On the Coordinate Structure Constraint and Labeling

Željko Bošković

The Coordinate Structure Constraint (CSC) is still awaiting a principled account. Traditionally, it was assumed to have two parts, one banning extraction of conjuncts and the other out of conjuncts. It has, however, been shown that the two should be divorced, the main argument being that there are languages that are sensitive to only one part of the CSC (Oda 2017). I will focus on (1), illustrated by (2).

(1) Extraction out of conjuncts is disallowed (CSC).
(2) *Who$_i$ did you see [enemies of t$_i$] and John?

The CSC is inextricably tied to the across-the-board-movement (ATB) exception: Extraction is possible if it occurs from each conjunct (3). ATB is what makes accounting for the CSC particularly difficult. In typical accounts of islands islandhood is cumulative. Assuming that conjuncts are islands, (3) should be twice as bad (2) since it involves two extractions out of an island, while (2) involves one.

(3) Who$_i$ did you see [friends of t$_i$] and [enemies of t$_i$]?

This paper will propose a deduction of (1) that captures the ATB exception but also allows non-ATB extraction from conjuncts in well-defined contexts, which will be shown to indeed be possible with a variety of constructions, namely left-branch extraction in Serbo-Croatian, *r*-pronouns in Dutch, V-2 movement in German, clitic doubling in Dutch and Romance, quantifier-float in Japanese, article-incorporation in Galician, and object shift in English. Based on these cases the paper will show that the CSC holds only for successive-cyclic movement, as in *Who$_i$ did you see [t$_i$ friends of t$_i$] and Sue*: elements that are base-generated at the edge of a conjunct, or move there independently of successive-cyclic movement, can extract. The paper will also shed light on the nature of the ban on local wh-movement from SpecTP to SpecCP. I will first give the ingredients of the account to be proposed.

1. Phases, labels, and Coordination of Likes

The first ingredient is the phase theory, in particular, the PIC, which forces movement to proceed via phase edges. I also assume that conjuncts are phases, an assumption that will be deduced below.

The second ingredient is the well-known Coordination-of-Likes requirement (CL), which requires conjuncts to be parallel in their categorial status (Chomsky 1957, Williams 1978, Sag et al 1985, Bowers 1993, Beavers and Sag 2004, Chaves 2006, among many others).[1]

The last ingredient is Chomsky's (2013) system, which allows unlabeled objects during the derivation. Chomsky proposes an algorithm where when a head and a phrase merge, the head projects (providing the label for the resulting object). When two phrases merge, there are two ways to label: through feature-sharing or traces, traces being ignored for labeling. (4) illustrates the former: when *which book* merges with interrogative CP, they both have the Q-feature; what is projected (determining the label of the resulting object) is the Q-feature. (This is reminiscent of Spec-Head agreement.)

(4) I wonder [$_{CP}$ which book$_i$ [$_{C'}$ C [John bought t$_i$]]].

As for phrase-phrase merger without feature-sharing, Chomsky (2013) assumes that successive-cyclic movement does not involve feature-sharing (which follows Bošković 1997, 2002, 2007). There

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[*]University of Connecticut, zeljko.boskovic@uconn.edu.
[1]The references also explain away a number of reported counterexamples to CL. Sag et al (1985) is an important predecessor of this work since it also relies on CL (see also Takahashi 1994). However, the current analysis predicts extraction from conjuncts to be possible in a number of contexts, none of which are allowed by Sag et al.

is then no feature-sharing between *that* and the wh-phrase which passes through its edge in (5a), hence the embedded clause cannot be labeled when *what* moves to its edge (as indicated by ? in (5b)). When v is merged, *what* moves. The element merged with *that*-CP being a trace, it is ignored for labeling, hence ? is labeled as CP after *what* moves. The account is extended to all successive-cyclic movement.

(5) a. What$_i$ do you think [$_{CP}$ t'$_i$ [$_{C'}$ that [he bought t$_i$]]]?   b. v [$_{VP}$ think [$_?$ what [$_{CP}$ that [he bought t$_i$]]]]

2. Deducing the CSC

I will now show that the above mechanisms quite straightforwardly deduce the CSC. Consider (6).

(6) *Who$_i$ did you see [enemies of t$_i$] and John?

Movement from the conjunct must proceed successive-cyclically through the conjunct edge. This movement, which involves merger of *who* and the conjunct DP, yields an unlabeled object (see (7)), as is always the case with successive-cyclic movement. Importantly, as a result of the movement, the conjuncts differ in their categorial status: the second conjunct is a DP while the first one is ? (it is un-labeled). (7) is then ruled out by CL, which requires conjuncts to be parallel in their categorial status (I assume CL applies when ConjP is formed, hence it's not affected by later movement outside of ConjP).

