On the structure of double-coordinator constructions

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ABSTRACT

The paper presents novel Macedonian and Slovenian data with conjunction doubling that exhibit unexpected binding behaviour as each individual conjunct binds an anaphor in the object position individually. The paper shows the extent of the phenomena in Macedonian and Slovenian, showing that it is related to distributive interpretation linked to conjunction doubling constructions and discusses several possible analyses. The paper argues these data also cannot be simply explained away and proposes a silent quantifier in the structure of coordination, which further means the surprising binding is really just an instance of variable binding.

KEYWORDS coordination · conjunction doubling · distributivity · binding

1 INTRODUCTION

According to Principle A of Binding Theory (Chomsky 1981), two conditions need to be met for an anaphor to be properly bound. An anaphor needs to be co-indexed with its binder and it needs to be c-commanded by its binder (inside their local domain). Principle A is seen at work in (1) and (2): In (1), *Peter* c-commands the co-indexed reflexive pronoun *himself*, so the sentence is good; in (2) *Peter* does not c-command the co-indexed reflexive, hence the *.

(1)   Peter$_1$ saw himself$_1$ in the mirror.   (2)   *Peter$_1$'s friend saw himself$_1$ in the mirror.
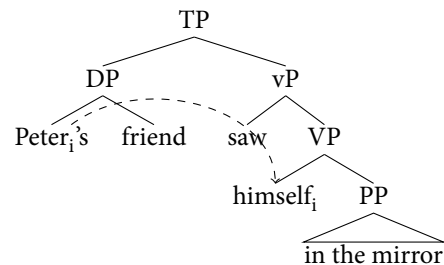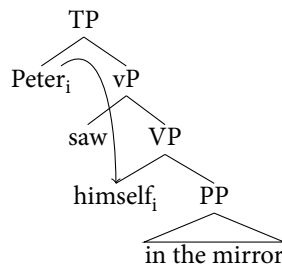
Principle A is also at work in simplex coordination, that is, when the subject is coordinated with only one conjunction marker, as in examples (3). Only the entire coordination can bind the anaphor in the object position, as shown in (3-a). The individual conjuncts cannot bind from inside a coordination, shown in (3-b)–(3-c), presumably because they cannot c-command out from inside a coordinated subject. Similarly, the possessive pronoun *their* cannot be bound by individual conjuncts in (4-a). Interestingly, when the object is plural, as in (4-b), a (distributive) reading where each of the two conjuncts saw their daughter becomes available. This reading is signalled with a '+' sign between the two indices. This reading is impossible in (4-a).

(3)   a.   [Peter$_1$ and Mary$_2$]$_3$ saw themselves$_{*1/*2/3}$ in the mirror.
        b.   *[Peter$_1$ and Mary$_2$]$_3$ saw himself$_1$ in the mirror.

    c.   *[Peter$_1$ and Mary$_2$]$_3$ saw herself$_2$ in the mirror.

(4)   a.   [Peter$_1$ and Mary$_2$]$_3$ saw their$_{*1/*2/*1+2/3}$ daughter in the park.

    b.   [Peter$_1$ and Mary$_2$]$_3$ saw their$_{*1/*2/1+2/3}$ daughters in the park.

These facts extend to Macedonian (Mac) (5-a) and Slovenian (Slo) (6-a), which will be the languages most of the paper is based on. 'Ana and Ile' in (5-a) and 'Ana and Črt' in (6-a) are a couple that share the same daughter. And just like in English, the distributive reading is available when the object is in plural/dual, as shown in (5-b) and (6-b).

(5)   a.   [Ana$_1$ i Ile$_2$]$_3$ ja povikaa svojata$_{*1/*2/*1+2/3}$ kjerka.   Mac
         Ana & Ile   her called.3PL REFL.POSS+the   daughter.SG
         'Ana and Ile called their daughter.'

    b.   [Ana$_1$ i Ile$_2$]$_3$ ja povikaa svoite$_{*1/*2/1+2/3}$ kjerki.   Mac
         Ana & Ile   her called.3PL REFL.POSS.PL+the daughter.PL
         'Ana and Ile called their daughters.'

(6)   a.   [Ana$_1$ in Črt$_2$]$_3$ sta   poklicala svojo$_{*1/*2/*1+2/3}$ hčerko.   Slo
         Ana & Črt   AUX.DU call.DU   REFL.POSS   daughter.SG
         'Ana and Črt called their daughter.'

    b.   [Ana$_1$ in Črt$_2$]$_3$ sta   poklicala svoji$_{*1/*2/1+2/3}$ hčerki.   Slo
         Ana & Črt   AUX.DU call.DU   REFL.POSS.DU daughter.DU
         'Ana and Črt called their daughters.'

1.1 THE CORE EXAMPLES

The two individual conjuncts however seem to bind out from inside a coordination in Macedonian (7) and Slovenian (8), when the coordinator is repeated in front of each conjunct. Note that these examples are different from (4-b), (5-b), and (6-b) as here the object is singular.[1]

(7)   [I Marija$_1$ i Milan$_2$]$_3$ ja povikaa svojata$_{1+2/3}$ kjerka.   Mac
      & Marija & Milan   her called.PL REFL.POSS+the daughter.SG
      'Both Marija and Milan called their daughters.'

(8)   [In Marija$_1$ in Milan$_2$]$_3$ sta poklicala svojo$_{1+2/3}$ hčerko.   Slo
      & Marija & Milan   AUX called.DU REFL.POSS daughter.SG
      'Both Marija and Milan called their daughters.'

Examples (7) and (8) do not only have the simple distributivity reading, which corresponds to a situation where Marija and Milan share the same daughter and there are two distinct events where each calls her separately. This reading is marked by the index shared between the reflexive possessive pronoun and the entire coordination. The most interesting reading of (7) and (8) is the one that corresponds to the index '1+2', which corresponds to the situation in which there are two distinct events in which Marija calls her daughter and Milan calls his daughter (and the two daughters are not the same person). Note that these are not two readings but a single reading of these sentences.

    (7) and (8) are instances of the so-called *double conjunction construction* or *conjunction doubling construction* [CDC] in Progovac's (1998a, 1998b, 1999) terms. CDC has been argued by many to bring about distributivity (c.f. Kayne 1994, Progovac 1998a,b, 1999, among others), but until now binding within CDC has not been discussed. What we call distributive binding (the possibility for each individual conjunct to bind separately) is possible in a number of other languages (including Bosnian/Croatian/Montenegrin/Serbian, Czech, Japanese, Greek etc.), although not always with the same doubling strategy

