Relative Clauses in an Article-less Language

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1. Introduction

Ever since the introduction of DP (Fukui & Speas (1986), Abney (1987)), languages lacking (definite) articles spurred the question regarding its universality. Two views emerged: (a) Universal DP-Hypothesis: all languages project DP (Progovac (1998), Rappaport (2001), Bašić (2004), Cinque (2005), i.a.) and (b) Parameterized DP-Hypothesis: languages without (definite) articles do not project DP (Fukui (1986), Corver (1992), Zlatić (1997), Bošković (2005), Despić (2011), i.a.). The latter argues that D-elements in DP-less languages are categorially adjectives and that the lack of DP projection has certain syntactic implications, such as extractability out of nominals (LBE and AE), binding potentials, etc. A syntactic implication that has not yet received much attention in the literature is that the lack of a DP projection virtually eliminates three of the four classical analyses of RCs. That is, RCs in a DP-less language must be NP adjuncts. This prediction has not been discussed in the literature though some work on Serbian RCs has been done (van de Auwera & Kučanda (1985), Browne (1986), Kordić (1995), Runić (2006), Gračanin-Yuksek (2008), Herdan (2008), Bošković (2009), Gračanin-Yuksek (2010), Arsenijević & Gračanin-Yuksek (2012)).[1] The question that has often been avoided in this research[2] is the nominal structure that the RCs attach to. And while some researchers *assume* that Serbian RCs attach to DP on a par with some accounts provided for English RCs for instance, some do not discuss the issue at all.[3] Since the presence of a DP in Serbian is a controversial issue, the RC-attachment question needs to be addressed. In this paper, I will attend to it. In particular, I will briefly present the four classical analyses of RCs and then discuss three arguments provided to defend the D-RC view, i.e., the view that RCs attach to D in English. The arguments essentially show that there is a selectional dependency between D and RC. I will then investigate how these empirical observations extend to Serbian and show that such dependencies can be found in the language, strongly suggesting that there are DP projections in Serbian. I will offer an analysis, adopting Larsonian dP-shell to track the data.

2. The Four Classical Analyses

From the early generative grammar, there have been four main proposals regarding the structure of prototypical RCs. Although these proposals tackle few pivotal questions, I will focus only on the one dealing with the phrase(s) that RCs attach to.

Prototypical RCs attach to nominal relative heads, which are standardly assumed to be DPs containing NPs. Most of the languages investigated in the domain of RCs contain definite articles and are believed to uncontroversially project DP. That is, both DP and NP are undoubtedly presumed to project within a nominal domain. Consequently, two views emerged regarding the phrasal-level attachment of RCs:[4]

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[1] Serbian RCs have been discussed in processing literature to some extent as well (Smith & Mimica (1984), Lukatela (1989), Milekić et al. (1995), Goodluck & Stojanović (1996), Stojanović (1999), Elouazizi et al. (2013), Stojanović et al. (to appear)).
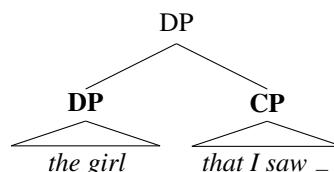
[2] The exception is Runić (2006).

[3] Bošković (2009) argues that the weak-island sensitivity in Serbian RCs with resumptive pronouns stems from the absence of a DP in Serbian. However, he does not provide any specifics of the structure of RCs in general.

[4] There are other proposals in which the level of attachment correlates with restrictiveness of an RC. For details, see Jackendoff (1977), Emonds (1979), McCawley (1982), Demirdache (1991).
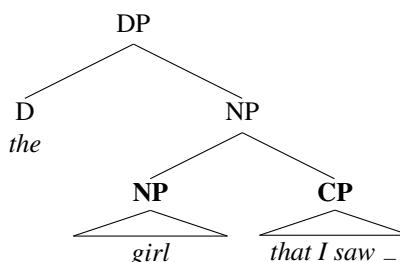
(1) <u>RCs attach to DP</u>
(Smith (1964), Ross (1967), Kayne (1994), Larson (2008), among others)[5] [6]

(taken from Larson (2008), p12, ex (43a))
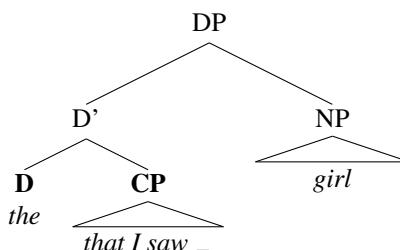
```
            DP
          /    \
       DP        CP
      /  \      /  \
   the girl   that I saw _
```