(7) [$_{ConjP}$ [$_?$ who$_i$ [$_{DP}$ enemies of t$_i$]] and [$_{DP}$ John]]

The crucial ingredient of the account is that successive-cyclic movement changes the category of the element it targets in the labeling framework, which induces a violation of CL in (7).
The phasal/labeling system does not only deduce the CSC, but also captures the ATB exception. Successive-cyclic movement takes place to the edge of both conjuncts in (8), delabeling them (9). Since both conjuncts are ? (unlabeled), CL is not violated ((9) is the point of the derivation when CL applies).

(8) Who$_i$ did you see [friends of t$_i$] and [enemies of t$_i$]?
(9) [$_{ConjP}$ [$_?$ who$_i$ [$_{DP}$ friends of t$_i$]] and [$_?$ who$_i$ [$_{DP}$ enemies of t$_i$]]]

The CSC, as well as ATB, thus fall out straightforwardly from the phasal/labeling system. In fact, no additional assumptions were needed above. Movement out of a conjunct must proceed via the conjunct edge. This delabels the conjunct, yielding a CL violation unless movement also takes place out of the other conjunct. In that case both conjuncts are delabeled, so that there is no CL violation.
Recall that in typical accounts of islands (like Chomsky 1986), island violations are cumulative: the more islands are crossed the worse the sentence gets. Treating conjuncts as islands (as a barrier that cannot be adjoined to in Chomsky 1986) then has the effect that ATB (8) should be twice as bad as the CSC violation in (6) since (6) involves one extraction from a conjunct island and (8) involves two. On the other hand, the ATB improvement is easily captured in the phasal/labeling account.

3. Non-ATB exceptions to the CSC

The above account does not just deduce the CSC but predicts that the CSC can be violated in well-defined contexts. Since the account is based on movement from a conjunct delabeling the conjunct, it predicts that such movement will be possible if the moving element is base-generated at the conjunct edge and can otherwise stay there, which indicates that it undergoes feature-sharing at the conjunct edge. Such movement in violation of the CSC is indeed possible. Serbo-Croatian (SC) possessors provide one such case. They have been argued to be base-generated at the edge of the traditional NP (TNP) based on the fact that they can extract and bind out of their TNP (Bošković 2012, Despić 2013), as shown by (10) for the latter.[2] Importantly, they can be extracted out of a conjunct, as shown by (11).

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[2]They also undergo agreement in Φ-features and case. Since the identity of the phrase where the possessor is located is not important I use the neutral term TNP, which stands for the highest projection in the nominal domain.

(10) [Kusturicin$_j$ najnoviji film]   ga$_{i/*j}$ je zaista razočarao.
     Kusturica's$_{NOM.MASC.SG}$ latest   movie$_{NOM.MASC.SG}$ him is really disappointed
     'Kusturica's latest movie really disappointed him.'   (Despić 2013)
(11) ?Markovog$_i$ je on [t$_i$ prijatelja]   i   [Ivanovu   sestru]   vidio.
     Marko's$_{ACC.MASC.SG}$ is he   friend$_{ACC.MASC.SG}$ and Ivan's$_{ACC.FEM.SG}$ sister$_{ACC.FEM.SG}$ seen
     'He saw Marko's friend and Ivan's sister.'

The possessor is base-generated at the conjunct edge in (11), undergoing feature-sharing so that the conjunct is labeled, which then allows movement out of the conjunct. (I assume labeling takes place as soon as it is possible, see e.g. Bošković 2015, Rizzi 2016.)[3] While (11) is a counterexample to the CSC since it involves extraction from a conjunct, its grammaticality is captured under the proposed account.

Under this account, a base-generated phase edge is expected to be extractable from conjuncts. This holds not only for the Spec, but also the head of a phase, which is also located at the phasal edge. One relevant case is Galician article-incorporation (see (12)). (13) shows that it is possible out of a conjunct.

