives its theta-role (theta-
domain/nP-shell). Since it also adds to the (in)definiteness status of the entire noun phrase, the possessive adjective obviously surfaces (somewhere) in the determination area of the noun. This allows for the conclusion that the latter position is derived by a DP-internal movement from the theta domain to the determination area. The syntactic structure of the determination area together with an analysis of possessives will be given in section 5.

4. Other Syntactic and Semantic Properties of Determiners in Croatian

One of the main arguments in favour of the NP-analysis of nominal constructions in SerBoCroatian was the claim that noun phrases appear without determiners. As introduced in section 2, elements that are used instead of articles, e.g. demonstrative determiner *ovaj ‘this’ in (1), are claimed to be optional. Since they do not have the status of articles (which are obligatory within the noun phrase), their omission does not lead to the ungrammaticality of a sentence. However, the determiner *onaj ‘that’ in (14) affects the interpretation of the nominal expression. In contexts like (14), the sentence is unacceptable if the demonstrative determiner *onaj ‘that’ is omitted:

(14) *(Onaj) razgovor sa svećenikom, dok je još bio dijete,
(That) conversation with priest, while is still been child,
pretvorio se u sjećanje.
turned itself into memory.
‘The conversation with the priest, when he was still a child,
came to be a mere memory.’ (Coelho 2006:25)

The adverbial clause in (14) creates a particular referential context which makes the demonstrative determiner obligatory. The demonstrative determiner *onaj cannot be treated as an adjectival adjunct, because adjuncts are always optional (cf. Richards 2008). Furthermore, adjuncts do not c-select the phrase to which they adjoin (ibid.). However, some determiners impose strict restrictions on the selected noun:

(15) a. *nekoliko ključeva / hlača / *ključa / *mlijeka
   several keys-G.PL. / trousers-G.PL. / *key-G.SG. / *milk-G.SG.
b. *svaki rezept / *svaki rezept-i
   each prescription-N.SG. / *each prescriptions-N.PL.
For instance, determiners (quantifiers) such as *mnogo* ‘many’, *puno* ‘a lot of/much’), *malo* ‘little’, *dosta/dovoljno* ‘enough’ along with nouns that express indefinite amount of something, such as *dio* ‘a part of’ or *manjina* ‘minority’/*većina* ‘majority’, occur with nouns specified for [+plural] feature or non-count nouns (*malo* ‘little’ *mlijeka* ‘milk’/*vode* ‘water’/*vina* ‘wine’):

(16)  Pročitala sam *nekoliko knjiga*.

‘I read several books.’

In (16) the quantifier *nekoliko* ‘several’ assigns genitive case to the noun *knjiga* ‘books’, which itself is obligatorily marked for [+plural]. The entire nominal complement of the verb *pročitati* ‘read’ is assigned accusative case. The introduced example shows that certain determiner types affect not only the number feature of their nominal complement, but are also responsible for their case marking. Within the Government and Binding framework the conditions of structural case assignment involve the structural relationship of government and c-/m-command (Haegeman 1994:137). In order to case-mark its nominal complement, the determiner *nekoliko* ‘several’ needs to govern and c-command it. By definition, governors are heads. Let us consider the analyses favoured so far⁵:

(17)  a.  NP          b.        DP
          DP   N’
      nekoliko   Spec, DP
          N   D’
      knjiga   ∅  knjiga

The idea that nominal expressions are NPs, as depicted in (17a), implies that determiners appear either as a specifier of the noun or in a position adjoined to NP (cf. Corver 1992, Zlatić 1998, Bošković 2005). However, in neither of these positions would the determiner *nekoliko* ‘several’ satisfy the requirement imposed by the case-assignment condition. This very same

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⁵ The representations given in (17) above are largely oversimplified and are introduced here as such in order to show that equal treatment of all prenominal elements is not justified. Above all, as the data above suggest, these elements should not be treated as phrasal adjuncts. I also want to emphasize that none of the approaches in favour of the DP-Analysis states that the quantifier *nekoliko* ‘several’ as such occupies [Spec, DP].
observation rules out the DP-analysis of this expression given in (17b). Both Progovac (1998) and Leko (1999) argue in favour of the DP-analysis of nominal expressions in SerBoCroatian. However, both adopt the adjectival analysis of different determiners, according to which these elements appear in the specifier position of different functional categories projected above NP. As (17b) exemplifies, such an analysis would not provide a proper explanation of the noun phrase introduced in (16) either. If determiners are analysed as phrasal categories occupying the specifier position, they cannot function as case-assigners. Therefore, they must be heads.

