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Russian Binding Theory: Two Improved Movement Approaches[1]

Abstract

We begin by presenting some data on Russian pronouns and anaphors. We then briefly discuss a simple approach to Russian binding theory that is stipulative and fails to account for some of the facts. We proceed to discuss in detail two movement-based approaches to binding theory in Russian, Hestvik (1992) and Avrutin (1994). Similar modifications are proposed for both accounts. In particular, we propose that pronouns and anaphors are able to pied-pipe other material when they move, and that when both an anaphor and a pronoun are raised in a double object construction, the anaphor raises above the pronoun. These modifications help explain additional data and remove the necessity for some theoretical stipulations. The research presented in this paper is a work in progress.

1 Introduction

The Russian language has the anaphor *sebja*, which is the same regardless of the gender and number of the referent. It also has pronouns which agree in gender and number with the referent.[2]

(1) a. Petja$_{i}$ ljubit sebja$_{i/*j}$/ego$_{*i/j}$.
Peter$_{i}$ loves himself$_{i/*j}$/him$_{*i/j}$
'Peter loves himself.'

b. Maša$_{i}$ ljubit sebja$_{i/*j}$/ee$_{*i/j}$.
Mary$_{i}$ loves herself$_{i/*j}$/her$_{*i/j}$
'Mary loves herself.'

Russian pronouns show what Vikner (1985) has called an *antisubject orientation*. That is, a third person pronoun cannot corefer with a local subject, but is generally allowed to corefer with a non-subject.[3] For example:

(2) a. Petja$_{i}$ predstavil Maše$_{j}$ [*ego$_{i}$/ee$_{j}$ tetju].
Peter$_{i}$ introduced Mary$_{j}$-DAT *his$_{i}$-POSS/her$_{j}$-POSS aunt-ACC
'Peter introduced *his/her aunt to Mary.'

[1]I would like to thank David Pesetsky for all his help, and also Elena Asarina, Vladimir Lipkin and Boris Lipkin for their Russian judgments.

[2]All unlabeled non-English examples are from Russian.

[3]First and second person pronouns will be discussed separately.

b. Petja$_i$ predstavil Mašu$_j$ [*ego$_i$/ee$_j$ tete].
Peter$_i$ introduced Mary$_j$-ACC *his$_i$-POSS/her$_j$-POSS aunt-DAT
'Peter introduced Mary to *his/her aunt.'

Thus the direct and indirect objects can contain a pronoun that corefers with the other object, but not one that corefers with the subject.

Correspondingly, Russian anaphors show subject orientation. An anaphor that corefers with a local subject is permitted, whereas one that corefers with a non-subject is not. For example:

(3) a. Petja$_i$ predstavil Maše$_j$ [svoju$_{i/*j}$ tetju].
Peter introduced Mary-DAT his$_i$/*her$_j$-ANAPH-ACC aunt-ACC
'Peter introduced his/*her aunt to Mary.'

b. Petja$_i$ predstavil Mašu$_j$ [svojej$_{i/*j}$ tete].
Peter introduced Mary-ACC his$_i$/*her$_j$-ANAPH-DAT aunt-DAT
'Peter introduced Mary to his/*her aunt.'

Therefore, it will not do to simply take Principles A, B, and C as they apply to English and apply them to Russian as well.

Principle A: An anaphor must be bound in its binding domain.

Principle B: A pronoun must be free in its binding domain.

Principle C: An R-expression must be free.

Unless we propose some non-obvious covert movement, there is no possible binding domain domain that will account for the facts in (3). In both (3a) and (3b), the subject is within the binding domain of the anaphor. Therefore, in (3a) the indirect object should also be in the binding domain of the anaphor, and in (3b) the direct object should be in the binding domain of the anaphor. Thus, assuming that at least one object c-commands the other in Russian, in at least one of (3a) and (3b) an object should be able to bind an anaphor in the other object and satisfy Principle A. But this is not the case.

There is also no way to define a binding domain in a way that explains Principle B effects in (2). Assuming that in at least one of (2a) and (2b) *Maša* c-commands the other object, it should be able to bind the pronoun in the other object if the more distant subject can. However, coreference between a pronoun and an object in the other pronoun does not result in a Principle B violation. On the other hand, coreference between the subject and a pronoun in one of the objects does result in ungrammaticality. Thus, if one object c-commands the other object at the point in the derivation when Principle B applies in Russian, the theory presented above does not derive the data in (2).