(12) Vimo-lo$_j$ [$_{DP}$[$_{D'}$ t$_j$ [$_{NP}$ Kremlin]]].
     (we)saw-the   Kremlin   (Uriagereka 1988)
(13) Vistede-lo$_j$ [$_{DP}$ t$_j$ [$_{NP}$ amigo de Xan]] e-mais [a Diego] onte.
     (you)saw-the   friend of Xan and   Diego yesterday

Movement from the conjunct in (13) does not create a labeling problem: the conjunct from which the article incorporates is labeled as DP before the incorporation, given that when a head and a phrase merge the head projects. There is then no CL violation in (13), which captures its acceptability.[4]

The account extends to Specs created by movement, but only if the relevant element can stay in the Spec (i.e. if it moves there independently of successive-cyclic movement), which shows that it undergoes feature-sharing. More generally, the account only blocks successive-cyclic movement out of a conjunct, since such movement delabels the conjunct, changing its category. Consider in this respect German (14). (15) gives the structure of (14) before extraction from ConjP. Assuming that German has obligatory object movement to SpecvP due to its SOV nature (see Kayne 1994, Zwart 1993), the object does not move to the edge of the vP phase in (15) for reasons of successive-cyclicity. We are dealing here with regular movement where the moving element can stay in the position in question, which means it involves feature-sharing, enabling labeling. This movement then does not create the problem that successive-cyclic movement creates: while successive-cyclic movement via the edge of a conjunct delabels it, the movement in question does not do that, allowing movement out of the conjunct.

(14) Die Suppe$_i$ wird der Hans [t$_i$ essen] und [sich hinlegen].
     the soup   will the Hans   eat   and self down-lie
     'The soup, Hans will eat and lie down.'   (Johnson 2002)
(15) wird der Hans [$_{ConjP}$ [$_{vP}$ Die Suppe$_i$ essen [$_{VP}$ t$_i$]] und [$_{vP}$ sich hinlegen]]

Another relevant case concerns PPs and *r*-pronouns in Dutch, which are exceptional in that they must precede a preposition (16), although Dutch adpositions are otherwise always prepositional (17). This is analyzed as involving *r*-pronoun movement to SpecPP. That *daar* must move to SpecPP and stays there when PP moves (18) shows the movement does not occur for successive-cyclicity reasons.

(16) a. daar op   b. *op daar   (17) a. op deze tafel   b. *deze tafel op
        there on   on this table

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[3]Nothing would change if labeling occurs at the phasal level, as in Chomsky (2013), given that the projection where the possessor is located, which is the highest phrase in the nominal domain, is a phase (see Bošković 2014).
[4]Note the CSC can only be tested with optional head-movement. Consider (i), involving T-to-C from a conjunct.

(i)*Should John buy a car and Peter might sell a house?

(i) is ruled out independently under Chomsky's (2008) C-T association, where C and T share features, including the Q-feature: there is then both C$_q$ and T$_q$ in (i). In matrix clauses the C-T association requires movement in English: T$_q$ must move to C$_q$. The problem with (i) is that the T$_q$ of the second conjunct did not move to C$_q$. The difference between (13) and (i) is then that the relevant head-movement in (13) is in principle optional, so that D can be left in place in one conjunct, while in (i) it is obligatory: this independently prohibits failing to do it in one conjunct.

(18) a. [$_{PP}$ Daar op]$_i$ heb ik boeken t$_i$ gelegd.   b. Ik heb boeken [$_{PP}$ daar op] gelegd.
        there on have I books   put

There are, however, strong restrictions on P-stranding in Dutch and German that make it impossible to test the CSC here in German. However, at least for some speakers P-stranding in Dutch is less restrictive, allowing us to do that. Importantly, *r*-pronoun movement is possible from coordinations.[5]

(19) a. Ik heb daar$_i$ boeken [$_{PP}$ t$_i$ op t$_i$] en [$_{PP}$ op deze tafel] gelegd.
        I   have there books   on and   on this table put
     b. ?Daar$_i$ heb ik boeken [$_{PP}$ t$_i$ op t$_i$] en [$_{PP}$ op deze tafel] gelegd.
(20) Ik heb daar$_i$ brieven [$_{PP}$ t$_i$ naartoe t$_i$] en [$_{PP}$ uit de VS] gelezen.
     I   have there letters   to   and   out the US   read
     'I read letters to there and from the US.'   (Paula Fenger, p.c)

Before extraction from the coordinated PPs, the *r*-pronoun undergoes obligatory movement to SpecPP. Its extraction from the coordination then does not create the problem successive-cyclic movement creates: in contrast to successive-cyclic movement, *r*-pronoun movement does not delabel the conjunct.

Clitic doubling provides another argument. Van Craenenbroeck and van Koppen (2008) observe that Wambeek Dutch allows clitic doubling of a conjunct, as in (21), in violation of the CSC. Conjunct clitic doubling is possible in other languages as well, e.g. Brazilian Portuguese and Spanish.