(2) <u>RCs attach to NP</u>
(Stockwell et al. (1973), Baker (1978), among others)

(taken from Larson (2008), p12, ex (43b))

```
            DP
          /    \
        D        NP
       the     /    \
            NP        CP
           /  \      /  \
         girl    that I saw _
```
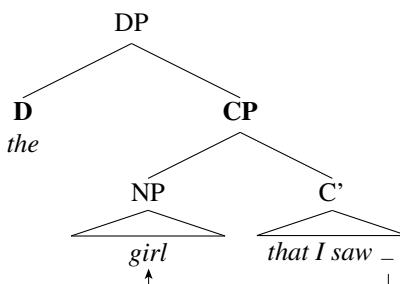
Both of the structures presented above assume that the RCs are adjuncts, to DP (1) or to NP (2) respectively. RCs have also been argued to be complements of Ds. This view was, in fact, the first generative approach to RCs (Smith (1964)), illustrated in (3) below. A few similar analyses emerged afterwards giving further argumentation for the RC-complementation view (Brame (1968), Vergnaud (1974), Kayne (1994) among others, illustrated in (4) below). The difference between the former (Smith's) and the latter (Brame's, Vergnaud's, and others) is the relative head position: outside or inside the RC respectively. See the works cited for details.

(3) (taken from Larson (2008), p12, ex (44a))

```
                DP
              /    \
           D'        NP
          /  \      /  \
        D     CP    girl
       the   /  \
          that I saw _
```

(4) (taken from Larson (2008), p12, ex (44b))

```
            DP
          /    \
        D        CP
       the     /    \
            NP        C'
           /  \      /  \
         girl    that I saw _
```

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[5] Note that some of the authors listed do not use the label **DP** since their research preceded the introduction of a DP in a nominal domain. The labels they used however correspond to the currently assumed DP.

[6] I am presenting here only adjunction versions. I will show shortly that the authors cited differ in how they treat RCs, as adjuncts or as complements of D. What is illustrated here is the uniformity among the authors regarding the phrasal, i.e., DP-attachment of RCs.

The RC-complementation view is argued to apply only in the DP domain as opposed to the RC-adjunction view, applicable in both domains: DP and NP. The concept of complementation is based on selectional dependencies between two elements: an element X selects for an element Y and the two are merged into the structure. In the case of RCs, this would mean that D selects for RC; i.e., there is a selectional dependency between D and RC. It is exactly these types of dependencies that are offered as arguments for the RC-complementation view. They are observed for languages that uncontroversially project DP, such as English for instance. The Parameterized DP-Hypothesis predicts that they should not exist in languages without definite articles since there is no DP projection. Serbian, as an exemplar of the latter type, is hence expected not to show any selectional dependencies between Ds, or the elements that are claimed to be lexical instantiations of D, and RCs. In the next section I will show that this prediction is not borne out.

3. Selectional Dependencies between D and RC

The first observation defending the D-RC view is that there are selectional restrictions between determiners and restrictiveness of RCs (Smith (1964)). Smith notes that different types of determiners allow different interpretations of RCs: restrictive and non-restrictive. Accordingly, she divides determiners into three classes:[7]

(5) a. UNSPECIFIED: *any, all*, etc. (only **restrictive** RCs)
      Any book which is about linguistics is interesting.
      **Any* book, which is about linguistics, is interesting.*

   b. UNIQUE: ∅ (proper names) (only **non-restrictive** RCs)
      **John who is from the South hates cold weather.*
      John, who knows the way, has offered to guide us.

   c. SPECIFIED: *a, the*, ∅ (**both** restrictive and non-restrictive RCs)
      They pointed to a dog who was looking at him hopefully.
      They pointed to a dog, who was looking at him hopefully.