We therefore need to do some work in order to explain the Russian binding facts concerning both anaphors and pronouns.

2 A Non-Movement Approach

An obvious explanation for the data above is to stipulate one of the following revised versions of Principles A and B: (Vikner (1985) and Manzini and Wexler (1987) for (4a))

(4) a. **Principle A:** An anaphor must be bound by a subject in its binding domain.
Principle B: A pronoun must not be bound by a subject in its binding domain.

b. **Principle A:** An anaphor must be bound by a nominative NP in its binding domain.
Principle B: A pronoun must not be bound by a nominative NP in its binding domain.

Either proposal would explain the data above. In (2) the nominative subject acts as a binder for a pronoun in either object, resulting in a Principle B violation, whereas an object does not bind a pronoun in the other object. In (3) the nominative subject acts as a binder for an anaphor in either object, which results in Principle A being satisfied, whereas an object cannot bind an anaphor in the other object. In order to distinguish between the two proposals, we would need to consider non-nominative subjects, which is beyond the scope of this paper.

The most obvious problem with both claims in (4) is that they are just stipulations. It is unclear why there should be restrictions on the kinds of NP's that can be antecedents in binding relations in some languages but not others. The proposal also introduces a new mechanism that applies only to binding theory, with no converging evidence from other aspects of the language. Finally, some of the data presented below cannot be explained by (4).

3 Movement Approach in Hestvik (1992)

As we have seen, both proposals presented in (4) are unsatisfactory. We therefore turn to a different kind of theory, in which movement is proposed in order to explain both antisubject orientation for pronouns and subject orientation for anaphors.

3.1 The Proposal

Hestvik (1992) provides an account of the binding data for Norwegian. Most of the relevant binding facts mentioned in Hestvik's paper are the same in Russian and Norwegian. We will therefore apply the theory to Russian, and consider additional Russian examples in order to evaluate and improve the account.

Hestvik (1992) suggests that the difference between English and Norwegian is that in English pronouns and anaphors are XP's, whereas in Norwegian (and, one might suppose, in Russian) pronouns and anaphors are X^0's. In addition to Principles A, B and C above,

Hestvik (1992) then uses the following rules to predict movement that is to account for the different binding facts in English as compared to Norwegian (and Russian):

(5) At LF,
   a. X^0 pronouns and X^0 anaphors must occur in a functional head.
   b. XP pronouns and XP anaphors must occur in the specifier of their governor.

The paper defines the binding domain of α as the minimal complete functional complex (CFC) containing α and its governor. A CFC is here the smallest maximal category containing all the grammatical functions compatible with its head, as described in Chomsky (1986). The BT-compatibility algorithm of Chomsky (1986) is proposed by Hestvik (1992) to be incorrect.

In practice, for Hestvik this means that for a possessive pronoun or anaphor α, α together with the possessee forms the binding domain of α. For example, $[\text{her aunt}]_{\text{DP}}$ will be a binding domain for *her*. A bare pronoun or anaphor does not form its own binding domain.

Hestvik (1992) proposes that Principle A must be satisfied at either LF or S-structure (or both). Principle B must be satisfied both at LF and at S.