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[1]Note that the "joint" reading in (7) and (8) is, in view of the discussion below, probably just "accidental" in the sense that the reflexive possessive isn't really bound by the entire coordination, the sentence simply allows this reading in which Marija and Milan share a daughter.
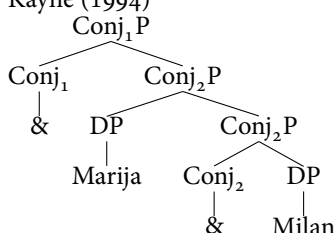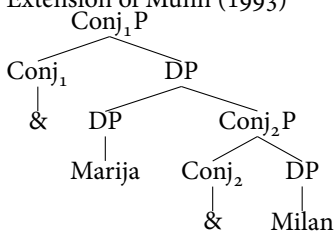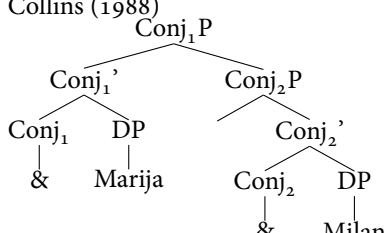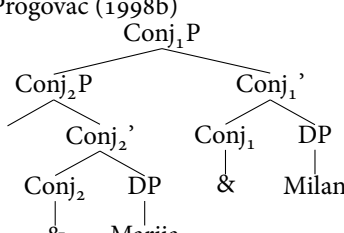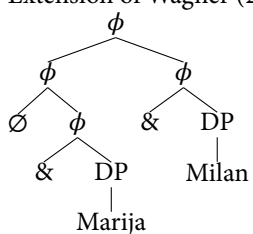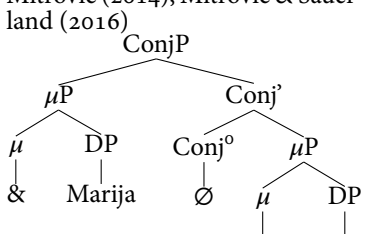
of the coordinator. Distributive binding seems to be dependent on the distributive interpretation of specific coordination markers in subject position which differ across languages (Haslinger & Schmitt 2019, Haslinger et al. 2023).

For example, in English, it is (marginally) possible with the polysyndetic "both-and" construction, as in (9).[2] We return to the English examples in §4.1, where we discuss how Kayne (1994) treats these examples.

(9)   Both Marija$_1$ and Milan$_2$ called their$_{1+2}$ daughter.

1.2 STRUCTURE OF COORDINATION

CDC is a well-known construction and has received several syntactic proposals in the literature. Common to all of the proposals known to us, presented in (10)–(15), is the impossibility of deriving the type of binding shown to exist above.

(10)   Kayne (1994)

(11)   Extension of Munn (1993)

(12)   Collins (1988)

(13)   Progovac (1998b)

(14)   Extension of Wagner (2010)

(15)   Mitrović (2014), Mitrović & Sauerland (2016)

In all of the structures above, neither the first conjunct *Marija* nor the second one *Milan* can c-command out of the complex ConjP, not even if one assumes Kayne's (1994) c-command that allows specifiers to c-command out of phrases in which they are merged. At least one of the two conjuncts is always embedded deep inside the coordination, as at least one of the conjuncts is a complement of the coordinator, which means that it is really unimaginable for it to c-command out. Distributive binding that we have shown to exist in CDC thus presents a problem for the standard (syntactic) approaches to coordination

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[2]Not every English speaker we consulted liked this construction, but the majority did. We are unsure how to treat this variability amongst English speakers.

(or binding).

In this article, we will present the phenomenon of distributive coordination in more detail. We propose that distributed binding is a result of two distinct features. We assume distributed binding is an instance of bound variable binding produced via Quantifier Raising and Predicate Abstraction (Heim & Kratzer 1998), made available by a silent distributive operator, which we call Dist, that is above ConjP and projects a QP. Thus, in the case of CDCs, the QR'd phrase (the entire ConjP) has multiple indices because of the distributor that scopes over it. Due to Predicate Abstraction, these indices are consequently present on the bound element.

In the remainder of the paper, we will first present the empirical range of distributive binding, in §2; in §3 we will show it cannot be reduced to other well-known constructions associated with coordination, and in §4 we will present the analysis that potentially provides a solution to this problem.

2 EMPIRICAL LANDSCAPE

Empirically, aside from reflexive possessive pronouns, the same binding pattern can be also found with regular reflexive pronouns, §2.1, object-bound possessive pronouns, §2.2 and in control constructions, §2.3.

2.1 REGULAR REFLEXIVES

Just like reflexive possessive pronouns, above in (7) and (8), regular reflexive pronouns also take part in distributive binding. When the subject is a regular coordination, the reflexive can only be bound by the entire coordination, as shown in (16-a) and (17-a), but when the subject is a CDC as in (16-b) and (17-b), the sentence gets distributive interpretation and the reflexive pronoun is bound distributively. Unlike in the examples above, the only possible interpretation of CDCs in (16-b) and (17-b) is the one paraphrasable with 'Peter read about himself and Maja read about herself'. The reading where the anaphor gets bound by the entire coordination, is impossible.

(16)　a.　$[\text{Peter}_1 \text{ in Maja}_2]_3$ sta　　brala　o　　sebi$_{*1/*2/*1+2/3}$.　　　　Slo
　　　　　Peter　& Maja　　AUX.DU read.DU about REFL
　　　　　'Peter and Maja read about themselves.'

　　　　b.　$[\text{In Peter}_1 \text{ in Maja}_2]_3$ sta　　brala　o　　sebi$_{*1/*2/1+2/*3}$.　　　Slo
　　　　　& Peter　& Maja　　AUX.DU read.DU about REFL
　　　　　'Both Peter and Maja read about themselves.'

(17)　a.　$[\text{Peter}_1 \text{ i Maja}_2]_3$ čitaa　　za　　sebesi$_{*1/*2/*1+2/3}$.　　　　Mac
　　　　　Petar　& Maja　　read.3.PL about REFL
　　　　　'Peter and Maja read about themselves.'

　　　　b.　$[\text{I Peter}_1 \text{ i Maja}_2]_3$ čitaa　　za　　sebesi$_{*1/*2/1+2/*3}$.　　　Mac
　　　　　& Petar　& Maja　　read.3.PL about REFL
　　　　　'Both Peter and Maja read about themselves.'

2.2 OBJECT–BOUND POSSESSIVE PRONOUNS

Reflexive possessive pronouns in Slovenian and Macedonian (much like in other Slavic languages) are subject-oriented. But binding can also be observed between regular possessive pronouns in the direct object position and the indirect object. Unlike reflexive possessive pronouns which do not agree with the possessor/binder, object-bound possessive pronouns must reflect the ϕ features of their binder, the possessor.

As shown in (18) and (19), while plain coordination only allows binding with the entire conjunction, (18-a) and (19-a), CDC also allows distributive binding with object-bound possessive pronouns, (18-b) and (19-b). Examples (18-a) and (19-a) thus get the reading that Maja introduced Peter and Filip/Črt and Vid to their shared opponent.

In these cases, the opponent is the same person for both Petar and Filip/Črt and Vid. Examples (18-b) and (19-b), on the other hand, get the interpretation that there are two distinct events: one where Maja introduces Petar/Črt to his opponent, and another where Maja introduces Filip/Vid to his opponent (and the two opponents are not one and the same person).

Macedonian and Slovenian differ slightly in how the possessive pronouns behave. Macedonian, like English, uses a plural possessive pronoun to get distributive binding in CDC, (18-b), while Slovenian uses a singular possessive pronoun, as in (19-b).

(18)   Macedonian

    a.   Maja go   pretstavi [na Petar$_1$ i na Filip$_2$]$_3$ nivniot$_{*1+2/3}$ protivnik.
        Maja him introduce to Petar & to Filip   their+the   opponent
        'Maja presented Petar and Filip to their opponent.'

    b.   Maja go   pretstavi [i na Petar$_1$ i na Filip$_2$]$_3$ nivniot$_{1+2/3}$ protivnik.
        Maja him introduce & to Petar & to Filip   their+the   opponent
        'Maja presented both Petar and Filip to their respective opponents.'

