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On movement out of moved elements, labels, and phases

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Abstract: The paper provides a deduction of a modified version of the traditional ban on movement out of moved elements within the phasal/labeling system which provides a new perspective on the ban in question. Under the proposed analysis, the problem with the movement of YP out of moved element XP does not arise at the point of movement of YP out of XP, as has been previously assumed; the problem arises already with the movement of XP, i.e. XP itself cannot undergo movement in this case—any later movement out of moved XP is then trivially blocked. The proposed analysis leaves room for movement out of moved elements to take place in a well-defined context, which is shown to be borne out. What the proposed analysis deduces is then not the traditional ban on movement out of moved elements, but rather a ban on movement of phases with non-agreeing specifiers, which the paper argues should replace the traditional ban in question. As a result, the analysis also extends to the immobility of V-2 clauses in German. The paper also provides a new perspective on the traditional Adjunct Condition (i.e. the ban on movement out of adjuncts). It is shown that movement out of adjuncts is possible in the same configuration as movement out of moved elements. The proposed account of the latter is then extended to the Adjunct Condition.

Keywords: locality, labels, phases, freezing effects, successive cyclic movement, adjuncts, agreement

1. Movement out of moved elements

One of the lines of research within the domain of locality of movement that has attracted a considerable amount of attention concerns freezing effects. Many researchers have argued that movement out of moved elements is not possible. The most explicit early statement of the effect goes back to Culicover and Wexler (1977) and Wexler and Culicover (1980), with early minimalist works such as Ormazabal, Uriagereka, and Uribe-Echevarria (1994) and Takahashi (1994) providing a new perspective on the effect. Many other works have argued for generalizations along the lines of (1), also providing empirical evidence for it; see Ross (1967:160, 1974), Postal (1972), Huybregts (1976), Freidin (1992), Diesing (1992), Collins (1994), Müller (1998, 2010), Lasnik (1999), Stepanov (2001), Rizzi (2006), Boeckx (2008), Gallego (2009), Lohndal (2011), Uriagereka (2012), among many others (see Corver in press for a review of the relevant literature and arguments).

(1) Movement is not possible out of moved elements.

The works in question provide a battery of arguments for (1). As an illustration, the traditional Subject Condition, which bans extraction out of subjects in SpecIP (2), is one instantiation of (1), given that under the VP Internal Subject Hypothesis extraction out of a subject in SpecIP involves extraction out of a moved element.

(2) ?*I wonder $[_{CP}$ who$_i$ $[_{DP}$ friends of $t_i]_j$ $[_{vP}$ t_j hired Mary]]

Notice in this respect that, as discussed in Stepanov (2007) and Takahashi (1994) with respect to a number of languages, movement from subjects that remain in SpecvP is possible, which led Stepanov (2007) and Takahashi (1994) to blame the ungrammaticality of (2) on the moved status of the subject in this construction. The following contrast from Spanish illustrates the different behavior of moved and unmoved subjects with respect to extraction.[1]

(3) a. ¿De qué conferenciantes$_i$ te parece que me$_z$ van
of what speakers CL-2sg seem-PRES.3SG that CL-1SG go-PRES.3PL
a impresionar$_v$ [$_{v*P}$ [$_{DP}$ las propuestas t_i][t_z t_v]?
to to-impress the proposals

b.*¿De qué conferenciantes$_i$ te parece que [$_{DP}$ las propuestas t_i]$_j$
of what speakers CL-2sg seem-PRES.3SG that the proposals
me$_z$ van a impresionar$_v$ [$_{v*P}$ t_j t_z t_v]?
CL-1SG go-PRES.3PL to to-impress
'Which speakers does it seem to you that the proposals by will impress me?
(Uriagereka 1988:118)

A number of authors have also shown that movement from moved objects is disallowed. Thus, Lasnik (1999, 2001) argues that objects that survive pseudogapping undergo object shift, pseudogapping involving VP-ellipsis. Crucially, movement from a pseudogapping object is not possible. Thus, (4b) contrasts with (5), a contrast which Lasnik argues illustrates the different behavior of moved (4b) and unmoved (5) objects with respect to extraction. The same holds for the contrast in (7), given Lasnik's claim that objects that precede particles undergo object shift (see also Johnson 1991 and Gallego and Uriagereka 2007).[2]

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[1](i) gives another acceptable case of extraction from a postverbal subject, which does not involve a psych predicate.
(i) ¿De qué equipo$_i$ dices que han bailado [$_{DP}$ dos participantes t_i]
of what team say-2sg that have-3pl danced two participants
'Which team do you say that two members of have danced?' (Gallego and Uriagereka 2006)
It should be noted that Chomsky (2008) discusses some examples where he claims extraction from subjects is allowed in English. While the grammaticality status of those cases is controversial (see for example the references in Gallego and Uriagereka 2006), their defining property is that they involve passive/ergative subjects (Chomsky analyzes such cases as involving extraction from the base position, which actually does not violate (1)) and that the moved element must be a PP, P-stranding being disallowed, as discussed in Broekhuis (2005), Gallego and Uriagereka (2006), and Lohndal (2007) (see also Boeckx 2008), who argue based on these properties (and additional evidence) against Chomsky's analysis of such cases. Particularly convincing are arguments given in Broekhuis (2005), who provides evidence that the relevant cases do not involve extraction at all but base-generation of the relevant PPs outside of the subject DP.

[2]Stepanov (2001) argues that the Specificity effect with objects, i.e. the ban on extraction out of specific/definite objects, also follows from (1), given his claim that definite objects undergo movement even in English (see also Diesing 1996).

(4) a. Bill selected a painting of John, and Susan should [a photograph of Mary]$_i$ [~~$_{VP}$ select t_i~~]
b. ?*Who will Bill select a painting of, and who$_j$ will Susan [a photograph of t_j]$_i$ [~~$_{VP}$ select t_i~~]
(5) Who$_i$ will Bill select a painting of t_i?
(6) a. ??Who$_j$ did you call [friends of t_j]$_i$ up t_i?
b. Who$_i$ did you call up friends of t_i?

As another illustration of the effect of (1) on extraction out of objects, Torrego (1998) argues that *a*-marked objects in Spanish undergo movement. Importantly, extraction out of *a*-marked objects is not possible, in contrast to extraction out of non-*a*-marked objects.[3]

(7) ?*[De quién]$_j$ has visitado [$_{DP}$ a muchos amigos t_j]$_i$ [$_{VP}$ … t_i]
of whom have-2sg visited a many friends
'Who have you visited many friends of?' (Gallego and Uriagereka 2006)

The effect is not limited to extraction out of elements in A-positions. Thus, a number of authors have shown that extraction out of elements located in SpecCP and out of topics is not possible (on the impossibility of such extraction, see Cinque 1990, Corver in press, Grewendorf 1989, Lasnik and Saito 1992, Müller 1998, 2010, and Takahashi 1994, among many others), as illustrated by the following examples.[4] [5]

(i) ?*Who$_i$ did you see [this friend of t_i]?

[3] See Diesing (1992), Müller (1998), Lohndal (2011), and Corver (in press), among others, on the impossibility of movement out of scrambled/shifted objects in Germanic (but see also Abels 2007 on German).

[4]German (8c) involves remnant vP-fronting to the embedded SpecCP (with finite V-movement to C), which is otherwise possible in German (cf. (8d)), followed by extraction out of the fronted vP. Note that (8a-c) give the judgments from the original works. (Corver in press actually notes that his informants find examples like (8b) even worse; it should, however, be noted that we are dealing here with argument extraction, which means Subjacency-strength violations. Takahashi 1994 shows that, as expected, extraction of an adjunct out of a phrase moved to SpecCP leads to a stronger, ECP-strength violation; it is of course unclear how to capture the argument/adjunct difference in this respect in the current framework, though see Chomsky and Lasnik 1993).

[5]Torrego (1985) (see also Chomsky 1986) claims that extraction out of SpecCP is possible in Spanish based on examples like (i). However, Gallego (2007) shows that such examples involve a prothetic object structure, the extracted element being an object of the higher verb, as in the structure in (ii). When the prothetic object analysis is blocked by a reconstruction effect, as in (iii), such constructions become unacceptable (the same quite generally holds with verbs that do not allow a prothetic object).

(i) Este es la autor del que no sabemos qué libros leer
this is the author by whom not (we) know what books read
(ii) Este es la autor [del que]$_i$ no sabemos t_i [$_{CP}$ [qué libros]$_j$ leer t_j]
(iii) *[$_{CP}$ [De qué hijo suyo$_j$]$_i$ C sabes [$_{CP}$ [qué novelas t_i] C ha leído todo padre$_j$]]?
of what son his know-2.SG what novels have-3.SG read every father
'which son of his do you know which novels by has every father read?'