Kordić (1995) observes that Croatian shows a similar distribution while Runić (2006) extends this observation to Serbian. Based on the interpretations that RCs can receive: restrictive and non-restrictive, the determiners are divided into three classes (I adopt Smith's 'labels' here): (a) unspecified determiners (allowing only restrictive RCs), (b) unique (allowing only non-restrictive RCs) and (c) specified (allowing both restrictive and non-restrictive RCs).[8] [9]

   a. UNSPECIFIED: *onaj* 'that', *takav* 'such', *onakav* 'such, distant', *svi* 'all', *svaki* 'each', *ikoji* 'whichever', *ikakav* 'no matter what type', *kakav god* 'no matter which' (only **restrictive** RCs)

(6) ***Ona*** *žena(*,)* *koja se bavi sportom(*,)* *ima zdravo srce.*
      that woman   who REFL do sports   have heatlhy heart
      'That/The woman who does sports has a healthy heart.'   (SERBIAN)

   b. UNIQUE: ∅ (proper names, personal pronouns[10]) (only **non-restrictive** RCs)

(7) *Dolazi **Marko***(,) koji donosi knjigu.*
      come   Marko   who bring book
      'Here comes Marko who brings the book.'

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[7] The examples are taken from Smith (1964), p38.
[8] Even though Kordić (1995) claims that some determiners largely allow only non-restrictive interpretations of RCs, she shows, based on the Corpora search, that they actually allow restrictive interpretations as well (pp78-107). Hence, I will group these determiners in the 'specified' class.
[9] The examples are taken from Runić (2006), pp83-84.
[10] See Kordić (1995) and Runić (2006) for some exceptions.

c. S<small>PECIFIED</small>: *ovaj* 'this', *taj* 'yonder', *neki* 'some', *jedan* 'one', all possessives
(**both** restrictive and non-restrictive RCs)

(8)   *Nosim* **ovaj** *kaput(,) koji   je   star.*
     wear   this coat   which A<small>UX</small> old

     'I wear this coat(,) which is old.'

Another argument for the D-RC view comes from Jackendoff's observation that definite articles in English cannot co-occur with proper names alone (as shown in (9a) below) but, if the proper name contains a modifier (adjective, RC, PP), the definite article is licit. In other words, there is a discontinuous dependency between the definite article and a restrictive modifier (Jackendoff (1977)):

(9)   (taken from Larson (2008), p13, ex (47))

    a. ****the** Paris*

    b. ***the** <u>old</u> Paris* / ***the** Paris <u>that I love</u>* / ***the** Paris <u>of the twenties</u>*

Since Serbian does not have definite articles, the observation cannot extend in its exact form into it. However, we can find a somewhat similar phenomenon. As we have seen above, Serbian has determiners that allow only restrictive RCs. One of those determiners is the demonstrative *onaj* 'that'. This demonstrative is relevant for the current discussion because not only does it allow exclusively the restrictive interpretation of RCs, but it also <u>requires</u> a restrictive modifier (adjective, RC, PP) when it is not used deictically. Such a behavior is reminiscent of the English definite article described above. That is, there is a discontinuous dependency between the determiner *onaj* 'that' and a restrictive modifier:[11]

(10)   a. *Sećam   se   **onog** *(<u>starog</u>) Novog Sada.*
        remember R<small>EFL</small> that   old   Novi   Sad

       'I remember the old Novi Sad.'   (S<small>ERBIAN</small>)

    b. *Sećam   se   **onog** Novog Sada *(<u>u kojem sam odrasla</u>).*
        remember R<small>EFL</small> that Novi   Sad   in which A<small>UX</small> grew.up

       'I remember the Novi Sad which I grew up in.'

    c. *Sećam   se   **onog** Novog Sada *(<u>iz 80-ih</u>).*
        remember R<small>EFL</small> that Novi   Sad   from 80s

       'I remember the Novi Sad from the 80s.'

The third and the final argument supporting the D-RC treatment of RCs comes from the observation that English abstract common nouns (or, indefinite nouns) cannot co-occur with a bare definite article. However, if there is a restrictive modifier, the use of the definite article is licit (Kuroda (1969)).

(11)   (taken from Larson (2008), p12, ex (45))

    a. **I earned it **the** way.*

    b. *I earned it **the** <u>old-fashioned</u> way* / ***the** way <u>that one should</u>*.

There is a somewhat similar phenomenon in Serbian. Ivić (1964) notices that Serbian temporal adverbs can be expressed with a genitive case-marked noun, but the noun must have a modifier. In other words, the genitive case and the restrictive modifier seem to be implicitly related.

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[11] Runić (2006) claims that the relative head containing a determiner *onaj* 'that' and a proper name can have both restrictive and non-restrictive interpretation since it contains determiners belonging to two different classes: the demonstrative allows only restrictive while the proper name allows only non-restrictive interpretation. (p87) Note however that the non-restrictive interpretation is possible only if the demonstrative *onaj* is used deictically.