(21) Ik paus da **se**   [**zaailn** en waailn] dui suimen wel oitgeruiken.
     I   think that they$_{CLITIC}$ they$_{STRONG}$ and we$_{STRONG}$ there together PRT out.come
     'I think that they and we will solve that together.'   (Van Craenenbroeck and van Koppen 2008)

Many have argued for the big-DP account, where the clitic and the double are generated together, with the clitic moving away (e.g. Uriagereka 1995, Kayne 2002, Boeckx 2003). Runić (2014) shows that in some languages the clitic and the double cannot be split, which provides strong evidence that the clitic and the double indeed form a constituent at one point of the derivation. Since the clitic and the doubled conjunct are base-generated as a single DP, conjunct clitic doubling can be easily captured under the current account, which can also help us become more precise about the structure of the big-DP: the clitic must be located at the edge of the big-DP, either as its Spec or its head. Clitic doubling then provides another case of a CSC violation which can be captured under the current analysis.

Also relevant are Japanese numeral constructions like (22).

(22) a. John-wa [hon-o   san satsu] katta.   b. Hon-o John-wa san-satsu katta.
        John-$_{TOP}$ book-$_{ACC}$ 3 CL   bought
        'John bought three books.'

Following Watanabe (2006), I assume *hon-o* undergoes movement to the edge of the bracketed TNP in (22a). The NP can move outside of it, as in (22b). Importantly, the movement is also possible out of coordinations, as in (23), which is readily captured under the current approach to the CSC.

(23) Ringo-o$_i$ Taro-wa [t$_i$ san ko] to [banana-o ni hon] tabeta.
     apple-$_{ACC}$ Taro-$_{TOP}$ 3   CL and banana-$_{ACC}$ 2 CL ate
     'Taro ate three apples and two bananas.'   (Satoshi Oku, p.c.)

Consider now extraction from conjuncts with English ECM ((24b) is taken from Johnson 2002).

(24) a. ?I've believed John$_i$ for a long time now [[t$_i$ to be a liar] and [Peter to be trustworthy]].
     b. I made Sally$_i$ out [[t$_i$ to be honest] and [Mark to be trustworthy]].

Lasnik (1999) argues object shift is optional in English. The first conjunct subject must have undergone object shift since it precedes a matrix adverb/particle. We then have here movement from a conjunct.

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[5]Such cases require particular prosody. (19a) needs an intonational break after first *op* or *daar* should be stressed; (19b) needs an intonational break after *op*. In work in preparation, which examines both Dutch and German, I argue this is necessary due to non V-adjacency of the stranded P (stranded Ps otherwise have to be V-adjacent).

Recall Lasnik (1999) argues object shift is optional here. Since the infinival subject can stay in the Spec of the infinitive, movement to this position must be independent of successive-cyclicity. Both conjuncts are then labeled here, enabling extraction of the infinival subject in violation of the CSC.

To sum up, above we have seen a number of violations of the CSC (namely, (11), (13), (14), (19)-(20), (21), (23), (24)). They are all captured under the proposed account, which also captures the ATB exception. The account confines the CSC effect to successive-cyclic movement out of conjuncts.

4. Conjuncts as phases

Conjuncts are traditionally assumed to be islands. In the phase system it's natural to assume they are phases, since phases have a potential to induce locality violations. This has an interesting consequence: since each conjunct is an island even if the relevant phrase is otherwise not an island, this means each conjunct should be a phase even when the relevant phrase otherwise would not be a phase. The assumption, which I will show follows from a contextual approach to phases, is motivated by cases like (25). (25) involves coordination of IPs, which is not a phase in Chomsky (2000). In the current system, wh-movement here needs to proceed via the conjunct edge, which means the conjunct needs to be a phase. Successive-cyclic movement to the conjunct edge delabels it, inducing a CL violation.[6]

(25) *I wonder what$_i$ Betsy purchased t$_i$ and Sally advertised it.

Conjunct phasehood (including the case of the coordinated IPs in (25)) actually follows from Bošković's (2014) approach to phases: there is no need to stipulate that conjuncts are phases.