It should, however, be noted that there are at least some derivations on which (iii) is ruled out independently of (1). Assuming *qué* is located in SpecDP, the complement wh-phrase would have to move

(8) a. ??/*Whose book$_i$ do you wonder [$_{CP}$ [how many reviews of t_i]$_j$ John read t_j?
(Corver in press)

b. ??Vowel harmony, I think that [articles about t_i]$_j$ you should read t_j carefully.
(Lasnik and Saito 1992:101)

c. *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?'

d. cf. Ich denke [$_{CP}$ [$_{vP}$ das Buch gelesen]$_j$ hat$_k$ [$_{IP}$ keiner t_k t_j]]?
I think that book read has no one
'I think no one read the book.' (Corver in press)

The effect in question also holds for rightward movement (see for example Ross 1967, Wexler and Culicover 1980, Johnson 1986, Lasnik and Saito 1992), as illustrated by (9).

(9) a. ?*What$_i$ did you give t_j to John [a movie about t_i]$_j$?
b. ?*What$_i$ did you see t_j yesterday [a movie about t_i]$_j$?

As a final argument to be noted here, it is well-known that preposition stranding is not possible after the PP undergoes movement (see e.g. Postal 1972), which can be taken as another illustration of (1). ((10a) involves P-stranding during successive-cyclic movement and (10b) involves P-stranding in the topic position.)[6]

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to the higher SpecDP to be able to move out of the DP later, given the locality restrictions on extraction in multiple-Spec configurations (see Bošković 2016a). That in itself may not be possible, given Richards's (2001) tucking in requirement. Furthermore, even if it were, assuming that the outmost edge is the pied-piper for wh-movement (the wh-phrase in question would need to move to the outmost edge), conditions on pied-piping could prevent this wh-phrase from moving further (assuming that the pied-piper cannot move away from what it pied-pipes, since it determines the nature of the whole phrase). Finally, given the discussion below, the complement wh-phrase that would move to the outmost SpecDP would have to undergo feature-checking with (presumably) +wh-D. However, +wh-feature checking is one of the checking operations that independently results in a freezing effect (i.e. it is a criterial feature in Rizzi's 2006 terminology), which would also prevent the wh-phrase in question from moving further (on the other hand, if the wh-phrase in question does not undergo wh-feature checking upon moving to the edge of the relevant DP, the derivation on which it moves into the matrix clause will be ruled out by the account of (1) developed below).

[6] In this context, a reviewer brings up the swiping construction, illustrated by (i).

(i) John gave a talk, but I don't know what about.

The exact derivation of such cases is rather controversial. Hartman and Ai (2007) and Van Craenenbroeck (2010) analyze it as involving movement out of a moved PP, without however accounting for why examples like **Which table did you think that [on t] John put the book* are unacceptable. Furthermore, there are accounts of (i) that are fully compatible with the ban in (1) (and the account of (1) proposed below). This is e.g. the case with Merchant (2002), where the wh-phrase incorporates into the preposition. Radford and Iwasaki's (2015) movement-out-of-the-PP account, where the preposition also moves, is also compatible with the account of (1) given below under the approach to locality violations from Bošković

(10) a. *Which table$_i$ did you think [$_{CP}$ [on t_i]$_j$ that [$_{IP}$ John put the book t_j]]?
b. *Which table$_i$ did you think that [on t_i]$_j$ John put the book t_j?

The literature cited above gives a number of additional arguments for (1). In light of them I will take the empirical validity of (1) for granted.[7] The goal of the paper is to show that the

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(2013b). (Under that approach, the analysis of (1) given below would allow movement out of a moved phrase through the rescue-by-PF-deletion mechanism if the phrase head itself undergoes movement, which is what happens under the Radford and Iwasaki analysis. Radford and Iwasaki in fact also suggest a rescue-by-PF-deletion analysis). Güneş and Lipták's (2016) observation that the preposition in such examples is assigned stress via the Nuclear Stress Rule (NSR) may open up another way of looking at such cases. Since the NSR assigns stress to the most deeply embedded pronounced element, Stjepanović (1999, 2003) argues that the NSR can induce pronunciation of a lower copy (under the approach where the highest copy is pronounced unless PF considerations require lower copy pronunciation, see here footnote 26). Given the requirement, discussed by Güneş and Lipták, that the preposition in (i) be assigned stress by the NSR, (i) may actually involve PP fronting, with the lower copy of the preposition pronounced due to the NSR, as in many other cases of this sort discussed by Stjepanović (see also Bošković and Nunes 2007).

[7]There have been occasional claims that there are counterexamples to (1), see e.g. Abels (2007), Collins (2005), Gallego and Uriagereka (2006), Haider (2010), Neeleman and de Koot (2010) (see also footnote 6). The arguments for (1) offered in the literature are simply too numerous to dismiss. It should, however, be noted that the deduction of (1) proposed below does leave room for exceptions, i.e. under the proposed analysis (1) is not expected to be exceptionless. (I leave for future research examining the cases discussed in the works cited above from this perspective (some of them do seem to fit the exceptional pattern noted below). It should also be noted that, as discussed in Abels (2007), some violations of (1) are more degraded than others. I will not have anything to say here about such differences; an additional factor, possibly along the lines of Abels (2007), could be involved. However, given the variety and the subtlety of the differences in question, it is likely that more than one factor is involved (see here Haegeman, Jiménez-Fernández, and Radford 2014). As an illustration, Bošković (1992) observes a three-way distinction with extraction out of subjects in English: while all relevant cases are degraded, extraction out of subjects of finite clauses headed by *that* is worse than extraction out of finite clauses not introduced by *that*, which is in turn worse than extraction out of ECM infinitival subjects. While the last case could represent the more general infinitival island-weakening effect (some islands, e.g. wh-islands, are often weakened with infinitives though only for argument extraction), this cannot be responsible for the difference between *that* and *that*-less finite clauses.

One more general exception to (1) concerns scrambling in Japanese: as discussed in Bošković and Takahashi (1998), movement is allowed out of scrambled elements in Japanese. (Japanese scrambling is insensitive to some other movement constraints too, e.g. relativized-minimality effects, see Saito and Fukui 1998; see also Bošković 2004b for a general island-weakening effect with Japanese scrambling). Based on this (and other issues), Bošković and Takahashi (1998) argue Japanese scrambling involves base-generation (not movement) of the relevant element, which would make it irrelevant to (1). (PF movement accounts, as in Sauerland and Elbourne 2002, would also make it irrelevant to (1).) Under the analysis of (1) presented below there are also ways of accommodating Japanese scrambling even under an overt syntactic movement analysis. E.g., if, possibly because it involves adjunction, scrambling allows acyclicity, where movement to the edge of a scrambled phrase (which would also involve adjunction) can take place after scrambling itself, movement out of a scrambled element would be allowed under the analysis of (1) below. (The well-known radical reconstruction effect of scrambling (see e.g. Saito 1992, Tada 1993, Bošković and Takahashi 1998) may also be relevant here). It should, however, be noted that Saito (2016a) argues that due to the lack of agreement, labeling in Japanese proceeds quite differently from other languages examined in this paper. Interestingly, under the deduction of (1) given below and Saito's approach to labeling in Japanese,

generalization in (1) falls out as a theorem from the theory of phases (Chomsky 2000, 2001) and the labeling framework of Chomsky (2013, 2015).

In the following section I will first introduce the necessary background regarding the theory of phases and the labeling framework, and then demonstrate that these mechanisms deduce (1).[8] As is often the case when a generalization is deduced, we will see that the mechanisms in question do not completely deduce (1); they leave room for extraction out of moved elements to be possible in a well-defined context. Evidence will be provided which indicates that such extraction is indeed possible in the context in question. The proposed analysis will thus not deduce (1), which rigidly bans movement out of moved elements, but a modified version of (1) which will also be shown to be empirically better supported.

2. On phases and labels

2.1. Deducing the ban on movement out of moved elements

Chomsky (2000, 2001) gives a number of criteria that differentiate phases from non-phases. One of them is that only phases can undergo movement, as argued in Chomsky (2000, 2001) (see also Rackowski and Richards 2005, Cheng 2012, Matushansky 2005, Harwood 2013, Legate 2014, Bošković 2015, among others). Assume that this is indeed the case, i.e. that (11) holds.

(11) Only phases can undergo movement.

Now, given the Phase-Impenetrability Condition (PIC), which requires that movement out of phase XP proceed via the edge of XP, movement out of a phase must proceed successive cyclically, targeting the edge of the phase. The PIC has interesting consequences within Chomsky's (2013) labeling system.

Chomsky (2013) proposes a theory of labeling which allows unlabeled objects during the derivation, though not in final representations. According to the labeling algorithm proposed in Chomsky (2013), in a case where a head and a phrase merge, the head projects (i.e. provides the label for the resulting object). Regarding the case where two non-minimal projections (i.e. phrases) merge, Chomsky suggests two ways of implementing labeling, via prominent feature sharing or traces, the crucial assumption with the latter being that traces are ignored for the purpose of labeling, the intuition here being that a trace/lower copy is invisible to the labeling algorithm since it is part of a discontinuous element (i.e. the whole chain; the element to be

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movement out of scrambled elements in Japanese is actually expected to be possible (see footnote 13). Japanese may thus provide a rather dramatic confirmation of the analysis presented below. A comprehensive discussion of Japanese would, however, take us way beyond the scope of this paper.