(19)   Slovenian

    a.   Maja je   predstavila [Črta$_1$ in Vida$_2$]$_3$ njunemu$_{*1+2/3}$ nasprotniku.
        Maja AUX introduce   Črt.M & Vid.M his   opponent.SG
        'Maja presented Črt and Vid to their opponent.'

    b.   Maja je   predstavila [in Črta$_1$ in Vida$_2$]$_3$ njegovemu$_{1+2/*3}$ nasprotniku.
        Maja AUX introduce   & Črt.M & Vid.M his   opponent.SG
        'Maja presented both Črt and Vid to their respective opponents.'

As gender distinction exists only on singular possessive pronouns, gender is a relevant feature only in Slovenian CDC examples. If the coordinated object has mixed gender conjuncts (one male, one female), then distributive binding is impossible, as the possessive pronoun only matches with one of the conjuncts in all relevant ϕ features. Distributive interpretation remains, and both examples in (20) receive it, but the possessive pronoun can only be interpreted to be bound by one of the two conjuncts, the one with which it matches in gender. The masculine possessive pronoun *njegovemu*, in (20-a), can only be co-indexed with Črt, while the feminine possessive pronoun *njenemu*, in (20-b), can only be co-indexed with Vida.

(20)   a.   Maja je   predstavila [in Črta$_1$ in Vido$_2$]$_3$ njegovemu$_{1/*2/*1+2/*3}$ šefu.
        Maja AUX introduce   & Črt.M & Vida.F his   boss.SG
        'Maja presented both Črt and Vida to his boss.'   Slo

    b.   Maja je   predstavila [in Črta$_1$ in Vido$_2$]$_3$ njenemu$_{*1/2/*1+2/*3}$ šefu.
        Maja AUX introduce   & Črt.M & Vida.F her   boss.SG
        'Maja presented both Črt and Vida to her boss.'   Slo

Similar facts are observable with mixed number conjuncts in (21). The bound possessive pronoun *njihovemu* 'their' in (21) can either be bound by *vodje* 'heads' or by the whole coordination, but not by *dekanjo* 'the dean' (which is singular). (21) can, thereby, either mean that 'Maja presented both the dean and the heads to the heads' secretary' or that 'Maja presented both the dean and the heads to their mutual secretary'.

(21)   Maja je   predstavila [in dekanjo$_1$ in vodje$_2$]$_3$ njihovemu$_{*1/2/*1+2/3}$ tajniku.
      Maja AUX introduce & dean   & heads   their   secretary.SG
      'Maja presented both the dean and the heads to their secretary.'   Slo

2.3 CONTROL

Control is obviously not the same as binding, but it also requires c-command. Interestingly, the same pattern that we have seen so far is also observed in control constructions.

As shown in (22-a), when the subject is a regular conjunction, the interpretation we get is that both conjuncts forgot to do something together, as shown also by the possessive reflexive pronoun in the object position of the nonfinite clause. The reading of (22-a) is thus that Aja and Ana forgot to lock their mutual car. But when the matrix subject is a CDC, distributive interpretation is available, so that the reading we get for (22-b) is that Aja forgot to lock her car and Ana forgot to lock her car.

(22) Slovenian

    a. [Aja$_1$ in Ana$_2$]$_3$ sta pozabili PRO$_{*1+2/3}$ zakleniti svoj$_{*1+2/3}$ avto.
        Aja & Ana AUX.DU forgot lock REFL.POSS car
        'Aja and Ana forgot to lock their car.'

    b. [In Aja$_1$ in Ana$_2$]$_3$ sta pozabili PRO$_{1+2/*3}$ zakleniti svoj$_{1+2/*3}$ avto.
        & Aja & Ana AUX.DU forgot lock REFL.POSS car
        'Both Aja and Ana forgot to lock their respective cars.'

While it is not entirely clear if Macedonian has proper control, as in corresponding constructions embedded clauses are realized with an invariant subjunctive marker *da* and there is full agreement on the embedded verb, the null pronominal in the embedded sentence inherits the distributive nature of its controller and the same pattern emerges, as observed in (23). (23-a) describes a situation where Peter and Marko must pass the same exam (for instance, chemistry), while (23-b) describes a situation where the exam differs for Peter and Marko (e.g. Peter must pass chemistry, while Marko must pass geography). We leave aside the specifics of Macedonian "control" as they are orthogonal to the main point of this paper.

(23) Macedonian

    a. Filip im reče [na Petar$_1$ i Marko$_2$]$_3$ da go položat svojot$_{*1+2/3}$
        Filip them says to Petar & Marko that it pass REFL.POSS+the
        ispit.
        exam
        'Filip told Petar and Marko to pass their exams.'

    b. Filip im reče [i na Petar$_1$ i na Marko$_2$]$_3$ da go položat svojot$_{1+2/*3}$
        Filip them says & to Petar & to Marko that it pass REFL-POSS+the
        ispit.
        exam
        'Filip told both Petar and Marko to pass their exams.'

3 WHAT IT IS NOT

3.1 IT IS NOT CLAUSAL COORDINATION

Aoun et al. (1994) analyzed closest conjunct agreement with preverbal subjects in Arabic as clausal coordination with the subsequent deletion of the repeated material in the first clause, as depicted in the following English example, where the surface order seen in (24-a) is underlyingly proposed to be really (24-b).

(24)   a. Neither Peter nor Mary was coming to the party.
        b. Neither Peter ~~was coming to the party~~ nor Mary was coming to the party.

Partial agreement, that is agreement with a single conjunct rather than with the entire coordination, in their analysis results from regular agreement internal to the two coordinated clauses where the two conjuncts act as regular non-coordinated subjects. But as the repeated part of the first clause is deleted, what we are left with at the surface level is the seeming coordination of two DPs. Because the two subjects are not coordinated (directly) this analysis correctly rules out collective predicates, which are impossible with closest conjunct agreement in Arabic.

At first sight, this seems similar to the general nature of CDC we have observed so far. CDC results in distributive interpretation and disallows collective predicates as discussed by (Kayne 1994, Progovac 1998a,b, 1999). Similarly, the distributive binding we have described so far would follow naturally from clausal coordination construction; inside each conjunct, the anaphor is (properly) bound by the subject, as depicted in examples (25) and (26).

(25)   Macedonian

    a.   I [Filip$_1$ ja   saka   svojata$_1$ kjerka] i [Petar$_2$ ja   saka
        & Filip her love.3SG REFL.POSS+the daughter & Petar her love.3SG
        svojata$_2$ kjerka.]
        REFL.POSS+the daughter
        'Filip loves his daughter and Petar loves his daughter.'

    b.   *I Filip ~~ja saka svojata kjerka~~ i Petar ja saka svojata kjerka.

(26)   Slovenian

    a.   In [Janez$_1$ uživa   v svoji$_1$ knjigi] in [Metka$_2$ uživa   v
        & Janez enjoys.3SG in REFL.POSS book   and Metka enjoys.3SG in
        svoji$_2$ knjigi.]
        REFL.poss book
        'Janez enjoys his book and Metka enjoys her book.'

    b.   *In Janez ~~uživa v svoji knjigi~~ in Metka uživa v svoji knjigi.