(12) *Marija je otputovala **jutra** *(kojeg je Todor maturirao).*
      Marija AUX left morning.**GEN** which AUX Todor graduated
      'Marija left the morning Todor graduated.' (SERBIAN)

The Macedonian counterpart to the Serbian (12) shows that instead of a dependency between the genitive case marked noun and a restrictive modifier, there is a dependency between the definite article and modifier. That is, temporal adverbs in Macedonian, a Slavic language with definite articles and very limited overt case-marking, show the exact same behavior as English abstract common nouns: they cannot appear with a bare definite article (as shown in (13a)); if there is an RC, the use of the definite article is licit (shown in (13b)).[12]

(13) a. **Marija otpatuva utro-**to**.*
          Marija left morning-the
          'Marija left in the morning.' (MACEDONIAN)

      b. *Marija otpatuva utro-**to** *(koe Todor diplomiraše).*
          Marija left morning-the which Todor graduated
          'Marija left the morning Todor graduated.'

The genitive case in Serbian seems to correspond to Macedonian definite article: they both require the presence of an RC. In other words, there is a selectional dependency between the D (Macedonian definite article/Serbian genitive case-assigned null D) and the RC.

The three selectional dependencies observed between determiners in Serbian and RCs (or, more broadly speaking, restrictive modifiers) show that the implication of the Parameterized DP-Hypothesis, namely that Serbian RCs must be NP-adjuncts, is wrong. The data demonstrate that there are selectional dependencies between determiners and RCs in Serbian, supporting the D-RC complementation view. Such a view entails that there must be DP projection in a language. In the next section, I present the specifics of the analysis I assume, as developed in Larson (1991), Larson (2004) and Larson (forthcoming).