[8] It should, however, be noted that the goal of this paper is not to justify, or argue for, the mechanisms in question but simply to demonstrate that they deduce (1) (though this in itself can be taken as an argument in their favor). I will also not discuss here other attempts to (partially) deduce (1), see Corver (in press) for a (historical) overview of such attempts (see also Abels 2007 for a different perspective on the phenomenon).

labeled then does not dominate every occurrence of the relevant moved element), which Chomsky unifies with intervention effects (with traces not functioning as interveners for the same reason). To illustrate the former, when *which book* merges with interrogative C (actually CP at the point of merger) in (12), both the wh-phrase and the CP have the Q-feature; what is projected (i.e. determines the label of the resulting object) then is the Q-feature.[9] This is obviously reminiscent of Spec-Head agreement, where the shared feature is what is involved in Spec-head agreement.

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

(13) illustrates the latter case of merger of two phrases, involving label resolution via traces. ((14) gives the relevant structure, discussed below.)

(13) Which book$_i$ do you think [$_{CP}$ t'$_i$ [$_{C'}$ that [John bought t$_i$]]]
(14) v [$_{VP}$ think [$_{?}$ which book [$_{CP}$ that [John bought t$_i$]]]

Chomsky assumes that successive-cyclic movement, i.e. intermediate steps of movement, do not involve feature sharing, which essentially follows Bošković (1997, 2002, 2007, 2008a).[10] This means that there is no feature sharing between the declarative complementizer *that* and the wh-phrase that passes through its edge in (13). As a result, labeling through feature sharing is not an option here. The embedded clause then cannot be labeled at the point of movement of *which book* to its edge, as indicated in (14) by using ?-notation. When v is merged, *which book* moves away. The element merged with the CP now being a trace, it is ignored for the purpose of labeling, hence ? is labeled as CP after movement of *which book*. Only at this point the status of t'$_i$ in (13) can be determined as the Spec of CP. However, prior to the movement (see (14)), ? is not a CP, it is simply undetermined regarding the issue in question.

The crucial ingredients of Chomsky's (2013) approach to labeling and successive cyclic movement are then the following: When a constituent is built by a merge or move step that involves agreement/checks features, that constituent can be labelled. When it is built by a merge/move step that does not check features/involve agreement, it does not receive a label, though it may receive a label at a later point after one of its immediate subconstituents moves away. Furthermore, successive cyclic movement does not involve feature-checking/agreement in intermediate positions. (Labelling is then the driving force of successive-cyclic movement for

[9]Like Chomsky (2013), I will continue using CP and SpecCP for such cases for ease of exposition.
[10]Bošković's (2007, 2008a) argues that intermediate wh-movement steps do not involve agreement/feature-checking, only the final step of wh-movement does; see these works for arguments to this effect. (Bošković 2008a argues that cases that have been assumed to involve morphological reflexes of such agreement with intermediate Cs actually do not involve successive-cyclic movement via SpecCPs, see here footnote 30).

Chomsky 2013, i.e. the need to label is what forces movement from intermediate positions, with the movement continuing until a feature-sharing position is reached.)[11]

(13)-(14) illustrate how successive-cyclic movement is quite generally treated in the labeling framework. Significantly, this treatment of successive-cyclic movement, in conjunction with (11), deduces the generalization in (1). Consider (15a), involving movement of YP out of a moved element, XP. Before any movement takes place, XP and YP are in the configuration in (15b).

(15) a. YP_i $[_{XP}$ ... t_i ...$]_j$ ... t_j
b. $[_{XP}$ ... YP ...]

Since only phases can move (11), for XP to be able to move XP must be a phase. Furthermore, given the PIC, any movement out of XP itself has to proceed via the edge of XP, i.e. for YP to move out of XP, YP first has to move to the edge of XP, movement which has to precede the movement of XP itself given the cycle. The merger of YP and XP results in an unlabeled element, as is generally the case with successive-cyclic movement, as discussed above. For Chomsky, phases are CPs, vPs, and DPs (I am ignoring other proposals made in the literature regarding what counts as a phase since they do not affect the current discussion; (11) in fact most naturally fits with Bošković's (2014) phasal system, discussed below). But the result of merger of YP and XP is none of these; it in fact does not have a label at all, hence it does not count as a phase (in other words, phases require label-determination (see the discussion below), hence unlabeled objects cannot be phases).

To take a concrete case, consider movement out of subjects:

(16) *I wonder who_i [friends of t_i] left

Since subjects are phases (likely only DPs), whatever moves out of a subject must first move to its edge. Given the cycle, this needs to happen before the subject moves from its base-position in vP. As discussed above, merger of *who* and DP in (17), the abstract structure of the relevant part of (16), yields an unlabeled element, which, not having a label, is not a phase. The italicized phrase

[11] It may be worth noting here that Bošković (2015, 2016b) provides a labeling-based deduction of a number of locality effects (where the crucial component of most of the deductions is that a constituent formed by a step of successive cyclic movement is not labeled when it is created), including a generalized version of the Complex NP Constraint, which extends to all complements of all lexical heads (movement being banned from complements of lexical heads), CED effects, Richards's (2001) tucking in effect, the full range of Comp-trace effects (in declarative, relative, and extraposed clauses), and the effect that wh-movement has on agreement in languages like Kinande. In this respect, the current paper, which focuses on the traditional ban on movement out of moved elements, can be considered to provide another piece to this overall picture, the ultimate goal being to provide a unified, labeling-based account of all locality-of-movement effects.

marked with ? in (17) then cannot undergo movement, given (11). The account extends to all the cases of movement out of moved elements discussed in section 1.[12] [13]

(17) $[_{IP}$ I ...$[_{vP}$ *[$_{?}$ who [$_{DP}$ subject]]*]]

2.2. Remnant movement

A question now arises regarding remnant movement: does the analysis given above block traditional remnant movement in general? In fact, it doesn't. With remnant movement, movement of YP out of XP takes place while XP is still located in situ; XP is then free to move after YP moves. Consider for example remnant vP fronting (see Huang 1993 for evidence that the subject starts within the fronted vP in (18)).

(18) $[_{vP}$ t_i kiss Mary$]_j$ $[_{IP}$ Jane$_i$ did t_j]

As discussed in Chomsky (2013), the result of merger of the subject and vP in (18) cannot be labeled (cf. (19a)). The subject moves to SpecIP; since its trace is ignored for the purpose of labeling, the relevant element is labeled as vP (19b). Since vP is a phase it is allowed to move (18).

(19) a. $[_{?}$ Jane $[_{vP}$ kiss Mary]]
b. $[_{IP}$ Jane$_i$ $[_{vP}$ t_i kiss Mary]]

[12]This will become clear given the discussion later in the text regarding what counts as a phase (on the phasehood of PPs (cf. (10)), see Bošković 2013a, 2014 and the discussion below).

[13] It is worth noting here that under Saito's (2016a) approach to labeling in Japanese, the above account of (1) would predict that (1) can be violated in some cases in Japanese. Such violations are indeed found in Japanese; thus scrambling out of scrambled elements is clearly possible in Japanese, as noted in footnote 7 and illustrated by (i). Saito argues that due to the lack of agreement, labeling in Japanese proceeds quite differently from the feature-sharing languages discussed in Chomsky (2013) and in this paper. According to Saito, due to the lack of agreement Japanese lacks feature sharing. The way labeling is accomplished in Japanese when two phrases are merged is that certain inflectional elements, in particular Case-markers in the case of NPs/DPs, serve as antilabeling devices, making the relevant element invisible for labeling (Saito 2016a,b accounts for a number of properties of Japanese in these terms). Consider (i) from this perspective. Under Saito's analysis, when *sono hon-o* moves to the edge of the most embedded clause in (i) (the CP in bold), no labeling problem arises in spite of the lack of feature-sharing since the Case-marker serves to make *sono hon-o* invisible for the labeling algorithm. Successive-cyclic movement then does not delabel its target here; as a result, the bolded CP in (i), which is targeted by successive-cyclic movement, can still undergo movement. Incorporating Saito's analysis of Japanese into the current deduction of (1) thus captures the exceptional status of (i) with respect to (1). A more comprehensive evaluation of Japanese from this perspective is, however, beyond the scope of this paper.

(i) [Sono hon-o$_1$ [John-ga $[_{CP}[_{IP}$**$[_{CP}$ t_1** $[_{IP}$ Mary-ga t_1 katta to]]$_2$ $[_{IP}$ Bill-ga t_2 itta]] to] omotteiru]].
that book-ACC John-NOM Mary-NOM bought that Bill-NOM said that think
'That book$_1$, John thinks that [that Mary bought t_1]$_2$, Bill said t_2.' (Bošković and Takahashi 1998:357)

The system thus makes a difference between cases like (16) and cases like (18), the crucial difference being that in the latter case, XP moves after YP moves out of it, while in the former case, XP moves before YP moves out of it. This difference has an effect on the labeling of XP, which is responsible for the contrast in question.