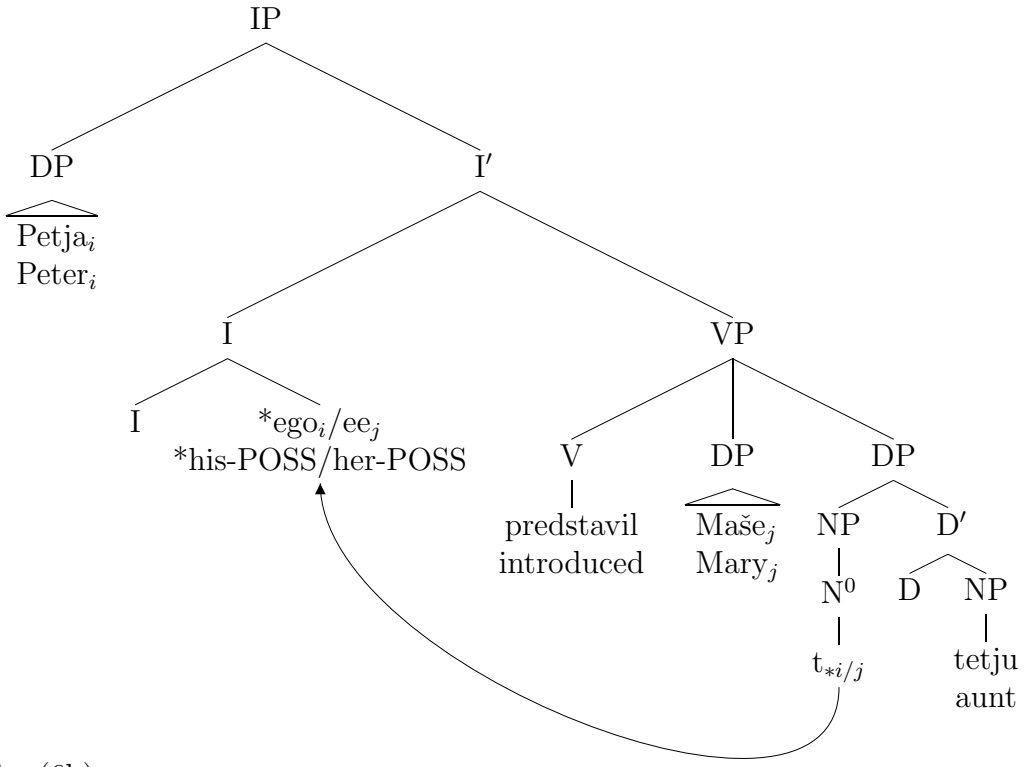
3.2 Applying the Proposal to Russian

Consider again the examples in (2) and (3) above. If Russian is like Norwegian, then Hestvik (1992) would predict the following structures for (2a) and (3a) (repeated here as (6a) and (6b)) at LF.

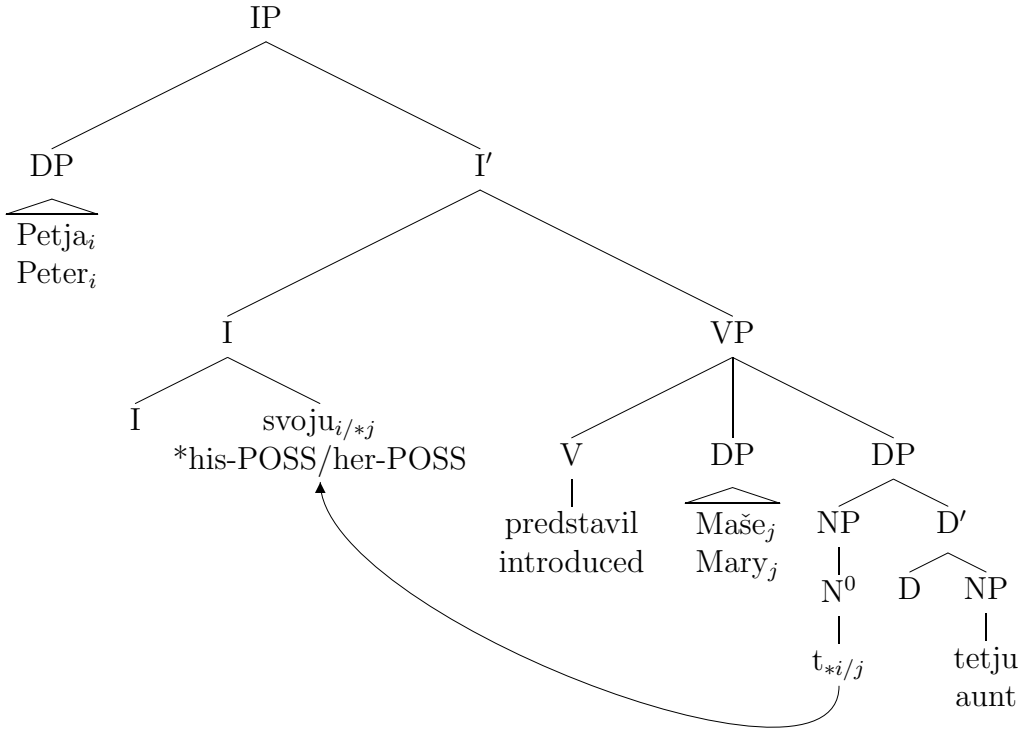
(6) a. Petja$_i$ predstavil Maše$_j$ [*ego$_i$/ee$_j$ tetju].
   Peter$_i$ introduced Mary$_j$-DAT *his$_i$-POSS/her$_j$-POSS aunt-ACC
   'Peter introduced *his/her aunt to Mary.'