What about the semantics of determiners? According to Beavers (2003:3), determiners and nouns are partly associated with different semantic features. Whereas D-semantics includes the notions of (in)definiteness, quantification, genericity etc., N-semantics is rather attributive and restrictive in nature, e.g. the nouns dog, cat, fish restrict the set of possible referents. All well-formed noun phrases must have both D- and N-semantics. This requirement is captured in the Nominal Phrase Semantic Well-Formedness Condition (Beavers 2003:4). In his view, nominal expressions display both N- and D-semantics independently of the presence/absence of D- and N-elements. The Croatian examples below confirm this observation:

(18) (i) NPs displaying both D- and N-semantics:

*Svako dijete voli svoje roditelje.*

‘Every child loves its parents.’

(ii) NPs without nouns still display N-semantics:

*Iako je puno gradana glasovalo, mnogi e nisu izašli na biranje.*

‘Although a lot of citizens voted, many e did not contest the election.’

(iii) NPs without determiners still display D-semantics:

*(Neke) novinarke su te tražile.*

“(Some) journalists were looking for you.”

As the examples in (18) show, the absence of D-elements is not a reliable criterion for the absence of D-semantics and D-features within a nominal phrase. Since N- and D-features become intertwined within nominal expressions, D-features must be mapped onto the level of syntax as well.
5. Reanalysis of NP as a DP: a Split-DP Analysis of Croatian Nouns

5.1. Decomposing the Left Periphery of DP

According to the cartographic approach to syntactic structures (e.g. Rizzi 1997, Cinque 1999, Belletti 2004, among others), the noun phrase displays a structure parallel to that of the clause: both can be decomposed into three domains (cf. Ihsane & Puskás 2001, Aboh 2004, Laenzlinger 2005, Giusti 2005). The established parallelism between the two and the corresponding subdivision into three domains are illustrated below (Ihsane 2010:17):

(19) a. \[DP \ldots [DP \ldots [FP \ldots [NP \ldots ]]]]]

b. \[CP \ldots [CP \ldots [FP \ldots [VP \ldots ]]]]]

left periphery inflectional domain NP/VP-shells

The NP/VP-shells represent a thematic domain of a verb or a noun; that is, a domain where their external and internal arguments are merged. The inflectional domain is made up of functional projections that host modifiers of each lexical category, such as adverbs within the clause or adjectives within the noun phrase. Agreement, phi-features and case are also checked in this domain. Finally, the left periphery is associated with the notions of topic and focus in the clausal domain (Rizzi 1997) and, within the nominal domain, with the features related to the D head such as (in)definiteness, specificity or referentiality (Aboh 2003).

Like Giusti (2005) and many others, Ihsane & Puskás (2001) also propose a structure of the nominal left periphery parallel to Rizzi’s (1997) split CP: DP > TopP > FocP > DefP. However, they place special emphasis on the discourse related notions of definiteness and specificity and their DP-internal syntactic realization. In their view, the notions of definiteness and specificity are responsible for the DP-internal movement of various constituents within the noun phrase. Since definiteness and specificity evidentially cannot be collapsed into one property, they project separately. The lowest projection within the nominal left periphery, which corresponds to Rizzi’s (1997) FinP, is labeled Definite Phrase (DefP). As already argued by Giusti (2005), the head of DefP, Def0, is occupied by articles, which in some languages trigger different inflection on adjectival modifiers. Ihsane & Puskás (2001:41) argue that “the choice of the article reflects certain properties of the nominal system”. For instance, certain types of nouns are selected by certain determiners, e.g. mass nouns in English can only be selected by a zero indefinite article, as in John bought (*a) rice.
The morpho-syntactic realization of definiteness within the nominal system differs from language to language. In languages like Swedish, definiteness markers can appear twice, see (20a), while in others, e.g. Romanian in (20b), the feature [+definite] sometimes does not have to be phonologically realized. Nevertheless, the nouns given in (20a, b) below are both definite (Ihsane & Puskás 2001:42):

(20) a. det store huset 
the big house-the
I’m going to professor-(*the)

Since specificity and definiteness are two distinct features, the maximal projection endowed with the specificity feature is the head of TopP, because TopP hosts information that has been pre-established in the discourse. Similarly, nominal elements marked as [+specific] are entities that have been pre-established in the discourse. The projection TopP licenses some definite articles and demonstratives. Due to the fact that certain elements within the noun phrase can be emphasized (e.g. numerals and possessives), Ihsane & Puskás (2001) also argue for a FocusP, which is dominated by both the nominal TopP and the highest DP projection, the DP.