But there is also a problem. Examples (25-a) and (26-a) both display singular agreement as the verb agrees inside the two clausal conjuncts in singular with the singular subject. Consequently, applying clausal ellipsis to one of the two conjuncts should also result in the surviving verb carrying singular agreement. But agreement on the verb in CDC in all of the previous examples, is always plural in Macedonian, as in (7) above, repeated here as (27), and dual in Slovenian, as in (8) above, repeated here as (28). Singular agreement on the verb in these same sentences is ungrammatical, as shown in (29) and (30). Partial conjunct agreement with number is simply not allowed in Macedonian and Slovenian (cf. Marušič et al. 2015).

(27)   [I Marija$_1$ i Milan$_2$]$_3$ ja   povikaa svojata$_{1+2/3}$ kjerka.   Mac
       & Marija & Milan   her called.PL REFL.POSS+the daughter.SG
       'Both Marija and Milan called their respective daughters.'   rep. from (7)

(28)   [In Peter$_1$ in Milan$_2$]$_3$ sta   poklicala svojo$_{1+2/*3}$ hčerko.   Slo
       & Peter & Milan   AUX called.DU REFL.POSS daughter.SG
       'Both Peter and Milan called their respective daughters.'   rep. from (8)

(29)   *[I Marija$_1$ i Milan$_2$]$_3$ ja   povika   svojata$_{1+2/3}$ kjerka.   Mac
       & Marija & Milan   her called.SG REFL.POSS+the daughter.SG
       intended: 'Both Marija and Milan called their respective daughters.'

(30)   *[In Peter$_1$ in Milan$_2$]$_3$ je   poklical svojo$_{1+2/3}$ hčerko.   Slo
       & Peter & Milan   AUX.SG called.SG REFL.POSS daughter.SG
       intended: 'Both Peter and Milan called their respective daughters.'

As a further contrast, using plural (in Macedonian) or dual (in Slovenian) agreement with clausal coordination also results in ungrammatical sentences, as shown in (31-a) and (31-b) respectively.

(31)   a.   *I [Filip$_1$ ja   sakaat   svojata$_1$ kjerka,] i [Petar$_2$ ja   sakaat
        & Filip her love.3.PL REFL.POSS+the daughter and Petar her love.3.PL
        svojata$_2$ kjerka.]   Mac
        REFL.POSS+the daughter.
        intended: 'Filip loves his daughter and Petar loves his daughter.'

b.   *In [Janez$_1$ uživata   v svoji$_1$ knjigi] in [Metka$_2$ uživata   v
& Janez enjoys.3.DU in REFL.POSS book   and Metka enjoys.3.DU in
svoji$_2$ knjigi.]   Slo
REFL.POSS book
intended: 'Janez enjoys his book and Metka enjoys her book.'

Note that agreement on the verb is not just in number but also in person, as shown in examples (32-a) and (32-b). This pattern suggests that the alternative – that this agreement results from two separate Agree operations somehow coalescing into a singular agreement morpheme following the presumed partial ellipsis – is untenable.[3]

(32)   a.   [I jas$_1$ i ti$_2$]$_3$ go vozime svojot$_{1+2/*3}$ tochak.   Mac
&I   & you   it ride.1.PL REFL.POSS+the bike.SG
'Both I and you ride our bikes.'
b.   [In jaz$_1$ in ti$_2$]$_3$ voziva   svoje$_{1+2/*3}$ kolo.   Slo
&I   & you   drive.1.DU REFL.POSS bike.SG
'Both I and you ride our bikes.'

3.1.1 ON THE TWO COORDINATORS "…A …" & "I …, A I …"

There exists another argument against the clausal coordination analysis that we are aware of. Macedonian uses two different coordinators for clauses. One can either use conjunction doubling, as in (25) above, or the conjunctive particle *a* 'and', which is used together with conjunction doubling. The clausal coordinator *a* can also be used in CDC, but then, interestingly, the verb shows up with singular agreement, as in (33-a). This suggests that unlike in the CDC cases we have seen so far which all had plural agreement on the verb, (33-a) can be analyzed to involve clausal coordination with subsequent partial deletion, as sketched in (33-b) and (33-c).[4]

(33)   a.   [I Filip$_1$, a i Petar$_2$] ja saka   svojata$_{1+2}$ kjerka.   Mac
& Filip   but & Petar   her love.3SG REFL.POSS+the daughter
'Both Filip and Petar love their daughters.'
b.   [I Filip$_1$ ja saka   svojata$_1$ kjerka,] a [i Petar$_2$ ja saka
& Filip   her love.3SG REFL.POSS+the daughter but   & Petar   her love.3SG
svojata$_2$ kjerka.]   Mac
REFL.POSS+the daughter
'Filip loves his daughter and Petar loves his daughter.'
c.   [I Filip ~~ja saka svojata kjerka,~~] a [i Petar ja saka svojata kjerka.]

3.1.2 POSTVERBAL SUBJECTS

Partial conjunct agreement also affects prosody, as it necessitates rising intonation on the second conjunct.

In sentences with postverbal subjects, a pattern of partial conjunct agreement emerges in CDCs. As shown in (34-b) and (35-b) the verb agrees in singular with only one conjunct and not in plural with the entire coordination as is the case with preverbal

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[3]Lower down in §3.3 we present the so-called summative or cumulative agreement, which is at least at first sight exactly this.

[4]There is a great degree of speaker variability regarding these constructions, as some speakers only accept them if the verb has plural agreement as in (i).

(i)   [I Filip$_1$, a i Petar$_2$] ja sakaat svojata$_{1+2}$ kjerka.   Mac
& Filip   but & Petar   her love.3PL REFL.POSS+the daughter
'Both Filip and Petar love their daughters.'

While this variability is interesting, it is outside of the scope of our work and we leave it for future research.

coordinated subjects. This exception otherwise does not occur with simplex coordination (preverbal or postverbal) of singular conjuncts in either Macedonian or Slovenian.[5]

(34) a. Dojdoa   i Marija i Petar.   Mac
           Came.3.PL & Marija & Petar
           'Both Marija and Petar came.'
      b. Dojde   i Marija i Petar.   Mac
           Came.3SG & Marija & Petar
           'Both Marija and Petar came.'

(35) a. Včeraj   sta   prišla in Peter in Marko.   Slo
           yesterday AUX.DU came & Peter & Marko
           'Both Peter and Marko came yesterday.'
      b. Včeraj   je   prišel in Peter in Marko.   Slo
           yesterday AUX.SG came & Peter & Marko
           'Both Peter and Marko came yesterday.'

Just like all other CDC examples, these examples are also ungrammatical with collective predicates, which is compatible with them being derived from clausal coordination, as in (36). This unacceptability is due to the fact that collective predicates require semantically plural arguments.

(36) a. *Se   sretna   i Filip i Marko.   Mac
           REFL.CL meet.3SG & Filip & Marko
           intended: 'Filip and Marko meet.'
      b. *Sreča   se   in Filip in Marko.   Slo
           meet.3SG REFL & Filip & Marko
           intended: 'Filip and Marko meet.'

Cross-linguistically, there is a tendency for partial conjunct agreement to occur more frequently with postverbal subjects (cf. Corbett 1983) so this is not unprecedented or unexpected, but here too there's an insuperable problem to explain these facts with clausal coordination alone. If examples (34-b) and (35-b) were derived from clausal conjunction, the first coordinator should appear at the beginning of the sentence, as it should introduce the first clause and not immediately precede the first noun conjunct. But placing the first coordinator at the beginning of the sentence makes these examples unacceptable, as in (37).