   b. Petja$_i$ predstavil Maše$_j$ [svoju$_{i/*j}$ tetju].
   Peter introduced Mary-DAT his$_i$/*her$_j$-ANAPH-ACC aunt-ACC
   'Peter introduced his/*her aunt to Mary.'

(7) For (6a):



(8) For (6b):



Because Russian pronouns and anaphors are assumed to be X^0's, they must occur in a functional head. Therefore, assuming that rightward movement to adjoin to D is impossible, the pronoun in (7) and the anaphor in (8) move to adjoin to I. When Principle B is checked at LF in (7), it is violated when the raised pronoun corefers with the subject, but not when it corefers with the indirect object, as the binding domain of the moved pronoun includes the subject and not the indirect object. According to Hestvik (1992), in addition to being satisfied at LF, Principle B be must also be satisfied at S-structure. No matter what the referent of the pronoun is in (6a), Principle B is satisfied at S, as the binding domain for the pronoun is [ego/ee tetja]$_{DP}$, and does not include the subject or the indirect object. It is therefore correctly predicted that coreference between a pronoun in an object and the subject is ungrammatical, while coreference between a pronoun in an object and the other object is permitted.

In (8) the subject is in the binding domain of the raised anaphor and c-commands the anaphor at LF, while the indirect object does not c-command the anaphor. Thus Principle A is satisfied at LF when the raised pronoun corefers with the subject, but not when it corefers with the object. Principle A cannot be satisfied at S, as there is no potential binder that locally c-commands the anaphor, since the binding domain for the anaphor is [svoju tetju]$_{DP}$. Thus, again, the correct prediction is made: the anaphor may be bound by the subject, but not by the other object.

3.3 Problems and Modifications

While the proposal makes some interesting and correct predictions for Russian, it is not without problems. I will discuss ways of dealing with some of the inadequacies. The resulting proposal, while not perfect, will successfully explain a range of Russian binding data.

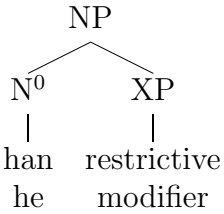
3.3.1 The XP vs. X^0 Difference

One question that arises is whether there is supporting evidence for claiming that the difference between English and Norwegian/Russian anaphors and pronouns lies in XP vs. X^0 structure. As Hestvik (1992) points out, in Norwegian, restrictive modifiers are allowed on pronouns, whereas they are disallowed in English.

(9) a. [han med rod hatt] **(Norwegian)**
he with red hat
b. *[he with the red hat]

Hestvik (1992) argues that this is because there is an attachment site for restrictive modifiers in Norwegian but not in English:

(10) a. Norwegian:



b. English:

However, while Russian aligns with Norwegian rather than English in terms of binding data, it aligns with English in not allowing restrictive modifiers on pronouns.

(11) a. *[on s krasnoj šljapoj]
he with red hat

Furthermore, neither Norwegian nor Russian reflexives allow restrictive modifiers.

(12) a. *[seg med rod hatt] **(Norwegian)**
himself/herself with red hat
b. *[sebja s krasnoj šljapoj]
himself/herself with red hat

It is possible that the examples in (12) are ungrammatical for semantic, rather than syntactic, reasons. Perhaps the semantics of reflexives simply prohibits them from taking modifiers. According to Hestvik (1992) the Norwegian reflexive cannot be modified at all, and the same appears to be the case for Russian reflexives. For example, Russian allows relative clauses with pronouns (though it sounds archaic), but not with anaphors.