5.2. Syntactic Analysis of Croatian Nouns: Possessive Constructions

As shown in section 3.2, the complex internal structure of ASNs in Croatian cannot be accounted for by a simple NP-analysis. One of the nominal arguments within ASNs is realized as a possessive adjective. Since the possessive element is c-selected and theta-marked by the noun, it must be generated in a position where it receives its theta-role; that is, it must be generated within the nP-shell. Due to the fact that it contributes to the definiteness status of the whole nominal expression, it moves to the nominal left periphery, where these features are checked. To be precise: after having been theta-marked by the head noun, the nominal argument internally merges with the corresponding possessive suffix in PossP, moving farther up to DefP. That possessive elements occupy Def₀ in Croatian is further supported by the definite adjectival inflection, which has been considered the most prominent overt realization of definiteness in SerBoCroatian.

As already noted and pointed out by Kuna (2003), the possessive suffix -in as a definiteness marker affects the definiteness status of the whole phrase along with the overt morphological realisation of the successive adjectival modifiers. When the possessive adjective appears in combination with other adjectival modifiers, they have to be marked definite, as the following examples illustrate:
Unlike the descriptive adjective, which needs to be marked definite by the definiteness suffix -i, the derivational suffix -in contains such a strong definiteness feature that the possessive noun does not need any additional definiteness marker (Kuna 2003). In the case that the definiteness marker -i is attached to the possessive adjective, the complete nominal phrase becomes ungrammatical, as shown in (21b). In (21c) the DP is ungrammatical, because the descriptive adjective star 'old' fails to be marked for definiteness.

How can we explain the above interdependence between the adjectival inflection and the possessive form? Well, the above data fit nicely into the picture of a split nominal left periphery. We may remember that, according to Giusti (2005) and Ihsane & Puskás (2001), articles as a prototypical instantiation of (in)definiteness occupy DefP. In some languages they trigger different inflection on adjectival modifiers. This is exactly what we observe in (21). Having moved to DefP, the possessive adjective triggers inflection on the succeeding descriptive adjective: \[ DP [TopP [FocP [DefP [Def Marijin [FP star [NP rodak]]]]]]]. Since the possessive suffix itself is a definiteness marker and occupies the head of DefP, an additional -i cannot be attached to it.

Although the adjectival marking -i has been regarded as the most prominent overt morphological realization of a definiteness feature in SerBoCroatian (cf.Progovac 1998), both Silić (2000) and Pranjković (2000) point out that the distinction between the indefinite and definite forms of adjectives has become morphologically blurred. The long form of adjectives (-i-form) has prevailed over the short one. In concrete terms, the morphologically marked form, e.g. visok 'tall-DEF.' in (22a), has replaced the unmarked one, e.g. visok 'tall-INDEF.' in (22b). For this reason, when a noun that appears with an adjective is to be marked as indefinite, the adjective necessarily occurs together with the numeral jedan 'one', which functions here as a real indefinite article:

(22) a. Pred vratima stoji jedan visoki čovjek.
    in front of door stands one tall-DEF. man
    ‘There is a tall man standing at the door.’
b. Pred vratima stoji visok čovjek.
in front of door stands tall-INDEF. man
‘There is a tall man standing at the door.’ (Silić 2000:404)

The above observation further confirms a waning importance of adjectival inflection as the (in)definiteness marker in Croatian in favour of other lexicalized forms. It also conforms with the above analysis, where it is assigned the status of an adjectival inflection only.

6. Concluding Remarks

The strongest claim against a DP-analysis of Croatian nouns is based on the fact that Croatian does not have articles. Although it sometimes uses demonstrative determiners, these elements are regarded to be optional within a noun phrase. Furthermore, they are claimed to be “morphologically adjectives in SerBoCroatian” (cf. Zlatić (1998), Bošković 2005, 2008, 2009) for the various reasons mentioned above. Having an adjectival status, they appear either in the specifier position of the NP or are adjoined to it.

In this paper I argue for a split DP-analysis of nominal expressions in Croatian. I show that the arguments provided in favour of an NP-analysis are inconclusive. First, adjectives and determiners display different syntactic and morphological behaviour. Second, the availability of argument-supporting nominals (ASNs) provides a further argument for the complexity of nominal expressions in Croatian, which cannot be explained using a simple NP analysis. Having showed that determiners are not optional within a noun phrase and that they display head properties, we have been able to see that Croatian nominal expressions display both N- and D-semantics irrespective of the presence or absence of D- and N-elements. This allows us to conclude that D-features have to be mapped onto the level of syntax as well. Following Ihsane & Puskás (2001), who proposed a structure of the nominal left periphery parallel to Rizzi’s (1997) split CP, I adopted the split DP-analysis for Croatian nouns. This allows me to explain some syntactic phenomena in Croatian, one of them being the obligatory definite adjectival inflection in possessive structures discussed above.

References