(37) a. *I dojde   Marija i Petar.   Mac
           & came.3SG Marija & Petar
           intended: 'Both Marija and Petar came.'
      b. *In je   včeraj   prišel Peter in Marko.   Slo
           & AUX.SG yesterday came Peter & Marko
           intended: 'Both Peter and Marko came yesterday.'

Note that the word order alone has no effect on the availability of distributive binding. Just like with preverbal subjects, distributive binding is available also with postverbal subjects, as in (38). Both the Macedonian (38-a) and the Slovenian (38-b) get the distributive interpretation according to which each of the two individual conjuncts has his own car that he loves to drive (there are two (different) cars in question).

(38) a. Svojata$_{1+2/?3}$ kola sakaat da ja vozat   [i Marko$_1$ i Martin$_2$]$_3$.
           REFL.POSS+the car   like.3PL to it drive.3PL. & Marko & Martin
           'Both Marko and Martin like to drive their cars.'   Mac

---

[5]Macedonian examples like (34-b) furthermore necessitate rising intonation on the second conjunct, which potentially suggests that prosody somehow saves these sentences from unacceptability. We have nothing to say on this, but speculate that if this was an instance of clausal coordination and partial ellipsis, we would not expect to find any such effect.

    b.   Svoj$_{1+2/*?3}$ avto rada   vozita   [in Marko$_1$ in Martin$_2$]$_3$.
       REFL.POSS car like.DU drive.DU & Marko & Martin
       'Both Marko and Martin like to drive their cars.'   Slo
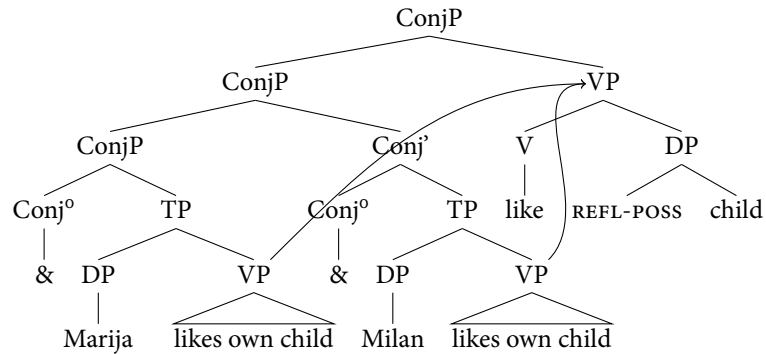
3.2 NOT RIGHT-NODE RAISING

A very similar syntactic alternative to explain distributive binding would be to say our core examples are derived via right-node raising. Obviously, this is a possible explanation only for the sentences with preverbal subjects, but not for instances of distributive binding that is observed when the subject is postverbal, cf. (38) above.

    Right-node raising has been shown to behave similarly to our core examples above when it comes to binding. (39) shows that the reflexive pronoun in the object position can be bound by both subjects at the same time (cf. Levine 1985). This is obviously not unexpected as Right-node raising is always analyzed as involving two clauses inside which binding between the anaphor in the object position and the subject is expected.

(39)   Terry liked$_i$ ___, and Leslie$_j$ disliked ___,a picture of herself$_{i/j}$ on the wall.

                                            (Citko 2017: (39))

Right-node raising has received a number of competing analyses (see Citko 2017:for discussion and references), which we do not intend to discuss in detail. The most prominent analyses are the ellipsis account, which is for the purposes of this discussion basically the clausal coordination analysis discussed in §3.1, the (ATB) movement account, depicted in (40), and the multidominance account, which we will discuss in the next section, §3.3.

    (40)

Just like clausal coordination, the Right-node raising account also predicts we should find singular agreement on the verb, given that inside each clausal conjunct the verb agrees with the subject in singular. Examples (41) and (42), which seem like typical Right-node raising examples, show that singular agreement on the verb is the only option in Right-node raising constructions. As Right-node raising involves two clauses, it is not unexpected that they also allow "distributive" binding (signaled by the index '1+2') even though there is no conjunction doubling in them.

(41)   Macedonian
      a.   Petar včera,   a   Slavko deneska ja ispra   svojata$_{1+2/*3}$ kola.
          Petar yesterday, but Slavko today   it washed.3SG REFL.POSS+the car
          'Peter yesterday while Slavko washed his car today.'
      b.   *Petar včera,   a   Slavko deneska ja ispraa   svojata$_{1+2/*3}$ kola.
          Petar yesterday, but Slavko today   it washed.3.PL REFL.POSS+the car
          intended: 'Peter yesterday while Slavko washed his car today.'

(42) Slovenian

    a. Peter$_1$ je   včeraj,   Slavko$_2$ pa danes opral   svoj$_{1+2/*3}$ avto.
          Peter AUX.SG yesterday Slavko PRT today wash.SG REFL.POSS car
          'Peter yesterday while Slavko today washed his car.'

    b. *Peter$_1$ sta   včeraj,   Slavko$_2$ pa danes oprala   svoj$_{1+2/*3}$ avto.
          Peter AUX.DU yesterday Slavko PRT today wash.DU REFL.POSS car
          intended: 'Peter yesterday while Slavko today washed his car.'

As we have discussed above in §3.1, the CDC examples we have discussed so far all involved plural/dual agreement on the verb, thus right-node raising can be discarded as a possible syntactic explanation for the same reasons clausal coordination was rejected. As already discussed, clausal coordination and Right-node raising are both tools used to describe comparable phenomena.
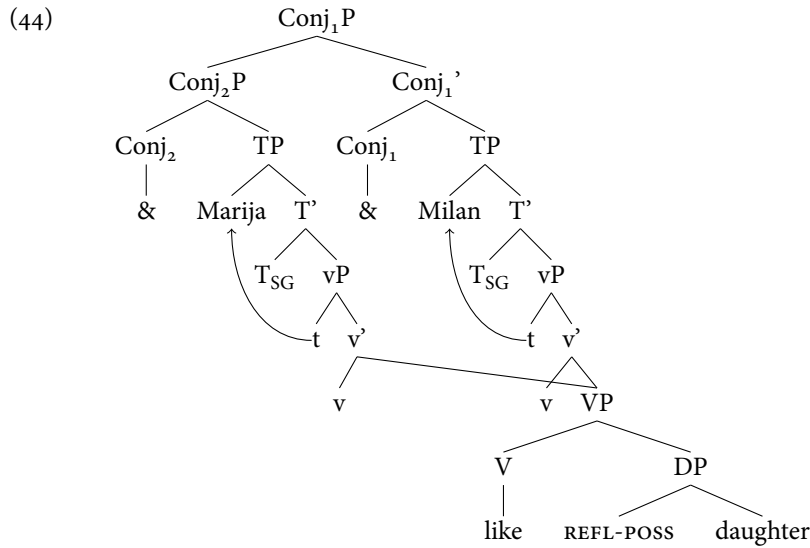
3.3 MULTIDOMINANCE

In the previous section, we rejected the possibility that CDCs involve right-node raising as the agreement on the verb is plural, and not the expected singular. Some CDC examples, like (43), seem to contain a richer structure than what we have assumed so far; these sentences display plural agreement and also include two adverbs which modify the two events of washing done by the two distinct agents.