While Chomsky (2000) assumes α is a phase or not regardless of its syntactic context (e.g. CP is always a phase, IP is never a phase), many have argued for contextual approaches where α's phasal status depends on the context where it occurs (as Bošković 2014 notes, this is in the spirit of *Barriers,* where we cannot determine whether CP is a barrier without knowing the context where it occurs: CP is sometimes a barrier and sometimes not, depending on its structural position). In particular, Bošković (2014) argues that the highest projection in the extended domain of a lexical head and the highest clausal projection function as phases (i.e. the highest phrase in a phasal domain functions as a phase, phasal domains being the domains of lexical heads and the clause). This makes vP (the highest projection in the V-domain) and CP (the highest projection in the clausal domain) phases in [$_{vP}$[$_{VP}$[$_{CP}$[$_{IP}$, as in Chomsky (2000). However, in contrast to Chomsky (2000), if V takes an IP complement here this IP will be a phase as the highest projection in the clausal domain (see also Wurmbrand 2013).

Turning to coordinations, ConjP disrupts domain projection for the clausal phasal domain. CP does not immediately dominate IP in [$_{vP}$[$_{VP}$[$_{CP}$[$_{ConjP}$[$_{IP}$. ConjP separates CP and IP into separate domains, making IP the highest phrase in its phasal domain, just like when V takes an IP complement. (More generally, merger of (a projection of) the Conj head with a conjunct closes the extended domain of the conjunct in Bošković's 2014 system, making the highest projection of the conjunct a phase.)

The presence of ConjP then affects the phasal status of IP in Bošković's (2014) system, making it a phase (this in fact holds for all conjuncts). The gist of the discussion here is that IP is a phase if it is not immediately dominated by CP, as argued independently in Bošković (2014, 2015, 2016a) and Wurmbrand (2013). Though the cases discussed in those works do not involve coordination, ConjP has the same effect in that the relevant IP is not immediately dominated by CP, which makes it a phase.

5. Subject questions

I now turn to subject extraction in IP&IP coordinations like (26), where an additional issue arises (I use IP neutrally, similar to TNP). (26) seems to involve extraction of a conjunct edge created by obligatory movement (to SpecIP), which should not cause a labeling problem. Why is it then unacceptable?

(26) *I wonder who$_i$ [t$_i$ left] and [Mary disappeared].

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[6]Under the natural assumption that A'-Spec is higher than A-Spec (in a KP with both), wh-movement will proceed via the outmost conjunct edge. This may in fact follow independently. Under Bošković's (2016b) approach to the PIC, where only the outmost Spec of a phase is accessible from the outside, *who* must move via the outmost Spec (above *Betsy*) to be accessible outside of the conjunct phase. (There is no issue regarding the possibility of multiple Specs for the relevant IP in (25) given the standard assumption that phase heads in general can have multiple Specs).

This brings us to the puzzle of *who left*, where there is apparently no movement to SpecIP. Under some accounts, *who* here stays in SpecIP. However, consider (27). (27a-b) show *wh-the-hell* phrases are only possible with wh-movement. (27c) then provides evidence that the wh-phrase is not located in SpecIP.

(27) a. What the hell did John buy?   b. *Who bought what the hell?
      c. Who the hell arrested Mary?

Also, in contrast to (28b), (28a) is unambiguous. Since (28b) shows an object quantifier can scope over a quantifier in SpecIP, as Mizuguchi (2014) notes, *who* in (28a) should not be located in SpecIP.

(28) a. Who loves everyone?   (who>everyone; *everyone>who)
      b. Someone loves everyone.   (someone >everyone; everyone>someone)

McCloskey's (2000) West Ulster English (WUE) data in (29) show not only that subject questions involve movement to SpecCP but also that the movement does not proceed via SpecIP.

(29) a. Who$_i$ was arrested all t$_i$ in Duke Street?   b. *They$_i$ were arrested all t$_i$ last night.

WUE allows quantifier-float under wh-movement (in contrast to standard English). While WUE allows (29a), like standard English it still disallows (29b). McCloskey (2000) observes that given that quantifier-float is disallowed from SpecIP in (29b), *all* cannot be floated under movement to SpecIP in (29a). He then concludes that *who* moves here directly to SpecCP, without moving via SpecIP.

This is an issue that is familiar from many languages, e.g. Kinande, Kaqchikel, Italian. There are well-known arguments from these languages that subject movement to SpecIP cannot feed movement to SpecCP. What makes *who left* puzzling is that English otherwise requires movement to SpecIP, which means the EPP requirement is voided here (see Messick 2016, Bošković 2016a for accounts).

This is the problem with (26). Since conjuncts are phases movement of *who* to SpecIP is required by the PIC. As a result, even if the way of voiding the EPP in *who left* is available in (26) movement of *who* to SpecIP is independently needed in (26) because of the coordination structure. Whatever is responsible for the impossibility of subject SpecIP-to-SpecCP movement will then block (26).