(13) a. On, kotoryj prines sebja v žertvu, ne budet zabyt.
he which brought himself in sacrifice not will be forgotten
'He, who sacrificed himself, will not be forgotten.'

b. On rasskazal o sebe, (*kotoryj/*kotorom prines
he told about himself-PREP (*which-NOM/*which-PREP brought
sebja v žertvu.)
himself in sacrifice)

Nonetheless, even if anaphors do not allow restrictive modifiers for independent semantic reasons, there does not seem to be a real correlation between binding facts and the possibility of restrictive modifiers on pronouns/anaphors. Norwegian and Russian are very similar in terms of binding data, yet Norwegian pronouns allow restrictive modifiers while Russian ones do not. It is not even entirely clear in what sense a pronoun or anaphor can sometimes *be* an N^0 and sometimes an NP.

The best solution to this problem with the theory is to simply discard the N^0 vs. NP aspect of it altogether. There is nothing that crucially depends on the difference between English and Norwegian/Russian being a difference between XP and X^0 pronouns and anaphors. We may simply stipulate some sort of featural difference between English pronouns and anaphors on one hand, and Norwegian and Russian ones on the other. If we say that this feature is F and Norwegian/Russian pronouns have it while English ones don't, for instance, (we could have just as well said the opposite) then the following modified claim helps account for the facts:

(14) At LF,
  a. [+F] pronouns and anaphors must occur in a functional head.
  b. [-F] pronouns and anaphors must occur in the specifier of their governor.

Of course, while proposing such a feature F helps provide a description of the data, it does not provide an explanation. Further investigation may reveal what kind of feature should be proposed, hopefully resulting in a theory with explanatory power.

3.3.2 When Do Principles A and B Apply?

Hestvik (1992) cites the following example to show that Principle B applies at S (in addition to LF):

(15) *John fortalte Per_j om ham_j. **(Norwegian)**
John told Peter_j about him_j

Here the binding domain of *ham* includes *Per* at S, but not when *ham* is raised at LF, so that Principle B must apply at S in Norwegian to exclude the example.

However, the corresponding sentence is fine in Russian:

(16) Maša rasskazala Pete_j o nem_j.
Mary told Peter_j about him_j
'Mary told Peter about him(self).'

Therefore, if Hestvik's approach is correct, Principle B does not apply at S in Russian.

Now consider what happens in Russian when we replace the pronoun in (16) with an anaphor.

(17) Maša_i rasskazala Pete_j o $\text{sebe}_{i/*j}$.
Mary_i told Peter_j about herself_i/*himself_j
'Mary told Peter about herself/*him(self).'

If Principle A can be satisfied at S, then we would expect the anaphor to be able to corefer with *Pete* in (17), as the binding domain of *sebe* includes *Pete* at S. However, this is disal-

lowed. We may thus conclude that in Russian, Principle A also applies at LF, and not at S.

The data presented earlier are consistent with Principles A and B applying only at LF in Russian. In the cases presented in (2), the binding domain of the pronoun at S is just the possessive pronoun itself and the possessee, so that there are no potential binders in the domain and Principle B is not violated at S. In (3), the binding domain of the anaphor is the possessive anaphor itself and the possessee, so that there are no potential binders at S and Principle A is not satisfied at S. Thus the predictions remain the same if we claim that Principles A and B do not apply at S.

3.3.3 Raised Pronoun as a Binder

We have seen that a raised pronoun or anaphor is bound by a subject. But might it not also bind something lower in the tree after raising, thus producing a Principle C violation in some cases? We will see that this possibility is in fact an issue that must be addressed. First note that Principle C applies at LF.