3. Extensions and exceptions to the ban on movement out of moved elements

3.1. The basic case

The deduction of the ban on movement out of moved elements proposed in section 1, which did not introduce any new mechanisms but simply relied on independently-made existing proposals regarding phases and labeling,[14] provided a new perspective on the ban on movement out of moved elements. Under the analysis from section 2.1., the problem with movement of YP out of moved element XP does not arise at the point of movement of YP out of XP (as in the previous accounts of the ban in question); the problem arises already with the movement of XP, i.e. XP itself cannot undergo movement in this case—any later movement out of XP is then trivially blocked. In other words, it is not that movement of XP freezes its internal structure; rather, movement of YP to the edge of XP (for successive cyclicity reasons, as discussed below) prevents movement of XP.

All the cases given above to illustrate (1) involve successive-cyclic movement via the edge of XP. As a result, they also involve movement of the Spec itself since it is the very nature of successive-cyclic movement that YP undergoing it cannot stay in an intermediate Spec for independent reasons. This is the reason why they involve movement from a moved element. This movement has masked the real reason for the ill-formedness of the relevant cases, leading to the 'illusion' that this later movement is responsible for it. Since under the current analysis movement out of a moved element is incidental in the relevant cases, the violation taking place before such movement occurs, the proposed analysis also extends to cases where movement out of a moved element does not take place. One such case involves the puzzling immobility of V-2 clauses in German. As Reis (1997) notes (see also Wurmbrand 2014, Holmberg 2015), V-2 clauses in German cannot undergo movement. Thus, a V-2 clause moves to SpecIP in (20a) and to SpecCP in (20b). Both examples are unacceptable, in contrast to (20c), where the V-2 clause stays in situ.

(20) a. *weil [$_{CP}$ den Peter mag niemand] allgemein bekannt ist.
since the.ACC Peter likes nobody.NOM commonly known is
'since nobody likes Peter is commonly known' (Wurmbrand 2014: 155)

[14] Of course, one can question the assumptions in question. Comprehensively examining the motivation for these assumptions is way beyond the scope of this work; the scope of this work is more modest: simply to point out that the assumptions in question deduce (1) for the vast majority of the relevant cases, which was done in section 2.1, and to explore whether the assumptions would allow for any legitimate violations of (1), which will be done in this section.

b. *[Er$_i$ sei unheimlich beliebt], möchte jeder$_i$ gern glauben.
he is.SUBJ immensely popular would.like everyone like believe
'Everyone would like to believe he is immensely popular.' (Wurmbrand 2014: 155)

c. Sie sagte den Peter mag niemand.
she said the.ACC Peter likes nobody.NOM (Wurmbrand 2014: 153)

V-2 clauses are notorious for their non-pickiness in that anything can fill their SpecCP. This has led to proposals that such clauses do not involve agreement at all—they involve EPP without Agree (see Haegeman 1996, Jouitteau 2008, Roberts 2004, Roberts and Roussou 2002, among others). Since feature-sharing is tied to agreement, the most natural interpretation of this is that V-2 clauses do not involve feature-sharing, which in turn means that they are not labeled. But that gives us an immediate account of their immobility given that, as discussed above, unlabeled elements cannot undergo movement. Under accounts like Roberts (2004), the V-2 movement to SpecCP is treated essentially like successive-cyclic movement in Chomsky (2013): neither involves an agreement relation. Under the current analysis, phrases with non-agreeing Specs cannot undergo movement, since a non-agreeing Spec delabels the relevant phrase, making it impossible for it to move. It is then not surprising that, just lake phases that host successive-cyclic movement, V-2 clauses cannot undergo movement.[15]

Returning now to the cases which do involve movement out of a moved element, in all the cases of (1) discussed above, YP moves to the edge of XP (this was in fact the reason why XP could not undergo movement). What would happen if YP is base-generated at the edge of XP? Finding such cases, where we can be sure that YP is base-generated at the edge of XP, is not easy. Before attempting to find such cases, consider what we may expect to find with respect to such cases in the current system. If YP is base-generated at the edge of XP, and YP is otherwise able to stay at the edge of XP, this means that the result of merger of YP and XP can be labeled. Assuming both YP and XP to be phrases, it follows then that YP and XP undergo feature sharing. This crucially affects the timing of labeling that is relevant to the deduction of (1) proposed above.

In the cases we have discussed so far (which involve successive-cyclic movement), labeling of the YP-ZP merger is simply not possible (due to the lack of feature-sharing); we had to wait for YP to move away so that YP can be ignored for the purpose of labeling (which was too late for the concerns from section 2.1). The wait is not forced in the case of labeling via feature

[15]The analysis implies that some unlabeled objects can still be interpreted at the interface, which can be taken to be what is special about V-2 clauses. Note, however, that Bošković (2015) suggests that traditional adjoined structures are not labeled (following Hornstein and Nunes 2008, Hunter 2010), which can be extended to V-2 clauses if we assume that such clauses do not involve movement to SpecCP but CP-adjunction, reserving movement to Spec only for cases involving agreement/feature-sharing, see Bošković 2015; see also Bošković 2016c for an alternative account that also unifies the immobility of V-2 clauses with (1) but where V-2 clauses are labeled.). Notice also that the lack of labeling does not fully strip V-2 clauses off phasehood. The result of the merger of C and IP is still labeled as an instance of a head-phrase merger, which is enough to send the IP to spell-out.

sharing. In other words, while in the case of successive-cyclic movement (i.e. the non-feature sharing case), labeling must be delayed, since it is simply not possible to label until one element moves away, with feature-sharing Spec-merger labeling is possible at the creation of the relevant structure—movement away is not required to make labeling possible in this case. The analysis presented in section 2 then makes a prediction: (1) should not hold for the cases where the relevant element (i.e. an element that undergoes movement out of a moved element) is base-generated at the phasal edge and is otherwise able to stay in that position, an indication that it undergoes feature-sharing with the element it merges with in the labeling framework (for ease of exposition, I will refer to such elements as base-generated Specs[16]). (1) should be violable in such a case, given that feature-sharing configurations result in labeling. Movement out of a moved element should then be allowed in this particular case since the labeling problem of the kind discussed in section 2.1 would not arise here because all labeling would take place before the relevant movements.[17]

The upshot of the above discussion is that under the analysis presented in section 2.1., unless additional assumptions are adopted (1) is not expected to hold with base-generated Specs, which undergo feature sharing. In other words, movement out of moved elements should be possible for base-generated Specs of the moved elements. However, while the prediction is clear, as noted above, it is rather difficult to find clear cases of the relevant type, where we can be sure that the relevant element is base-generated at the phasal edge (we also need to make sure that the edge itself can independently move). In fact, I am not aware of any clear cases of that sort in English.

Consider for example possessors (having in mind the issue whether possessors can move out of a moved DP). English possessors are often assumed to be base-generated in SpecDP, where

[16] The reader should bear in mind that not all base-generated Specs undergo feature sharing (however, those that do not must move). Thus, Chomsky (2013) argues that the subject in SpecvP and its sister do not undergo feature sharing in English (though he suggests that they may do so in languages like German, where subjects can remain in SpecvP (see Wurmbrand 2006); see also Ott in press on labeling in German), which then forces subject movement in English (in fact, the most natural way of capturing the situation where a Spec cannot remain in its base-generated position in the labeling framework is to assume that the configuration in question causes a labeling problem, hence it forces movement).

[17] Following Bošković (2015), I assume that labeling can take place as soon as it is possible (see also Rizzi 2016, Saito 2016, Shlonsky 2014, who also argue for this position), which means that in the case of feature-sharing, labeling can take place prior to any movement of the elements that undergo feature-sharing.

The situation is slightly more complicated in Chomsky's (2013) approach to the timing of labeling, but the result is the same. Chomsky assumes that labeling takes place at the phasal level, for the whole phase. Nothing changes with respect to the prediction discussed in the text under this approach: a label for the result of a merger of a base-generated Spec of phase XP which undergoes feature sharing with the element that it is merged with is determined at the phasal level of XP, hence prior to any movement of the elements in question (crucially, prior to the movement of XP).

Bošković's (2016b) proposal that the result of a head-phrase merger is labeled immediately while the result of a phrase-phrase merger is labeled as in Chomsky (2013), when the structure is sent to the interfaces, can also be accommodated if the latter is interpreted as in Chomsky (2013), with the labeling for such cases taking place at the phasal level for the whole phase.

they undergo agreement/feature-sharing with D.[18] However, a number of authors have argued that their surface position is SpecPossP (see for example Kayne 1994), PossP being dominated by DP, which means that the possessor is not located at a phasal edge, hence would need to undergo (non-feature sharing) successive-cyclic movement to SpecDP if it is to move outside of the DP. Finally, possessors simply do not move outside of their DP in English, hence (1) cannot be tested with possessor extraction in English anyway. Serbo-Croatian (SC) possessors, however, provide a relevant case, hence can be taken as a testing ground to tease apart the different possibilities regarding the timing of labeling discussed above.