(43)   I Petar$_1$ včera   i Marija$_2$ deneska ja ispraa   svojata$_{1+2/*3}$ kola.
       & Petar yesterday & Marija today   it washed.3.PL REFL-POSS+the car.
       'Both Peter yesterday and Marija today washed their cars.'   Mac

At least in these cases, the subject seems to be more than just the ConjP with a doubled coordinator, but as Right-node raising on the account explained above leads to singular agreement on the verb, examples like (43) seem hard to explain.

We named multidominance as one of the three main analyses of right-node raising phenomena, which seem at least superficially related to the facts we have observed in CDC. In multidominance approaches (e.g. Citko 2005, 2011) part of the structure is literally shared between the two clauses through a multiply dominated node. In the tree in (44), this is the VP node which is merged parallelly with two *v* heads that introduce two events. The way the structure is given in (44), agreement on the verb is predicted to be singular, as each of the two TPs agrees with the subject within its own clause, so in principle we end up with the same problem we encountered in §3.1 and §3.2.

(44)

```
                        Conj₁P
                  ┌───────┴───────┐
              Conj₂P             Conj₁'
           ┌────┴────┐        ┌────┴────┐
         Conj₂      TP      Conj₁      TP
          │      ┌───┴──┐    │      ┌───┴──┐
          &   Marija   T'    &   Milan    T'
                    ┌────┴──┐      ┌────┴──┐
                  T_SG      vP   T_SG      vP
                          ┌──┴──┐        ┌──┴──┐
                          t     v'       t     v'
                              ┌──┴────────────┴──┐
                              v                 v   VP
                                              ┌───┴───┐
                                              V       DP
                                              │    ┌───┴────┐
                                            like  REFL-POSS daughter
```

But multidominance offers another possibility. Grosz (2015) discusses English examples like (45), which display plural agreement despite having only singular subjects in the two coordinated clauses.

(45)   Sue's proud that Bill_SG ___, and Mary's glad that John_SG ___, have_PL/?*has_SG traveled to Cameroon.   (Grosz 2015:6)

Grosz (2015) claims this is the result of a single head T being shared between the two conjuncts and undergoing Multiple Agree (Hiraiwa 2001) with two singular DP subjects simultaneously. This gives rise to cumulative agreement, which he terms "summative" agreement, as sketched in (46).

(46)

```
                        Conj₁P
                  ┌───────┴───────┐
              Conj₂P             Conj₁'
           ┌────┴────┐        ┌────┴────┐
         Conj₂      TP      Conj₁      TP
          │      ┌───┴──┐    │      ┌───┴──┐
          &   Marija   T'    &   Milan    T'
                      ┌─┴──┐        ┌──┴──┐
                     vP           T_DU/PL  vP
                   ┌──┴──┐              ┌──┴──┐
                   t     v'            t     v'
                       ┌──┴────────────────┴──┐
                       v                     v   VP
                                           ┌───┴───┐
                                           V       DP
                                           │    ┌───┴────┐
                                         like  REFL-POSS daughter
```
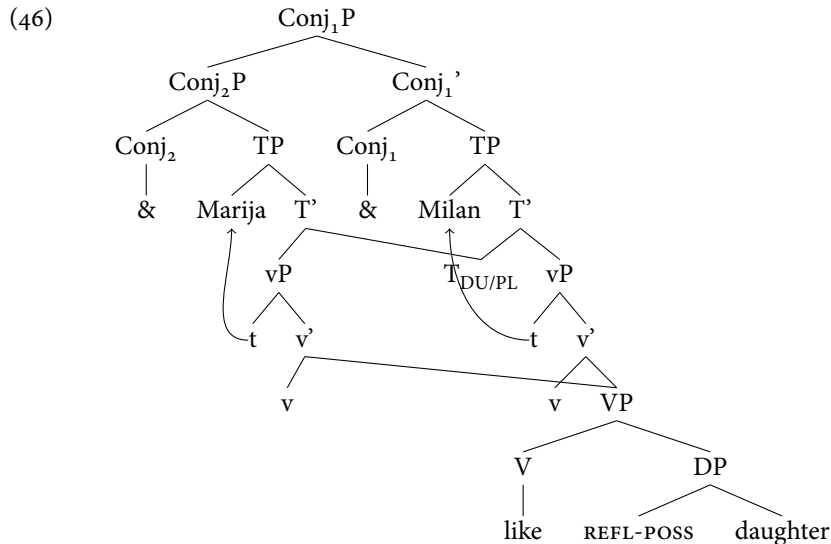
Following this approach, distributive binding falls out naturally, given that each individual conjunct c-commands the reflexive pronoun. Similarly, the distributivity that we observed was one of the typical properties of CDC seems to follow from the existence of two distinct *v* heads in the structure, each introducing an event variable and separate thematic structures.

Note that Multidominance can also handle CDCs where conjunction doubling does

not occur with the subject. (47) gives the structure for the examples with object-bound possessive pronouns.

(47)
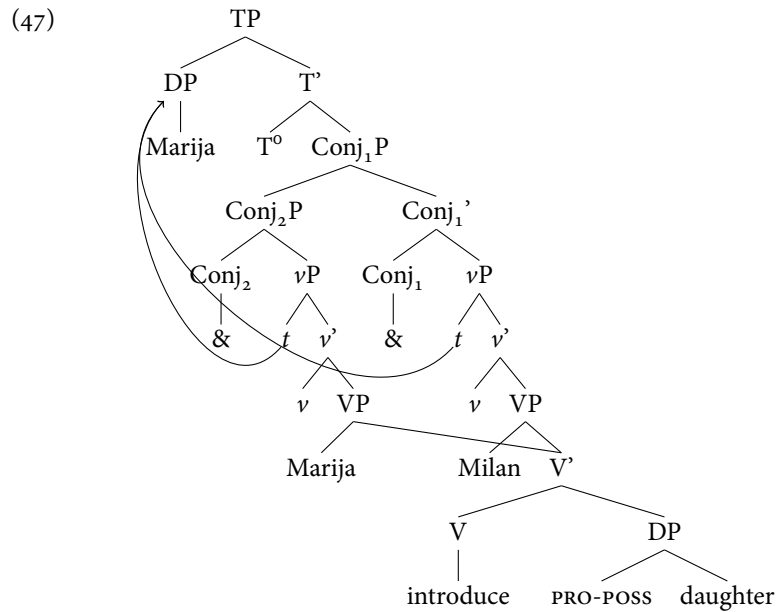
But there is also a problem. As we showed here, multidominance can easily explain distributive binding. But as we have explained above, distributive binding only exists in CDC, not in regular coordination constructions. So we would need to limit multidominance to only exist in CDC but not in regular coordinations, which is a problem we have no idea how to approach at this point, so we leave multidominance aside (for future research).

4 PROPOSAL

4.1 PARALLELISM BOTH-AND – AND-AND

As mentioned in section §1.1, CDCs were argued to bring about distributivity by Kayne (1994) and Progovac (1998a, 1999), who both treated them as parallel to "both-and" constructions. The "both-and" construction in English and CDCs disallow collective predicates, which are allowed with simplex coordination, as shown in (48-a), (49-a), (50-a), and (51-a), and only allow distributive interpretation, as illustrated in (48-b), (49-b), (50-b), and (51-b).