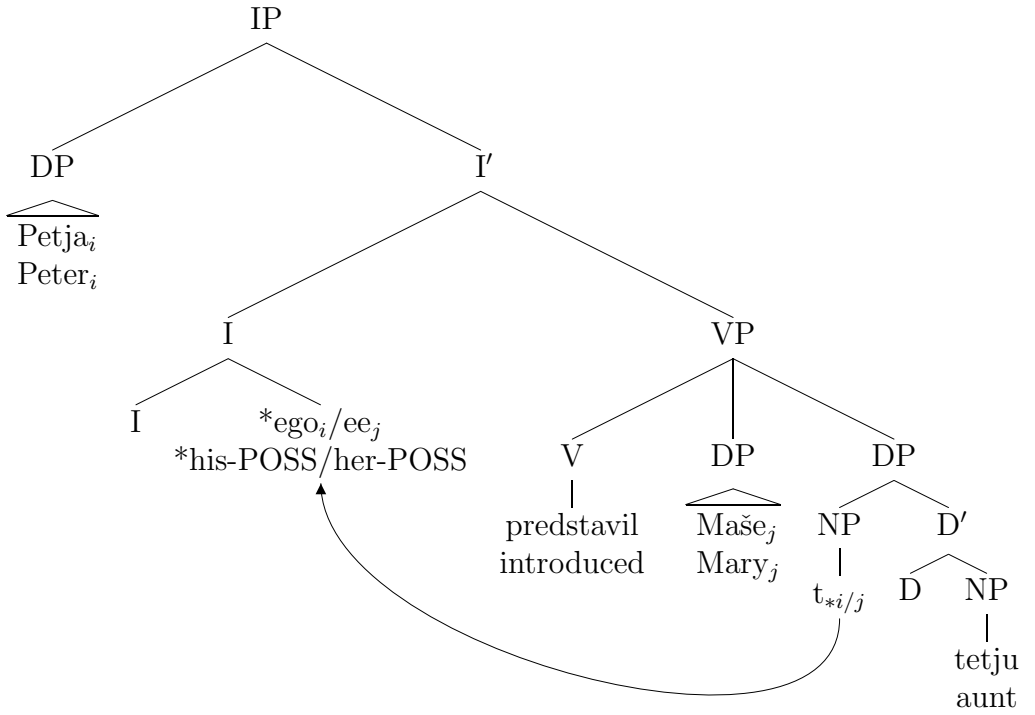
(18) a. [Mašinu$_{\mathrm{i}}$ knigu] pročla Maša$_{*\mathrm{i/j}}$.
Mary$_{\mathrm{i}}$'s-ACC book-ACC read Mary$_{*\mathrm{i/j}}$-NOM
'Mary read Mary's book.'

b. [Mašinu$_{\mathrm{i}}$ knigu] pročla [Mašina$_{\mathrm{i/j}}$ sestra].
Mary$_{\mathrm{i}}$'s-ACC book-ACC read Mary$_{\mathrm{i/j}}$'s-NOM sister-NOM
'Mary's sister read Mary's book.'

In both (18a) and (18b) the object has raised at S, so that it presumably is no longer c-commanded by the subject. As (18b) shows, when there is no c-command relation between corefering R-expressions in the subject and object, the sentence is grammatical. The sentence in (18a), however, is ungrammatical with coreference between the subject and an R-expression in the object. The difference between (18a) and (18b) is that in (18a), but not (18b), the subject c-commands at LF an object with a coreferent R-expression. Thus the ungrammaticality of (18) results from an LF Principle C violation.

Let us look again at the tree presented in (7) (now ignoring the structure, NP vs. N^0, immediately above the pronoun).

(19)