Also relevant is (30):

(30) Who can leave and must work harder?

There are many arguments that the IP domain contains more than just TP–there is additional structure between vP and the phrase where the subject is located (see Belletti 1990, Cinque 1999, Bošković 2001 regarding intermediate V-movement, Bobaljik and Jonas 1996 regarding multiple subject positions, Bošković 2004 regarding Q-float). (31) shows that sentential adverbs can intervene between the subject and modals in English, which also indicates that the subject is located in the Spec of a phrase that is higher than the one where the modal is located. Assuming Pollock (1989)-style split IP, Bošković (1997) and Watanabe (1993) place the subject in (31) in SpecAgrsP and the modal in T.

(31) John probably can play the guitar.

Further, if bar-level coordination is disallowed the subject and the modal cannot be located in the same phrase in (32), since the subject is outside of the coordination, and the modal is inside of it.

(32) John [travels to Rome tomorrow] and [will fly for Paris on Sunday].

Assuming the Bošković/Watanabe account (the labels of the phrases don't really matter), (30) can then be analyzed as involving TP coordination (33), where the subject moves from SpecTP directly to SpecCP (after forming an ATB dependency) and the ban on local subject wh-movement is interpreted as a ban on movement from SpecAgrsP to SpecCP, which does not occur in (30)/(33). (I will refer to the subject not passing through SpecAgrsP, which otherwise must be filled, when moving to SpecCP as the *who left* effect). The ban in question is then tied to agreement, i.e. the agreeing SpecAgrsP subject position where lexical subjects are located. SpecAgrsP is where the subject is located in the second conjunct of (26), which must then involve AgrsP-level coordination given CL, with (26) ruled out due

to the PIC/*who left* effect as discussed above. Note also that in (30), which involves TP coordination, the subject will move to the conjunct edge because the conjunct is a phase although otherwise such movement is not necessary, the EPP requirement, which is anyway voided in subject questions, holding for the highest position in split IP (i.e. AgrsP). (33) gives the structure of (30) and (34) of (26).

(33) [CP Whoi [AgrsP [ConjP [TP ti can leave] and [TP ti must work harder]]]]?
(34) *I wonder [CP whoi [ConjP [AgrsP ti [TP left]] and [AgrsP Mary [TP disappeared]]]].

A contrast noted by Q. Tian, where (35) is worse than (36), can help us pinpoint the culprit for the *who left* effect. The contrast also shows that infinitives have split IP (AgrsP+TP), with the presence of *Peter* in the second conjunct forcing it to be an AgrsP—the first conjunct then also must be an AgrsP.

(35) *Whoi did you believe for a long time now [ti to be a liar] and [Peter to be trustworthy]?
(36) ?I've believed Johni for a long time now [ti to be a liar] and [Peter to be trustworthy].

John in (36) undergoes feature-sharing movement to the SpecAgrsP of the infinitive, which results in labeling. This is followed by movement to matrix SpecvP, which conforms to the current account of the CSC. If what is behind the *who left* effect is that subject wh-movement cannot proceed via SpecAgrsP, that derivation is not an option in (35); (35) can then be accounted for on a par with (26)/(34). Since, in contrast to *who* in (34), after moving to SpecAgrsP (of the infinitive) *who* in (35) doesn't move directly to SpecCP, the unacceptability of (35) then indicates that what is responsible for the *who left* effect is that subjects undergoing wh-movement cannot move to SpecAgrsP–the culprit is movement of the wh-subject to SpecAgrsP, not its movement from SpecAgrsP to SpecCP. Extraction from clausal coordination thus enables us to pinpoint the culprit for the *who left* effect, also providing evidence for split IP.

6. Intervention effects

We have seen movement from conjuncts is possible exactly where expected under the proposed account. Thus, SC possessors, which are generated at the TNP edge, can extract (11). However, this is possible only from the first conjunct, as shown by (37), where the possessor extracts from the second conjunct. All the CSC-violating extractions from above are in fact allowed only from the first conjunct.

(37) *Ivanovui   je on [Markovog   prijatelja]   i   [ti sestru]   vidio.
     Ivan'sACC.FEM.SG is he Marko'sACC.MASC.SG friendACC.MASC.SG and   sisterACC.FEM.SG seen

(37) cannot be a CSC violation; if the CSC were to ban poss-extraction from conjuncts in SC it would also rule out (11). Given that the first conjunct is higher than the second I sugggest (37) involves intervention: the first conjunct causes an intervention effect, blocking movement from the second conjunct.