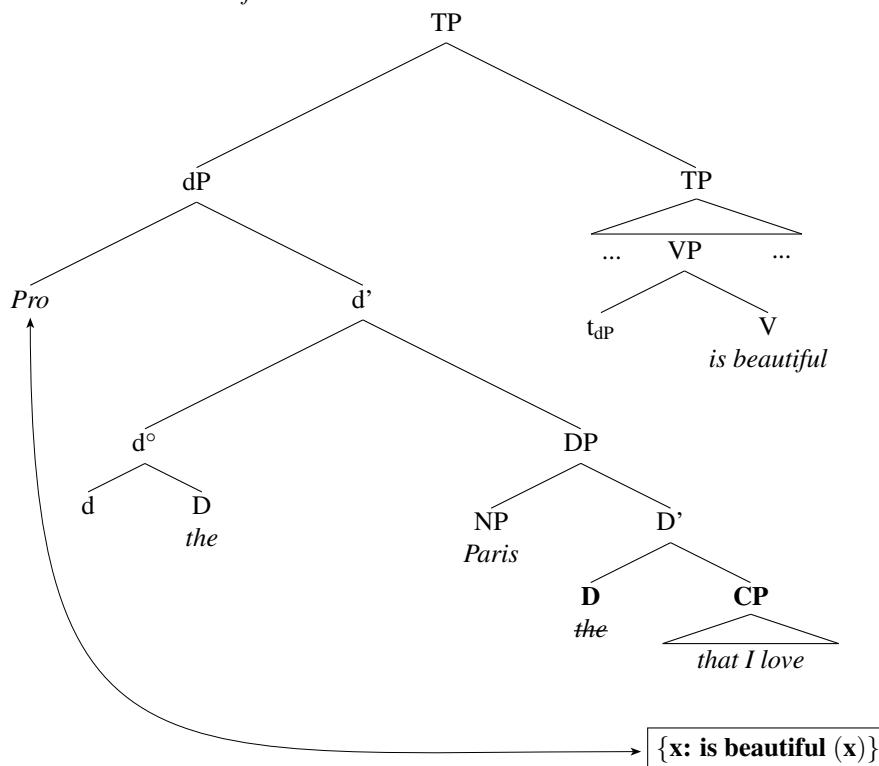## 4. Larsonian dP-shell and RCs

To account for the Serbian RC data, I will adopt Larson's dP-shell structure. This proposal uniquely settles the tension between the syntactic and semantic view of determiners in that it argues that (a) Ds take noun phrases as their complements (Ds select for NPs: DP-Hypothesis; Abney (1987)) and (b) Ds do not lack descriptive content (they express relations between properties or concepts: Relational View of Determiners; Barwise & Cooper (1981)). Under this view, the parallel is drawn between Ds and Vs: they both possess argument structure and valence and, they both assign θ-roles, which are subject to a hierarchical ordering. Accordingly then, Ds can be divided into intransitive (pronouns), transitive (binary quantifiers) and, ditransitive Ds (comparatives and quantifiers with exception phrases). As far as the θ-role assignment and the θ-hierarchy associated with Ds are concerned, Ds assign θ-roles to their set arguments which they play in quantification expressed by Ds. There are basically three θ-roles that Ds can assign: Restriction ([RES]), Scope ([SCP]) and Nominal Oblique ([NOBLIQUE]).[13] Nominal Oblique is a cover term for a set of θ-roles, which includes optional arguments, such as restrictive modifiers. These can be viewed as a counterpart to optional arguments found in verbal domain, such as benefactives, instrumentals and locatives.

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[12] Macedonian data are from Ilina Stojanovska, p.c.

[13] The [SCP] argument is associated with a main clause predicate. The theory that Larson argues for is based on the theory of argument projection (Larson (1988)). He proposes that 'the syntactic scope argument of D is in fact <u>never</u> an overt predicate in the clause [...] Rather, the scope argument D is an independent, inaudible, pro-predicate element *Pro*, licensed by D, and projected in Spec of DP, under the hierarchy $\Theta_{\text{SCOPE}} > \Theta_{\text{RESTRICT}}$. [...] the semantic value of this *Pro* argument is determined configurationally at the level of Logical Form. Specifically *Pro* gets its value from the derived predicate that is the structural sister of DP at LF.' (p9) Hence, the argument that is assigned θ-role of [SCP] is a non-overt *Pro*, whose value is determined after DP has raised by QR.

Restrictive modifiers, as optional arguments of D in this system, include adjectives, PPs and RCs. The θ-role that they are assigned is Restrictive Modifier ([RMOD]) and it is ranked low on the thematic hierarchy (like other [NOBLIQUE] θ-roles). Therefore, D first combines with the restrictive modifier, and then with a noun, yielding the following structure: [N D **ResMod**]. In the case of RCs then, 'this proposal resurrects the Article-S analysis insofar as D and the relative clause form an underlying constituent that excludes the noun.' (Larson (1991), p19) The tree diagram below shows the derivation (irrelevant structure is suppressed; see Larson (1991) and his subsequent work for details).

(14) *The Paris that I love is beautiful.*

Such analysis of RCs, which Larson dubs **Complex Determiner Analysis** (CDA), very much resembles the first analysis of RCs offered in the generative grammar, as shown in (3) above (Smith (1964)). The crucial assumption is that the D head selects RC as its argument, immediately tracking the observed selectional dependencies between the two elements, as discussed in the previous section. The dependencies are shown to exist not only in English, a language uncontroversially assumed to project DP, but also in Serbian, a language whose nominal structure is a matter of a controversy. The CDA analysis presented above successfully tracks the distribution of Ds and RCs in both English and Serbian, whereas the NP-adjunction analysis, as advocated by the proponents of the Parameterized DP-Hypothesis, is faced with a rather perplexing set of Serbian data.

5. Conclusion

In this paper, I discussed a syntactic implication that has not yet received much attention in the literature regarding the structure of RCs in a DP-less language. The Parameterized DP-Hypothesis predicts that RCs in DP-less languages must be NP-adjuncts since a DP layer is absent in a nominal domain. I showed that this prediction is not borne out based on the observed selectional dependencies between determiners and RCs in Serbian.

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Proceedings of the 32nd West Coast Conference on Formal Linguistics

edited by Ulrike Steindl, Thomas Borer, Huilin Fang, Alfredo García Pardo, Peter Guekguezian, Brian Hsu, Charlie O'Hara, and Iris Chuoying Ouyang

Cascadilla Proceedings Project   Somerville, MA   2015

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This paper can be cited as:

LaTerza, Ivana. 2015. Relative Clauses in an Article-less Language. In *Proceedings of the 32nd West Coast Conference on Formal Linguistics*, ed. Ulrike Steindl et al., 268-275. Somerville, MA: Cascadilla Proceedings Project. www.lingref.com, document #3177.