(48) a. John and Bill collided.   (Kayne 1994: p.63, (31))
      b. *Both John and Bill collided.   (Kayne 1994: p.66, (51))

(49) a. Ciril in Metod sta   prišla skupaj.   Slo
          Ciril & Metod AUX.DU came together
          'Ciril and Metod came together.'
      b. *In Ciril in Metod sta   prišla skupaj.   Slo
          & Ciril & Metod AUX.DU came together
          Intended: 'Ciril and Metod came together.'

(50) a. Marija i Petar su   oprali sudove. (can imply 'together')   BCMS
          Mary   & Petar AUX.PL washed dishes
          'Mary and Petar washed the dishes.'   (Progovac 1998a: (25)–(26))

b. I Marija in Petar su   oprali   sudove. (each, cannot imply 'together')
& Mary   & Petar AUX.PL washed dishes
'Both Mary and Petar washed the dishes.'   (Progovac 1998a: (23)–(24))

(51)   a.   Kiril i Metodij dojdoa   zaedno.   Mac
Kiril & Metodij came3.PL together.
'Kiril and Metodij came together.'
b.   *I Kiril i Metodij dojdoa   zaedno.   Mac
& Kiril & Metodij came3.PL together.
Intended: 'Kiril and Metodij came together.'

However, Kayne (1994) and Progovac (1998a) offer different explanations why this is so. Progovac (1998a, 1999) argues that the English *both* is actually the first coordinator in "both-and" constructions and is thus equivalent to the first conjunction in CDCs, structurally sitting in the head of the first ConjP as illustrated in (52).

(52)   Progovac (1998b, 1999)
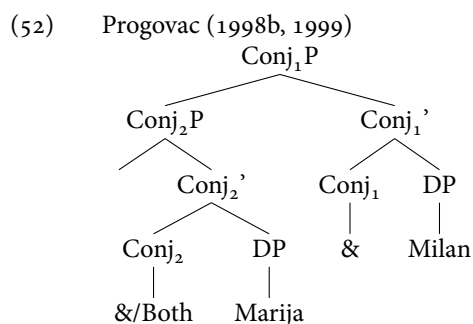
Furthermore Progovac (1998a, 1999) offers a classification of two distinct patterns of conjunction repetition cross-linguistically, both receiving a distributive reading. One is found in English, where conjunction appears in front of all conjuncts except the first one, as in example (53-a), which Progovac (1998b, 1999) terms conjunction repetition. The other one is found in Slavic languages, as in the Macedonian example (53-b), which Progovac (1998b, 1999) terms conjunction doubling. In such languages conjunction is repeated in front of every conjunct.

(53)   a.   Mary and John and Peter brought a bottle of wine.
b.   I Marko i Petar i Marija donesoa   vino.   Mac
& Marko & Petar & Marija brought.3.PL wine.
'Marko, Petar, and Marija each brought a bottle of wine.'

The shared pattern in all these examples is the use of multiple conjunction markers when only one is necessary. Progovac (1999) treats this as a violation of economy, which results in the distributive reading associated with conjunction doubling and repetition.

Kayne (1994) also treats *both* and the first conjunction in CDCs as equivalent, but for him they are both distributors, not coordinators. As such, *both* and the first conjunct in CDCs scope over the full coordination, which is why the sentence receives the observed distributive reading.

Neither Kayne (1994) nor Progovac (1998a,b, 1999) mention binding, and neither proposal can (easily) account for the observed distributive binding found in our examples, as we have explained above.

4.2 DISTRIBUTIVITY

Haslinger & Schmitt (2019), Haslinger et al. (2023) discuss the differences between distributive and cumulative interpretation of coordination. As they show, the distinction is not always linked to a structural difference but sometimes just to the identity of the

coordinator. They build on the syntactic structure proposed by Mitrović (2014), Mitrović & Sauerland (2016) and assume it is shared by all types of coordinators.

Distributivity does not always come from a CDC in the subject position. An overt distributor somewhere else in the sentence can likewise make the coordination and the entire sentence be interpreted distributively as in examples (54) and (55).[6]

(54) a. [Peter$_1$ in Maja$_2$]$_3$ sta   kupila (vsak) po eno kolo.   Slo
          Peter & Maja   AUX.DU bought each PRT one bike
          'Peter and Maja bought one bike each.'
      b. [Peter$_1$ in Maja$_2$]$_3$ sta   kupila vsak eno kolo.   Slo
          Peter & Maja   AUX.DU bought each one bike
          'Peter and Maja bought one bike each.'

(55) [Petar$_1$ i Maja$_2$]$_3$ kupija   po eden tochak.   Mac
      Petar & Maja   bought3.PL PRT one bike
      'Petar and Maja bought one bike each.'

This behaviour extends to binding. Distributive binding is available with plain coordination as long as there is a distributor in the sentence, as in (56). Similarly a comparable example in English that presumably involves quantifier stranding is also available, (57).[7]

(56) [Peter$_1$ in Maja$_2$]$_3$ sta   peljala vsak svoje$_{1+2/*3}$ kolo.   Slo
      Peter & Maja   AUX.DU rode   each REFL-POSS bike
      'Peter and Maja each rode their bike.'

(57) [Peter$_1$ and Maya$_2$]$_3$ both rode their$_{1+2/*3}$ bike.

We want to suggest that the distributive binding found in e.g. (7) and (8) is identical to (56) and is a result of a bound variable binding that is made possible by a distributor. In (56) the distributor is overt, while in examples like (7), (8) and other similar cases, the distributor is silent. Without going into too much detail, we suggest this distributor, which we simply call DIST, sits in a QP above the ConjP.

(58)
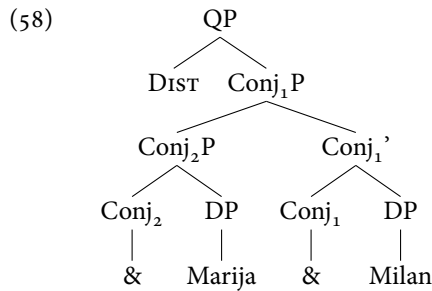
Of the several options for coordination we adopt Progovac (1998b), but only for conjunction doubling. As shown in (59-a) the first conjunct c-commands the second conjunct in regular coordinations), but this does not seem to be the case in CDCs, (59-b).

(59) a. every$_1$ child & his$_1$ mom
      b. *&/both every$_1$ child & his$_{*1}$ mom

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[6]We do not give an example with a stranded quantifier in Macedonian, as quantifier stranding is generally disallowed in Macedonian.

[7]Even though (56) could in principle involve quantifier stranding, we do not want to suggest that, given that the version of (56) in which the supposedly stranded quantifier isn't stranded isn't grammatical:

(i)   *Vsak Peter in Maja sta   peljala svoje   kolo.   Slo
      each Peter and Maja AUX.DU rode   REFL-POSS bike
      intended: 'Both Peter and Maja rode their bike.'

According to our proposal, the distributive binding that appeared to be so surprising is thus really just bound variable binding that also exists in cases like (60) and (61), except that in our case there is no overt quantifier to bind the variable.

(60)   [Vsi kolesarji]$_i$ pazijo   na svoje$_i$ kolo.   Slo
          all   cyclists   look-after on REFL-POSS bike
        'All cyclists look after their bike.'