Consider the following contrast between English and SC, noted in Despić (2011, 2013).

(21) a. His_i latest movie really disappointed Kusturica_i.
b. Kusturica_i's latest movie really disappointed him_i.
c.*Kusturicin_i najnoviji film ga_i je zaista razočarao.
Kusturica's latest movie him is really disappointed
d.*Njegov_i najnoviji film je zaista razočarao Kusturicu_i.
his latest movie is really disappointed Kusturica

Under the assumption that traditional Specs c-command out of the phrase where they are located, Kayne (1994) takes the acceptability of (21a-b) to indicate that English possessors are not located in SpecDP, but in the Spec of a lower phrase, SpecPossP, with the DP confining the c-command domain of the possessor. Despić (2011, 2013) observes that in SC, a language without articles which has been argued by a number of authors to lack DP (for example Corver 1992, Zlatić 1997, Trenkić 2004, Bošković 2005, 2012, 2014, Marelj 2008, 2011, Despić 2011, 2013, Runić 2014a,b, Takahashi 2012, Talić 2014, 2016), possessors do c-command out, as indicated by the binding violations in (21c-d), which contrast with English (21a-b). Despić takes the contrast in question as indicating that DP is missing in SC, with the possessor located in the highest projection of the traditional NP.[19] Since possessors can stay in that position, they must be undergoing feature-sharing labeling in that position—they in fact overtly agree in phi-features and case with the noun.[20] (Note that following Bošković 2012, Despić 2013 argues that the traditional NP is a bare NP in such cases in SC, hence the possessor is located at the edge of the NP.) Furthermore, possessors in principle can undergo movement in SC, as shown by (22).[21] Moreover, Bošković

[18] See, however, see Alexiadou (2005), Munn (1995), and Radford (2000), who argue that possessors are base-generated within NP and move to SpecDP from an NP-internal position.
[19] The term TNP (traditional Noun Phrase) is used neutrally, for whatever the categorial status of the relevant element is.
[20]They thus differ from adnominal complements. While the possessors in question precede the noun and agree with it in case and phi-features, nominal complements follow the noun and are assigned genitive case by the noun—they do not agree with the noun in either case or phi-features.
[21]It should be noted that there are accounts of possesor-fronting constructions in terms of remnant movement (Abels 2003, Franks and Progovac 1994) and scattered deletion (Fanselow and Ćavar 2002).

(2013a, 2014) argues that the highest projection in the extended domain of a noun (or any lexical category) functions as a phase, which makes NP a phase in SC due to the lack of DP;[22] the reader is referred to Bošković 2013a, 2014 for a number of arguments to this effect.

(22) Jovanovu$_i$ je on vidio [$_{NP}$ t$_i$ sliku]
John's.acc.fem.sg is he seen picture.acc.fem.sg
'He saw John's picture.'

We thus have here everything we need to test the options noted above. In (22), the phrase from which the possessor is extracted could be located in the base position. We need an example where this is clearly not the case. In fact, possessor extraction is possible in such cases too. In (23a), the possessor is extracted out of a fronted object, and in (23b) it is extracted out of a subject of a passive construction which nevertheless precedes the verb. Both of these cases involve movement out of a moved element. Another case is given in (23c), where the subject precedes a sentential adverb, indicating movement to SpecIP prior to possessor extraction. (For ease of exposition, I only indicate case agreement below.)

(23) a. Jovanovu$_i$ je on [$_{NP}$ t$_i$ sliku]$_j$ vidio t$_j$
John's.acc is he picture.acc seen
'He saw John's picture.'
b. Jovanova$_i$ je [$_{NP}$ t$_i$ slika]$_j$ ukradena t$_j$
John's.nom is picture.nom stolen
'John's picture was stolen.'
c. Jovanov$_i$ je [$_{NP}$ t$_i$ prijatelj] vjerovatno otpustio Mariju.
John's.nom is friend.nom probably fired Maria.acc
'John's friend probably fired Maria.'

The above discussion indicates that (1) can be violated (i.e. it does not hold) if the element undergoing the movement that tests (1) is base-generated at the edge of the relevant phrase. As discussed above, this is exactly what is expected under the current deduction of (1) since labeling via feature-sharing resolves the problem that arose with respect to labeling with the cases discussed in section 2.1, given that labeling here takes place before the relevant movement occurs.

Consider the full derivation of (23a) from this perspective (under the assumptions discussed above). The possessor is base-generated at the NP-edge, where it undergoes feature-sharing so that the TNP in question is labeled (24a). The TNP in question is a phase under

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They both, however, face rather serious problems (see Bošković 2005, 2013a, Stjepanović 2010, 2011, Talić 2014, Despić 2015, among others).

[22]PossP would be a phase if it is present. What is important here is that the possessor is located at the edge of the highest projection of the TNP in SC and that that projection is a phase, both of which have been extensively independently argued for.

Bošković's (2014) approach to phases, hence it can undergo movement, as in (24b), without violating (11). (Under the most natural interpretation of (23a), the movement in question is focus movement--*sliku* is focalized.) After the object moves to the preverbal position (undergoing focus movement), the possessor undergoes extraction (24c).[23]

(24) a. vidio [$_{NP}$ Jovanovu sliku]
seen John's.acc picture.acc
b. [$_{NP}$ Jovanovu sliku]$_j$ vidio t_j
c. Jovanovu$_i$ je on [$_{NP}$ t_i sliku]$_j$ vidio t_j

What is important for us is that while (23a) violates (1), it still conforms with the deduction of (1) proposed in section 2.1 (more precisely, what was deduced in section 2.1. is actually a modified version of (1); (23a) conforms with this modified version of (1) which was deduced above although it violates (1) itself). Notice also that, as expected given the above discussion, the TNP with the possessor remaining in its Spec can also move.

(25) [Jovanovu sliku]$_j$ je on vidio t_j
John's.acc picture.acc is he seen

Another relevant case involves attributive adjectives, given that, as argued in Bošković (2013a, 2014), adjectives project phasal domains. (More precisely, Bošković 2013a, 2014 argues that the highest projection in the extended domain of an adjective is a phase; I will use the term traditional AP (TAP) to refer to AP and any functional projections in the extended domain of AP; the highest projection in the TAP functions as a phase in Bošković's 2014 system.) What is important for our purposes is that intensifier extraction from APs is possible in SC, as discussed in Talić (2016) and illustrated by (26).

(26) ?Izuzetno$_i$ su kupili [t_i skup] automobil.
extremely are bought expensive car
'They bought an extremely expensive car.'

[23] What about extraction of genitive nominal complements, which are not generated at the NP-edge? The problem is that extraction of such complements is in general somewhat degraded in SC, as in (ia) (see Bošković 2014, Zlatić 1994; Bošković argues that the reason why such constructions are degraded in SC is that they must involve movement from the complement to the Spec of NP (NP being a phase in SC), which is disallowed (see Abels 2003)). Such extraction does, however, get even worse when the remnant is fronted, as in (ib). This is in contrast to the case of possessors, where most speakers actually prefer constructions where the remnant is focus-fronted.
(i) a. ??Kojeg doktora$_i$ si ti vidio [prijatelja t_i]?
which doctor$_{GEN}$ are you seen friend$_{ACC}$
'Which doctor did you see a friend of?'
b. *Kojeg doktora si ti prijatelja vidio?

Such extraction is not possible in English—the English counterpart of (26) is unacceptable. Independently of our current concerns, Talić (2016) argues that the difference between languages like SC, which allow such extraction, and languages like English, which disallow it, is that the intensifier is base-generated at the edge of the TAP phase in SC, while it is base-generated in a lower position in English, and has to undergo successive-cyclic movement to the edge of the TAP phase if it is to move out of it, given the PIC. Talić provides an analysis where this movement leads to a violation.[24] Under Talić's analysis, the SC construction in question then provides another test case, given that, in contrast to English, in SC the intensifier is base-generated at the edge of the TAP phase (since it can stay in this position it must be able to undergo feature-sharing).

Now, in contrast to English, SC allows left-branch extraction of APs (see Bošković 2005, 2012).

(27) Skup_i su kupili [t_i automobil].
expensive are bought car
'They bought an expensive car.'

Crucially, intensifier extraction is possible out of APs that undergo movement. Thus, in (28), the AP itself has moved out of its TNP , with the intensifier moving out of the moved AP.[25]

(28) ?Izuzetno_i su [t_i skup] kupili automobil.
extremely are expensive bought car
'They bought an extremely expensive car.'

This is then another instance of movement out of a moved element that is predicted to be acceptable under the current account of (1).

[24] More precisely, an antilocality violation (see Talić's work for details of the analysis). Talić actually argues that the intensifier is generated in the same position in both English and SC, but the TAP has a functional projection above the base-generated position of the intensifier in English, but not in SC. (More generally, Talić argues that just like the structure of the TNP is richer in English than in SC, the structure of the TAP is richer in English than in SC, the same factor being responsible for both differences. This enables Talić to provide a unified account of the SC/English contrast with respect to constructions like (26) and the SC/English contrast with respect to AP left-branch constructions like (27), discussed directly below.) As a result, the intensifier is not base-generated at the phasal TAP edge in English, while it is in SC, which is what is important for our purposes. (Talić's account of the SC/English contrast with respect to constructions like (26) (which she extends to AP left-branch constructions like (27)), may actually also be extendable to the SC/English contrast with respect to constructions like (31) below, which are also unacceptable in English.)