There is independent evidence for this. It is well-known that traces void intervention effects (Chomsky 1995). Thus, A-movement across the experiencer is disallowed in (38a), an intervention effect involving A-movement across an A-Spec. The effect is voided if the intervener is a trace (38b).

(38) a. *Giannii sembra a Maria [ti essere stanco]   b. A Mariaj, Giannii sembra tj [ti essere stanco].
        Gianni seems to Maria to.be ill   (Italian)

The argument that (37) involves an intervention effect concerns extraction of conjuncts, which is not banned universally. Thus, Japanese and SC allow it (Stjepanović 2014, Bošković 2017, Oda 2017).

(39) ?Kyoodaii-to   kanojo-wa [ti Toodai]-ni   akogareteiru.
     Kyoto.University-and she-Top   Tokyo.University-Dat admire
     'She admires Kyoto University and Tokyo University.'   (Japanese, Oda 2017)
(40) ?Knjigei je Marko [ti i   filmove] kupio.
     books   is Marko   and movies   bought
     'Marko bought books and movies.'   (SC)

In these languages, the conjunction is a clitic: it encliticizes to the first conjunct in Japanese (note that conjunct movement carries it along) and procliticizes to the second one in SC (it also gets carried along

in SC, see (41a)). Oda (2017) and Stjepanović (2014) argue that conjunction cliticization is required for conjunct extraction based on Bošković (2013), where movement of an island head voids islandhood: ConjP is an island but its islandhood is voided in SC/Japanese due to the movement of the conjunction.

(41) then provides evidence for the intervention analysis of (37). In (41a), the first conjunct is a trace, which enables extraction from the second conjunct. In (41b), it stays in situ, blocking extraction.[7]

(41) a. Koja serija$_i$ se i čiji$_j$ tebi [$_{ConjP}$ t$_i$ [t$_j$ film]] dopadaju?
       which series self and whose you$_{DAT}$ movie please
       'Which series and whose movie are pleasing to you?'
   b. *I čiji$_j$ se tebi [$_{ConjP}$ koja serija [t$_j$ film]] dopadaju?   (Stjepanović in press)

(41) parallels (38): turning an intervener into a trace voids intervention. The intervention voiding effect confirms the reason why extraction is disallowed from the second conjunct is the intervention effect.

Given that the first conjunct induces an intervention effect for extraction from the second, why doesn't the effect arise with ATB, where it seems there is movement from each conjunct, which means movement from the second conjunct crosses the first. There is an account of ATB which easily resolves the issue, namely Nunes (2004). Nunes gives a unified account of parasitic gaps (PG) and ATB where XP involved in a PG/ATB construction is merged within the adjunct/second conjunct, then re-merged in a non-c-commanding position corresponding to the other gap of such constructions, from where it moves. Two chains are then formed headed by moved XP, the lower copy of the chains is deleted in PF.

Then, in (42) *who* is merged in its θ-position in the second conjunct, moving to the edge of the conjunct (which is a phase).[8] It is then re-merged in its θ-position in the first conjunct, moving to its edge. Movement to the edge of the conjuncts delabels them, so that CL is obeyed.[9] Crucially, there is no movement from the second conjunct that crosses the first, which resolves the intervention issue.

(42) Who$_i$ did you see [t$_i$ friends of t$_i$] and [t$_i$ enemies of t$_i$]?

7. An alternative: Movement out of moved elements

This section explores an alternative analysis based on Chomsky's (2013) account of coordination, where the conjuncts are generated together. Since this involves a phrase-phrase merger without feature sharing, the first conjunct moves (coordination-internally). Under this account, (2) can be ruled out independently of CL by the ban on movement out of moved elements (the freezing ban) since *who* moves out of a moved element. What is particularly interesting here is that Bošković (2018) gives a labeling account of this ban that allows movement out of moved elements in the same contexts as the above account of the CSC. In particular, based on a number of exceptions to it, Bošković (2018) argues that the freezing ban holds only for successive-cyclic movement out of moved elements, the same restriction that holds for the CSC. Bošković (2018) in fact argues that there is nothing wrong in principle with movement from moved elements, replacing the freezing ban with the generalization in (43).

(43) Phases with non-agreeing Specifiers cannot undergo movement.