(61)   [Site   velosipedisti]$_i$ go pazat   svojot$_i$ točak.   Mac
          all+the cyclists   it look-after REFL-POSS+the bicycle
        'All cyclist look after their bike.'

If this is so, we expect to find quantifier scope ambiguities in CDCs when there is a second quantified phrase. This prediction is borne out, as shown in the Slovenian examples (62).[8] While (62-a) is unambiguous, having only the surface order interpretation according to which the same girl saw Vid and Črt, (62-b) is ambiguous, it can either mean that the same girl saw Vid and Črt or that Vid was seen by one girl and Črt was seen by another non-identical girl. If we assume there is a covert universal quantifier in CDC, this ambiguity can be easily explained as scope ambiguity of the two quantifiers at LF: the subject scopes over the direct object in the first scenario, while the direct object scopes over the subject in the second one.

(62)   a.   Ena punca je   videla Vida in Črta.   Slo
              one girl   AUX saw   Vid & Črt
              'One girl saw Vid and Črt.' 1 > V&Č // *V&Č > 1
        b.   Ena punca je   videla in Vida in Črta.   Slo
              one girl   AUX saw   & Vid & Črt
              'One girl saw both Vid and Črt.' 1 > V&Č // V&Č > 1

Our proposal differs from Progovac (1998a, 1999), and Kayne (1994), in both the syntactic structure of CDCs and in what is the source of distributivity associated with them. Unlike Progovac (1998a, 1999), the number of conjunction markers does not play a role and "both/DIST" is not the first conjunction of a CDC, but a quantifier that hosts its own projection and brings about distributivity. Contrary to Kayne (1994), the syntactic structure is enriched with a silent QP, which sits above the ConjP, and its head is responsible for the distributive reading found with CDCs.

Regarding the exact details of how Quantifier Raising [QR] derives binding in CDCs, we adopt Heim & Kratzer's (1998) binding procedure. When QR applies, it adjoins the moved phrase to the sentence node and in doing so, leaves behind a trace of the phrase in its original position and adjoins a variable binder index right below the moved phrase. The same index is present on the anaphor, whose denotation is assigned through Predicate Abstraction and the Pronoun And Traces Rule (see Heim & Kratzer 1998 for details).

In the case of CDCs, the QR'd phrase (which is the entire coordination) has multiple indices because of the distributor which scopes over the ConjP.

5 CONCLUSION

This paper is in principle an elaborated observation. We discuss distributive binding, an apparently problematic instance of binding that is observed in CDC. Distributive binding seems problematic from a purely syntactic approach to binding, since neither of the two conjuncts which should both individually bind the anaphor (given the interpretation of the relevant CDC examples) c-commands the anaphor. This phenomenon cannot be explained away as an instance of clausal coordination (either through partial ellipsis

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[8]We do not provide Macedonian examples of such cases, as Macedonian is a surface scope language.

or Right-node raising), as verb agreement clearly suggests coordination is done inside the subject. We pointed to multidominance as a promising tool to derive the facts, but ultimately concluded the observed phenomenon is surprising only apparently/on the surface. We argue distributive binding is really just variable binding without an overt distributor/quantifier, which we placed in a QP dominating the ConjP of the entire coordination.

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ABBREVIATIONS

1	first person	Mac	Macedonian
3	third person	M	masculine
AUX	auxilliary	PL	plural
BCMS	Bosnian/Croatian/Montenegrin/-Serbian	POSS	possessive
		PRT	particle
CDC	Conjunction doubling construction	QR	quantifier raising
CL	clitic	REFL	reflexive
DU	dual	SG	singular
F	feminine	Slo	Slovenian

REFERENCES

Aoun, Joseph, Ellabas Benmamoun & Dominique Sportiche. 1994. Agreement, word order, and conjunction in some varieties of Arabic. *Linguistic inquiry* 25(2). 195–220.

Chomsky, Noam. 1981. *Lectures on government and binding.* Dordrech: Foris.

Citko, Barbara. 2005. On the nature of merge: External merge, internal merge, and parallel merge. *Linguistic inquiry* 36. 475–497.

Citko, Barbara. 2011. Multidominance. In Cedric Boeckx (ed.), *The Oxford handbook of linguistic minimalism*, 119–142. Oxford: Oxford University Press.

Citko, Barbara. 2017. Right node raising. In Martin Everaert & Henk C. van Riemsdijk (eds.), *The Wiley Blackwell companion to syntax, second edition*, 1–33. Hoboken: John Wiley & Sons, Ltd. https://onlinelibrary.wiley.com/doi/abs/10.1002/9781118358733.wbsyncom020.

Collins, Chris. 1988. Conjunction adverbs. Unpublished manuscript, MIT.

Corbett, Greville. 1983. *Hierarchies, targets and controllers: Agreement patterns in Slavic.* London: Croom Helm.

Grosz, Patrick Georg. 2015. Movement and agreement in right-node-raising constructions. *Syntax* 18(1). 1–38.

Haslinger, Nina, Valentin Panzirsch, Eva Rosina, Magdalena Roszkowski, Viola Schmitt & Valerie Wurm. 2023. A plural analysis of distributive conjunctions: Evidence from two cross-linguistic asymmetries. Ms. University of Vienna.

Haslinger, Nina & Viola Schmitt. 2019. Asymmetrically distributive items and plural projection. Ms., University of Vienna. https://www.univie.ac.at/konjunktion/texts.html.

Heim, Irene & Angelika Kratzer. 1998. *Semantics in Generative Grammar*. Malden, MA and Oxford: Blackwell.

Hiraiwa, Ken. 2001. Multiple agree and the defective intervention constraint in Japanese. *MIT working papers in linguistics* 40. 67–80.

Kayne, Richard S. 1994. *The antisymmetry of syntax*. Cambridge, MA: MIT Press.

Levine, Robert D. 1985. Right node (non-)raising. *Linguistic inquiry* 16(3). 492–497.

Marušič, Franc, Petra Mišmaš, Vesna Plesničar, Tina Razboršek & Tina Šuligoj. 2015. On a potential counter-example to Merchant's Sluicing-COMP generalization. *Grazer linguistische Studien* 83(1). 47–65. http://unipub.uni-graz.at/gls/periodical/title-info/1283369.

Mitrović, Moreno. 2014. *Morphosyntactic atoms of propositional logic: A philo-logical programme*. Cambridge: University of Cambridge dissertation.

Mitrović, Moreno & Uli Sauerland. 2016. Two conjunctions are better than one. *Acta linguistica Hungarica* 63(4). 471–494.

Munn, Alan. 1993. *Topics in the syntax and semantics of coordinate structures*: University of Maryland, College Park dissertation.

Progovac, Ljiljana. 1998a. Conjunction doubling and 'Avoid Conjunction' principle. In Mila Dimitrova-Vulchanova & L. Hellan (eds.), *Topics in South Slavic syntax and semantics*, 25–41. Amsterdam: Benjamins.

Progovac, Ljiljana. 1998b. Structure for coordination. Part I and Part II. *Glot* 3(7 & 8). 3–6/3–9.

Progovac, Ljiljana. 1999. Events and economy of coordination. *Syntax* 2(2). 141–159.

Wagner, Michael. 2010. Prosody and recursion in coordinate structures and beyond. *Natural language and linguistic theory* 28(1). 183–237.