[25] The example is somewhat marginal for independent reasons having to do with the discourse properties of left-branch extraction examples, which need not concern us here.

3.2. On the Adjunct Condition

In this section I will discuss the Adjunct Condition, i.e. the ban on extraction out of adjuncts, illustrated by (29).

(29) ?*What$_i$ did you fall asleep [after John had fixed t_i]?

What this section will show is that adjuncts exhibit the same pattern of extraction as moved elements, suggesting that a unification may be in order here (see also Bošković 2016d for an extension of the current account of (1) to the islandhood of inherently Case-marked elements, noted in Starke 2001). Takahashi (1994) in fact attempts to unify the Adjunct Condition (i.e. the ban on extraction out of adjuncts) with (1), though in a rather roundabout way. There may, however, be a more natural extension of (1) to the Adjunct Condition under the current analysis of (1).

There are two types of treatments of adjuncts in the literature: a more traditional approach where adjuncts are adjoined to, or function as additional Specs of, existing phrases, for example vP or VP, and a Cinque (1999)-style analysis, where adjuncts are located in the Specifiers of dedicated functional projections, each traditional adjunct being located in the Spec of a distinct FP. Suppose now that both of these are correct: adjuncts start as Specs of/adjuncts to existing phrases (which are not adjunct-dedicated) like vP or VP, and then move to the Spec of Cinque-style FPs.[26] Movement out of adjuncts will then involve movement out of moved elements. Since elements that function as adjuncts (typically CPs, PPs, and DPs) have all independently been argued to be phases (see Bošković 2013a, 2014), the above account of (1) can then extend to the Adjunct Condition. Interestingly, it turns out that extraction out of adjuncts is allowed exactly in the context where extraction out of moved elements is allowed, which may be interpreted as an argument for a unified account of the two.

Under the analysis suggested above movement out of an adjunct involves extraction out of a moved element. Given the discussion from the previous section, the analysis makes a prediction: the Adjunct Condition effect should be voided with base-generated Specs, i.e. in the case of elements that are base-generated at the adjunct edge. There is evidence that this is indeed the case. Thus, *koliko/izuzetno* are plausibly base-generated at the edge of the adjunct in SC (30). Importantly, they are allowed to move out of it.[27]

[26] I am generalizing here Cinque's analysis to all traditional clausal-level adjuncts. (I leave the details of implementation open: it is possible that we are dealing (in some cases) with rightward movement, or leftward movement with pronunciation of a lower copy motivated by prosodic reasons (e.g. the prosodic heaviness of clauses; see Bobaljik 1995, Bošković 2001, Bošković and Nunes 20007, Franks 1998, Landau 2003, among many others, on the mechanism in question).)

[27] Not surprisingly, (i) is also possible.

(i) [Koliko/izuzetno visoko] je on skočio
how/extremely high is he jumped

(30) Koliko/Izuzetno$_i$ je on [t_i visoko] skočio
how extremely is he high jumped
'How high did he jump?/He jumped extremely high.'

Another case which can be handled in the same way is given below.

(31) Izuzetno$_i$ se on [t_i loše] ponašao?
extremely is he bad behaved
'He behaved extremely bad.'

Turning now to TNP adjuncts, SC is rather productive regarding the possibility of TNPs functioning as adjuncts. Such cases are important in that we can take advantage of possessor extraction to test the current proposal that extraction out of an adjunct is in principle possible for elements base-generated at the adjunct edge. One relevant case is given below, where an instrumental nominal functions as an adjunct (see Bošković 2006 for discussion of such adjuncts).[28]

(32) Trčao je šumom.
run is forest.instr
'He ran through a/the forest.'

That the instrumental nominal in (32) is indeed an adjunct is confirmed by extraction. First, extraction of the nominal in question out of an island yields an ECP-strength, not a Subjacency-strength violation, as illustrated by the contrast in (33).

(33) a. *Šumom$_i$ se pitaš [kad je trčao t_i].
forest.instr refl wonder when is run
'You wonder when he ran through a/the forest.'
b. ??Šumu$_i$ se pitaš [kad je posjekao t_i].
forest.acc refl wonder when is cut-down
'You wonder when he cut down a/the forest.'

[28] It may be worth noting that the word order in SC is rather free; thus *Šumom je trčao* is also possible. In fact, since even participles that follow auxiliaries in SC undergo movement (see Bošković 2001, Stjepanović 1998, 1999), participles are not a reliable diagnostic for determining the structural position of elements that are adjacent to them.

Furthermore, while extraction of genitive complements of nouns is in general somewhat degraded in SC (cf. footnote 23), (34a), which involves extraction out of the nominal under consideration, is clearly worse than (34b), which involves extraction out of an object.

(34) a. *Moga djeda$_i$ je trčao [šumom t_i].
my.gen grandfather.gen is run forest.instr
'He ran through the forest of my grandfather.'
b. ??Moga djeda$_i$ je volio [šumu t_i].
my.gen grandfather.gen is loved forest.acc
'He loved the forest of my grandfather.'

Now, *my grandfather* must undergo movement to the edge of the adjunct TNP in (34a) (or it could not move out of it, the TNP being a phase). Under the current analysis, we would predict that movement out of the adjunct TNP should be possible if the element moving out of it is base-generated at its edge. The prediction can be tested by using possessor extraction. As discussed above, possessors are base-generated at the TNP-phase edge in SC. We then predict that in contrast to extraction of the complement of the TNP-adjunct in question, extraction of the possessor of the TNP-adjunct in question should be possible. This is indeed the case.

(35) Ivanovom$_i$ je on trčao [t_i šumom].
Ivan's.instr is he run forest.instr
'He ran through Ivan's forest.'

The contrast between (34a) and (35) is exactly what is expected, given that the moving element has to move to the edge of the relevant TNP in (34a) while it is base-generated at its edge in (35).

Another relevant case is provided by a particular type of cognate objects. There is a great deal of literature regarding the argument/adjunct status of cognate objects. Marelj (2015) shows that such objects do not behave uniformly regarding the issue in question in SC. In particular, she shows that accusative cognate objects like the one in (37) are arguments, while instrumental cognate objects like the one in (36) are adjuncts. Notice in this respect that the verb in (36) is ergative (the only theta-role the verb has is discharged by *he*), and that (36) can be used to answer an adjunct question like the one in (38). (Furthermore, the cognate object in question behaves like the adjunct TNP from (32) with respect to the extraction tests noted above, see Marelj 2015. See Marelj 2015 for a number of additional arguments for the adjunct status of the nominal in question; she shows that the cognate objects in (36) and (37) consistently show different behavior with respect to the relevant tests.)

(36) Umro je prirodnom smrću.
died is natural.instr death.instr
'He died a natural death.'

(37) Sanja san
dreams.acc dream
'He dreams a dream.'
(38) Kako je umro? Užasnom smrću.
how is died terrible.instr death.instr
'How did he die? A horrible death.'

Given that the nominal in question is an adjunct, the prediction is that extraction out of it will still be possible for elements generated at its edge. (39) involves extraction of an agreeing possessor that was discussed above. Importantly, the example is fully acceptable.

(39) Isusovom je umro [t_i smrću].
Jesus'.instr is died death.instr
'He died the death of Jesus.'

Quite independently of the analysis proposed here, the data pertaining to extraction out of adjuncts discussed above suggest that the problem with extraction out of adjuncts is getting to the edge of the adjunct; if an element can be base-generated at the edge it can extract. This in itself is potentially a rather important point regarding the still mysterious nature of the ban on extraction out of adjuncts. While I certainly do not rule out the possibility of an alternative analysis, we have seen that the account of the Adjunct Condition suggested here, which ties it to the generalization in (1), can account for this state of affairs. The account, however, has far reaching consequences which cannot be properly explored within the confines of this paper.

4. Restating (1)

If correct, the above discussion indicates that the generalization in (1) is fundamentally misguided. The right generalization is in fact (40), which we have seen above can be deduced from independent assumptions, i.e. it is a theorem.[29]

(40) Phases that host successive-cyclic movement (at their edge) cannot undergo movement.

There is nothing that is in principle wrong with movement out of moved elements; what was wrong in the relevant cases which were used in the literature to motivate positing (1) was that the element that was later moved out of could not undergo movement itself. A phase with an agreeing Spec (see footnote 29) can undergo movement, but a phase with a non-agreeing Spec (which is the

[29]As discussed above, the issue here is that the relevant phrases are actually not phases; for ease of exposition I ignore this point here. (Note also that (also for ease of exposition) in the following discussion I will interchangeably use the terms feature-sharing and agreeing.)

case with successive-cyclic movement) cannot. Since non-agreeing Specs cannot stay where they are for independent reasons (i.e. that's the very nature of successive-cyclic movement), all the cases of the latter type also involve movement of the Spec itself, which means that they involve movement out of a moved element. This has led to the "illusion" that this later movement is what is responsible for the ungrammaticality of the relevant constructions, which this paper has argued is not the case. That this later movement is indeed accidental was confirmed by the extension of the proposed account of (40) to the immobility of V-2 clauses, where movement out of a moved element does not even take place. In fact, taking the extension to the immobility of V-2 clauses into consideration, (40) can be restated as in (41).