Under this approach, the freezing ban problem does not arise when YP moves from moved XP but with the movement of XP itself; i.e., moving XP does not freeze the internal structure of XP for movement– movement of YP to the edge of XP prevents movement of XP. This is why successive-cyclic movement is relevant here. To derive YP$_i$ [$_{XP}$...t$_i$...]$_j$...t$_j$, involving movement of YP from moved XP,

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[7]Stjepanović treats (41a) on a par with (i), which involves AP movement to SpecPP, followed by procliticization of the P to the adjective. Movement of the adjective then carries the P along (see Bošković 2013). In (41a), the second conjunct moves to lower SpecConjP, followed by conjunction procliticization and further movement.

(i) [U veliku]$_i$ je on ušao [t$_i$ sobu].
    in big   is he entered room   (SC)

[8]There are islandhood effects within the second conjunct, which show that there must be movement to the edge of this conjunct, before sideward movement. The current analysis may actually explain why this movement, which delabels the second conjunct, takes place: without it, a CL violation would occur.
[9]The copy of *who* at the edge of the second conjunct doesn't count as a trace (hence is not ignored for labeling) since there is no higher copy that c-commands it (the relevant chain is formed only after movement out of ConjP).

given the cycle YP must first move to the edge of XP. If this involves successive-cyclic movement, it will delabel XP, as discussed above. Bošković (2018), however, argues that unlabeled elements cannot undergo movement (this follows from Chomsky's 2000 claim that only phases move, given that unlabeled elements are not phases). This is why the freezing ban holds only for successive-cyclic movement, which means it is restricted in the same way as the CSC. To demonstrate the restriction, Bošković gives a number of cases where movement from moved elements is possible, several of which involve the same movements as those discussed above regarding the CSC. Thus, just like SC possessors and Dutch *r*-pronouns can move from conjuncts, they can also move from moved elements, as in (44)-(45).

(44) Jovanovu$_i$ je on [$_{NP}$ t$_i$ sliku]$_j$ vidio t$_j$.
     John's$_{ACC.FEM.SG}$ is he   picture$_{ACC.FEM.SG}$ seen
     'He saw John's picture.'   (SC, Bošković 2018)

(45) Waar$_i$ had jij   dan [t$_i$ *mee* t$_i$]$_j$ gedacht dat je de vis t$_j$ zou   moeten snijden?
     where had you then with   thought that you the fish would must   cut
     'What did you think you should cut the fish with?'   (Dutch, Barbiers 2002)

The freezing ban and the CSC are thus both restricted to successive-cyclic movement, which can be captured in a unified manner under Chomsky's (2013) movement account of coordination. I leave teasing apart the CL analysis and the freezing ban analysis for future research, merely noting that it is not clear how the ATB exception to the CSC can be captured under the latter analysis.[10]

8. Conclusion

The paper has proposed a deduction of the ban on extraction from conjuncts, which has actually reformulated the ban based on a number of cases where extraction from conjuncts was shown to be allowed. In particular, the CSC was shown to hold only for successive-cyclic movement from conjuncts, as in **Who$_i$ did you see [t$_i$ friends of t$_i$] and Sue*. Elements which are base-generated at the conjunct edge, or move there independently of successive-cyclic movement, were shown to be extractable. It was also shown that the restriction of the CSC to successive-cyclic movement can be captured in Chomsky's (2013) system, where successive-cyclic movement changes the category of the element it targets (it delabels it), by the CL requirement, in a way which also captures the ATB exception.

The account of the CSC also shed light on the ban on wh-movement from SpecIP to SpecCP. I have argued for a return to split IP, in the spirit of Pollock (1989), and shown that subjects undergoing wh-movement cannot move to the highest projection in the split IP even when this movement is not immediately followed by movement to SpecCP. If the relevant projection is involved in agreement licensing, as in the original AgrsP/TP split, we can also account for the fact that in many languages subject wh-movement affects agreement. The paper has also argued that conjuncts are phases, which follows from a contextual approach to phases, and provided evidence for Nunes's account of ATB.

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[10] The exceptional cases from section 3 can be captured, the only potential issue being (14), which would involve movement from a moved vP. The issue is that object movement from vPs fronted to SpecCP is disallowed. There should then be a difference between movement from a vP moved to SpecCP (i) and a vP moved ConjP-internally.

(i) **Was$_i$ denkst du [$_{CP}$ [$_{vP}$ t$_i$ gelesen]$_j$ hat$_k$ [$_{IP}$ keiner t$_k$ t$_j$]]?
    what think you   read   has   no one
    'What do you think no one read?'   (Corver in press)

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