(41) Phases with non-agreeing Specs cannot undergo movement.

(41) in turn can be restated as in (42) within the labeling framework.

(42) Unlabeled elements cannot undergo movement.

The analysis proposed in the paper, which took the traditional ban on movement out of moved elements (i.e. (1)) as the point of departure, in fact deduced (41)-(42), rather than (1).

In principle, as long as nothing else interferes, it should then not be too difficult to find acceptable cases of movement out of moved elements. In fact, it appears that we do not need to confine our attention to base-generated Specs, as in the discussion in section 3.1. Even elements that move to a feature-sharing position could in principle provide relevant cases: an agreeing Spec of XP (even if it is created by movement) should be able to move out of XP after XP undergoes movement. The problem is that in almost all relevant cases something else interferes, in particular, the criterial freezing effect discussed in a number of works (see for example Epstein 1992, Rizzi 2006, Bošković 2008b).[30]

[30] Some languages have often been assumed to involve morphologically-manifested agreement with successive-cyclic movement out of declarative CPs (i.e. in intermediate SpecCPs). However, such languages have also been quite convincingly argued to involve very different derivations in the relevant cases, which is not surprising under the labeling approach to successive-cyclic movement, where the impossibility of labeling essentially drives such movement. Most such languages do not actually involve agreement between a wh-phrase and an intermediate C. Rather, what happens is that a wh-phrase that moves out of a clause disrupts object agreement between the higher verb and the clause. Thus, in Selayarese, one of the standard cases of putative intermediate wh-agreement languages, there is actually no wh-C agreement. Rather, object agreement that normally happens between a higher verb and its clausal complement is blocked when a wh-phrase moves out of the clausal complement. Bošković (2008a) in fact analyzes this situation in terms of (1): Agreeing clauses undergo object shift. A wh-phrase cannot move out of an agreeing clause since such movement would involve movement out of a moved element. Bošković also suggests a similar account of the Irish case; however, Noonan (1999) argues that such cases in fact involve an even more different derivation, with what was considered to be an agreeing C actually being an object shift marker. As discussed in Bošković (2008a), Kinande may in fact be the only uncontroversial case of a language with intermediate wh-agreement, since in this language wh-phrases can belong to a

Consider in this respect French (43). Here, the wh-phrase moves to the SpecCP of the clause embedded under *demandé* 'ask'. This clause itself then undergoes movement, which is followed by movement of the wh-phrase out of the CP in question.

(43) *Où$_i$ Anne a dit que [$_{CP}$ t$_i$ [$_{IP}$ Pierre a embrassé Marie t$_i$]]$_j$ Jean a demandé t$_j$
where Anne has said that Pierre has kissed Marie Jean has asked
'Anne said that Jean asked where Pierre kissed Marie.'

(43) thus involves movement out of a moved element, the interrogative CP. The interrogative CP itself can move here, as indicated by (44a-b), which are clearly better than (43).

(44) a. [$_{CP}$ Où$_j$ [$_{IP}$ Pierre a embrassé Marie t$_j$]]$_i$, Jean a demandé t$_i$.
where Pierre has kissed Marie Jean has asked
'Jean asked where Pierre kissed Marie.'
b. ?Anne a dit qu' [$_{CP}$ où$_j$ [$_{IP}$ Pierre a embrassé Marie t$_j$]]$_i$, Jean a demandé t$_i$.
Anne has said that where Pierre has kissed Marie Jean has asked

Is then (43) an instance of (1) where there is nothing wrong with the movement of the element that is later to be moved out of (namely, the most deeply embedded interrogative clause), as indicated by (44), which would be unexpected under the current analysis? The answer is no, since even if the CP in question itself does not move, wh-movement out of it is impossible.

(45) *Où$_i$ Anne a dit que Jean a demandé [$_{CP}$ t$_j$ [$_{IP}$ Pierre a embrassé Marie t$_i$]] ?
where Anne has said that Jean has asked Pierre has kissed Marie
'Anne said that Jean asked where Pierre kissed Marie.'

(45) shows that (1) is irrelevant to the ungrammaticality of (43). The wh-phrase cannot move out of the interrogative CP in question regardless of whether this CP undergoes movement or not. Of course, what we are dealing with here is what Rizzi (2006) referred to as the criterial freezing

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number of different classes, which are reflected in the morphological make up of the complementizers (both final and intermediate complementizers). This rules out the possibility of an account in terms of object agreement (cf. the case of Selayarese). However, as discussed in Schneider-Zioga (2009), Bošković (2008a), and Boeckx (2003), the relevant cases in Kinande do not involve movement at all: the fronted wh-phrases are blocked from reconstructing into lower positions and they are also island-insensitive (they essentially involve resumptivization). In light of this, I will not discuss such cases here. (At any rate, space considerations prevent a discussion of a number of potentially relevant cases. The cases discussed in the text should, however, indicate what we may expect to find, i.e. how the potentially relevant cases not discussed here should be analyzed. Thus, if, more generally, there are cases that involve feature sharing with the steps of true successive-cyclic movement (see here van Urk 2015), the expectation would be that the freezing effect discussed in this paper would not hold in such cases; one potentially relevant case, which involves quantifier float, is discussed below.

effect (see also Epstein 1992, Bošković 2008b). An interrogative SpecCP is a position from which further movement is not possible, i.e. Q/wh-feature sharing has a freezing effect on movement (once *où* moves to the Spec of the most embedded CP, which is an interrogative SpecCP, it cannot undergo further movement). While the current account of (1), which actually restates it as (40), predicts that feature-sharing Specs can in principle move out of moved elements, the problem is that most feature-sharing Specs are actually criterial Specs, hence banned from undergoing movement for independent reasons (whether they move from a moved element, or an element located in its base-generated position). This is in fact the reason for the ungrammaticality of (40).

Recall, however, that under the current account of (1), later movement out of the moved element is actually irrelevant; the issue is whether the element in question can move in the first place. While phases hosting successive-cyclic movement cannot move, phases hosting the final step of movement can in principle move. The grammaticality of examples like (44) then actually provides a confirmation of the current analysis.

Luis Vicente (p.c.), however, brings up a case that is similar to (43) but where the criterial freezing effect is not involved. It concerns German and Dutch PPs with *r*-pronouns, like the ones in (48) (I illustrate the relevant point with respect to German, but the discussion extends to Dutch). *R*-pronouns are exceptional in that they must precede the preposition, although German adpositions are otherwise always prepositional. Compare in this respect (46) and (47).

(46) a. davon/damit
it.of/it.with
b. *von da/*mit da
(47) a. von/mit dem Mann
of/with the man
b. *dem Mann von/mit

Focusing on *davon*, *davon* is standardly analyzed as involving movement of *da* to SpecPP (or a higher position in the extended projection of the preposition; I will refer to the former below for ease of exposition). Since *da* can stay in that position, and is in fact located in that position when the PP is moved, as in (48), it must be the case that it undergoes feature-sharing with its sister, which makes labeling possible.

(48) Er hat davon$_i$ noch nicht [das Vorwort t_i] gelesen.
he has it-of yet not the foreword read

Notice that the DP P order is highly restricted in German; it is restricted to the small group of *r*-pronouns and about twenty prepositions. This in itself may be taken to suggest that agreement/feature-sharing is involved here—only elements that undergo the relevant agreement/feature-sharing occur in this configuration (following van Riemsdijk 1997, I will refer to the feature in question as R-feature (see van Riemsdijk 1997 for some discussion of the nature

of this feature)). At any rate, what is important for our purposes is that the fact that *da* must move to SpecPP (cf. (46b)) and stays in SpecPP (cf. (46a), (48)) provides evidence that movement of *da* to SpecPP does not take place strictly for reasons of successive-cyclicity, i.e. *da* moves to the position in question independently of successive-cyclicity.

Now, *da* can also move alone, stranding the preposition, as in (49).[31] Furthermore, as pointed out by Luis Vicente, it is possible to combine these two movements, by first moving the whole PP and then moving *da* out of it, as in (50). (The DP *[das Vorwort t_j]* undergoes remnant movement, which is in accordance with the approach to remnant movement from section 2.2.; (48)-(50) are taken from den Besten and Webelhuth 1990:90, see also Thiersch in press for discussion of these examples.)[32] The same point is illustrated for Dutch by (51) (taken from Barbiers 2002:49), which does not involve remnant movement (*waar* in (51a) is an *r*-pronoun, which, when not moved out of the PP, must precede the preposition, in contrast to the DP in (51b)—without P-stranding what would be wh-moved in (51a) is *waar mee*).

(49) Er hat da_i noch nicht [das Vorwort [t_i von t_i]] gelesen.
he has it yet not the foreword read

(50) Er hat da_i [das Vorwort $t_j]_k$ noch nicht [t_i von $t_i]_j$ t_k gelesen.
he has it the foreword yet not of read

(51) a. $waar_i$ 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?'

b. cf. ?ik had met een scheermes gedacht dat je de vis zou moeten snijden
I had with a razor thought that you the fish would must cut

Under the above analysis, (50) and (51a) are the same kind of a case as SC (23), except that they do not involve a base-generated Spec, but movement to the relevant Spec position: *da* in (50) moves to the Spec of *von*, the whole PP then moves out of the DP, with *da* moving out of the PP (in Dutch (51a), *waar* moves to the Spec of *mee*, the PP then moves to the matrix clause, followed by wh-movement of *waar* out of the PP). As noted above, that the moving element, *da,* otherwise remains in the relevant Spec position (the same holds for *waar*) indicates that it can undergo feature-sharing needed for labeling in that position, hence no labeling problem of the kind

[31]There are ill understood restrictions on P-stranding in German that will not be discussed here, see Thiersch (in press) and references therein.

[32] Another relevant example from den Besten and Webelhuth 1990:87 is given in (i), where *da* moves out of a PP which has moved out of a VP that undergoes remnant fronting.

(i) [t_j gerechnet]$_k$ hatte Peter da_i nicht [t_i mit $t_i]_j$ t_k.
counted had Peter there not with
'Peter had not expected that to happen'

discussed in section 2.1. arises here.[33] (50)-(51a) are then another acceptable case of movement out of a moved element which is consistent with the deduction (and the reformulation) of the freezing effect in question proposed in this paper.

What is important for our purposes is that in all the cases where I have argued above that (1) can be violated, the element that is able to move out of a moved element (XP) is independently able to stay at the edge of the moved element (in fact, the edge of XP is its obligatory surface position within XP) . This provides evidence that labeling at the relevant edge position is possible; in other words, in the relevant cases we are not dealing with true successive-cyclic movement, where the moving element is not able to remain in the intermediate position. The deduction of (1) proposed in this paper, which confines the effect of (1) to true successive-cyclic movement, can capture the exceptional cases as well as the unacceptable cases that have been standardly used in the literature to illustrate the effects of (1), of the kind reviewed in section 1.

Another relevant case may be provided by floating quantifiers in Janitzio P'urhepecha (JP). This case is somewhat different from the cases discussed above in that it is not clear that the moving element can stay in the relevant edge position (but see footnote 34) though there is independent evidence for feature-sharing in the relevant edge position.

Zyman (2016) shows that like several other languages, JP exhibits a pattern of quantifier float where without quantifier float the quantifier and the noun optionally agree, while under quantifier float they must agree. This is illustrated in (52)-(53) (note that *uatsapi-cha* and *iamindu-eecha* need not be adjacent in (53b).)

(52) a. **Iamindu** **uatsapi-cha** ch'ana-xa-Ø-ti=s**i** juata-rhu.
all child-PL play-DUR-PRS-IND+3=3pS hill-LOC
'All the kids are playing on the hill.

b. **Iamindu-eecha** **uatsapi-cha** ch'ana-xa-Ø-ti=s**i** juata-rhu.
all-PL child-PL play-DUR-PRS-IND+3=3pS hill-LOC
'All the kids are playing on the hill.'

(53) a. *Uatsapi-cha **iamindu** ch'ana-xa-Ø-ti=s**i** juata-rhu.
child-PL all play-DUR-PRS-IND+3=3pS hill-LOC
int. 'The kids are all playing on the hill.'

b. ?**Uatsapi-cha** **iamindu-eecha** ch'ana-xa-Ø-ti=s**i** juata-rhu.
child-PL all-PL play-DUR-PRS-IND+3=3pS hill-LOC
'The kids are all playing on the hill.'

[33] In contrast to wh-feature (i.e. Q) checking/sharing (see here the movement of the wh-phrase to the most embedded SpecCP in (45)), the relevant (i.e. R-) feature sharing does not induce a criterial freezing effect (otherwise *da* would never be able to move outside of the PP, stranding the preposition).

It may be worth noting here that Van Riemsdijk (1997) suggests that the relevant PPs always undergo movement in Dutch; this would explain why P-stranding is generally restricted to *r*-pronouns (only elements that undergo feature sharing (i.e. *r*-pronouns) could then move out of PPs since such movement would always involve movement out of a moved element.

The analysis presented in this paper provides a new perspective on the paradigm in (52)-(53). Bošković (2004a) shows that quantifier float of the kind discussed in Sportiche (1988) is quite generally crosslinguistically disallowed in theta-positions. This means that quantifier float necessarily involves movement of the phrase within which the quantifier is to be stranded, followed by the stranding movement (I will refer to the phrase where the quantifier is located/stranded, as QP (see also Shlonsky 1991); Bošković 2013a, 2014 argues that this phrase is a phase). In other words, quantifier float necessarily involves movement out of a moved element. (53a) can then be seen as an instance of the traditional ban on movement out of moved elements, i.e. (1), while (53b) can be seen as a case where the ban is voided since the element that is undergoing movement out of a moved phrase undergoes agreement at the edge of the moved phrase. In other words, both (53a) and (53b) involve movement out of a moved QP. In (53b), the moving element undergoes agreement at the edge of QP, voiding the effect of the traditional ban on movement out of moved elements for reasons discussed above.[34]

5. Conclusion

To conclude, I have shown that the freezing effect, i.e. the ban on movement out of moved elements, naturally falls out from the phasal/labeling system: since successive-cyclic movement does not result in labeling, it "delabels" the element whose edge it targets. Since labels are a

[34] I take (52) to indicate that the relevant agreement is in principle optional. The agreement option is forced in the context of quantifier float by the current deduction of (1). There are other languages that exhibit this kind of pattern (e.g. German and Hebrew); in fact, as far as I know, if agreement between the Q and the NP is in principle possible, it is forced under Q-floating. In principle, the above analysis could be extended to languages like English (though I leave this open here), the only difference being that the relevant agreement relation is never morphologically realized in English (in fact, agreement is rarely morphologically realized in English though it is standardly assumed to take place even when it is not morphologically realized). JP is particularly useful here since the agreement in question is morphologically manifested, but also because, as Zyman (2016) shows, JP floated quantifiers cannot be analyzed as adverbs (see in this respect Bobaljik 2003 and references therein), i.e. ZP quantifier float indeed involves Sportiche (1988)-style quantifier stranding. It should also be noted that above I have appealed to Bošković's (2004a) floating quantifier generalization, but not to the account of the generalization given in Bošković (2004a). The analysis can, however, be adjusted to also be consistent with the gist of the account itself. Since for the account it is crucial that the quantifier is an adjoined element (as in Sportiche's 1988 original analysis), all that needs to be done is to assume that the quantifier is adjoined to QP (obligatorily agreeing with the null Q head, as Bošković assumes for such cases), with *uatsapi-cha* optionally agreeing with the null Q head (in fact, it is then possible that the agreement option involves movement of *uatsapi-cha* to the edge of QP even in (52b). *Uatsapi-cha* and *iamindu-eecha* then would not agree directly in (52b), they would agree by transitivity since both would agree with the null Q head.

It should also be noted that there are other cases were subextraction has been reported to require agreement (see e.g. Bošković 2009). The account presented here may provide a new perspective on all such cases, i.e. it may provide a general explanation for the cases exhibiting the forced-agreement-under-subextraction effect. However, establishing this would require a detailed examination of the relevant cases, which cannot be undertaken here for space considerations.

prerequisite for phases, this way it also devoids the element in question (XP) of phasehood, making it impossible for it to undergo movement. Given that the cycle forces movement to the edge of XP to occur before movement of XP, we then deduce the empirical effects of (1). I have also pointed out that the proposed deduction of (1) leaves room for legitimate "violations" of (1) in one well-defined configuration, providing evidence that movement out of moved elements may indeed take place in the configuration in question.

It is worth emphasizing here that the current analysis provides a new perspective on the ban on movement out of moved elements. Under the current analysis, the problem with the case of movement of YP out of moved element XP does not arise at the point of movement of YP out of XP (as is generally the case in other accounts of the ban in question); the problem arises already with the movement of XP, i.e. XP itself cannot undergo movement in this case—what should be later movement out of moved XP is then trivially blocked. In other words, it is not the case that movement of XP freezes its internal structure; rather, movement of YP to the edge of XP (for successive cyclicity reasons) prevents movement of XP.

The discussion in the paper also provides a new perspective on the traditional Adjunct Condition, i.e. the ban on movement out of adjuncts, where movement out of adjuncts may be possible in one well-defined configuration, in fact the same configuration as movement out of moved elements. To capture this, I have suggested a unified account of the traditional Adjunct Condition and the ban on movement out of moved elements, a suggestion which however has far-reaching consequences that cannot be fully explored here.

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