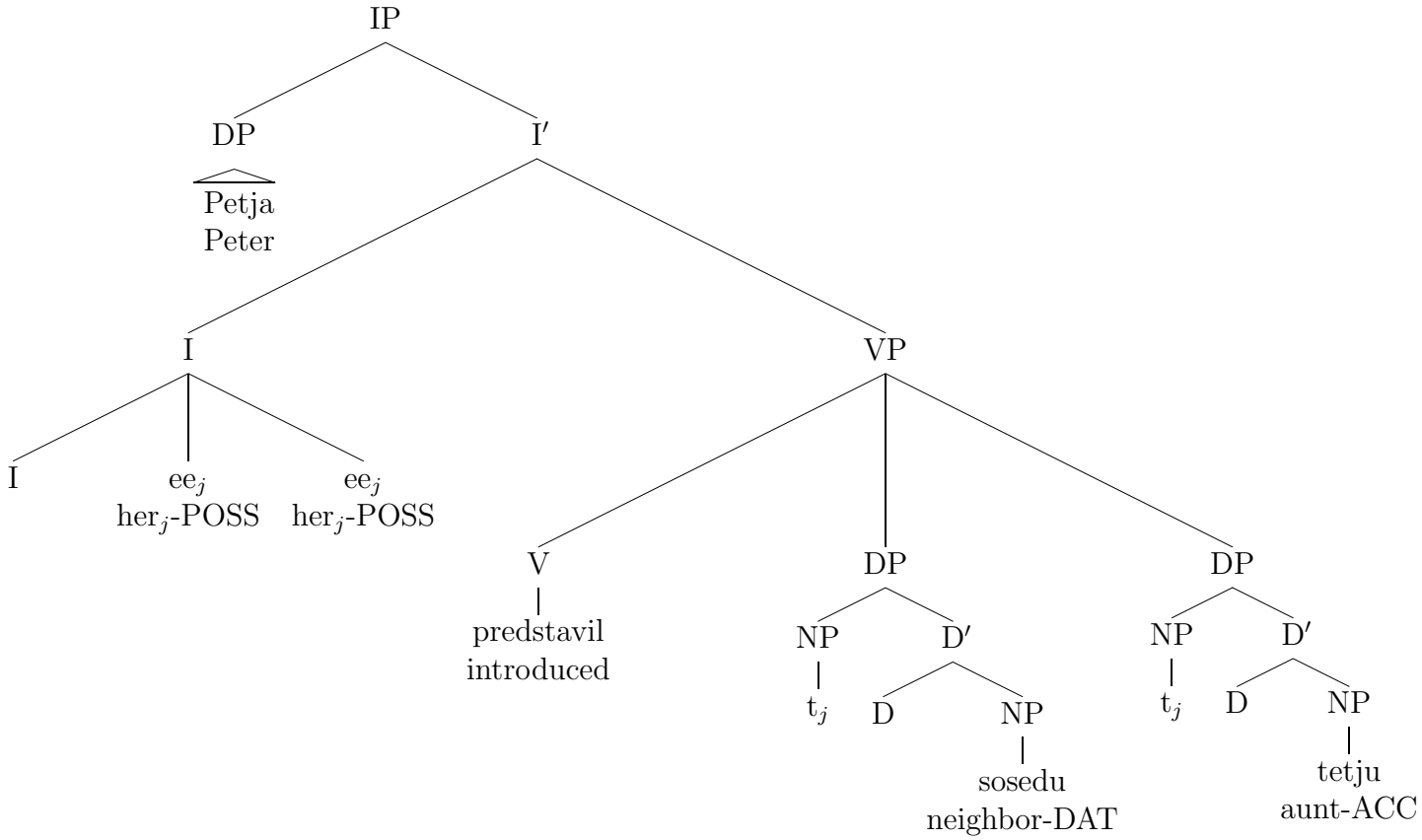
If we consider the raised pronoun to c-command the indirect object in the structure above, then coreference between the pronoun and the indirect object will be incorrectly ruled out because of a Principle C violation at LF. We must thus assume with Hestvik (1990) that a pronoun adjoined to I does not c-command into the VP that is dominated by I′, or else modify the theory.

A different prediction is made when both the direct and indirect object contain pronouns.

(20) Petja predstavil [ee$_j$ sosedu] [ee$_j$ tetju].
Peter introduced her$_j$-POSS neighbor-DAT her$_j$-POSS aunt-ACC
'Peter introduced her aunt to her neighbor.'

Since both of the pronouns in the objects raise to adjoin to I, we might expect the following LF structure for (20).

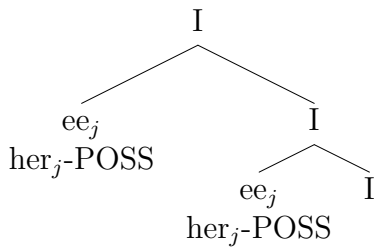
(21)



This structure should result in a Principle B violation, since the pronouns have adjoined to I and now c-command each other. But (21) is in fact a perfectly fine sentence. Hestvik (1992) gets around this issue by redefining c-command so that segments of a node (such as the two pronouns under I) do not c-command each other. However, this is not a particularly satisfactory solution.

It is also possible that the following structure is obtained under I instead:

(22)



If this is the case, then only one of the pronouns c-commands the other a LF, but a Principle B violation still ensues unless we redefine c-command as Hestvik (1992) does.

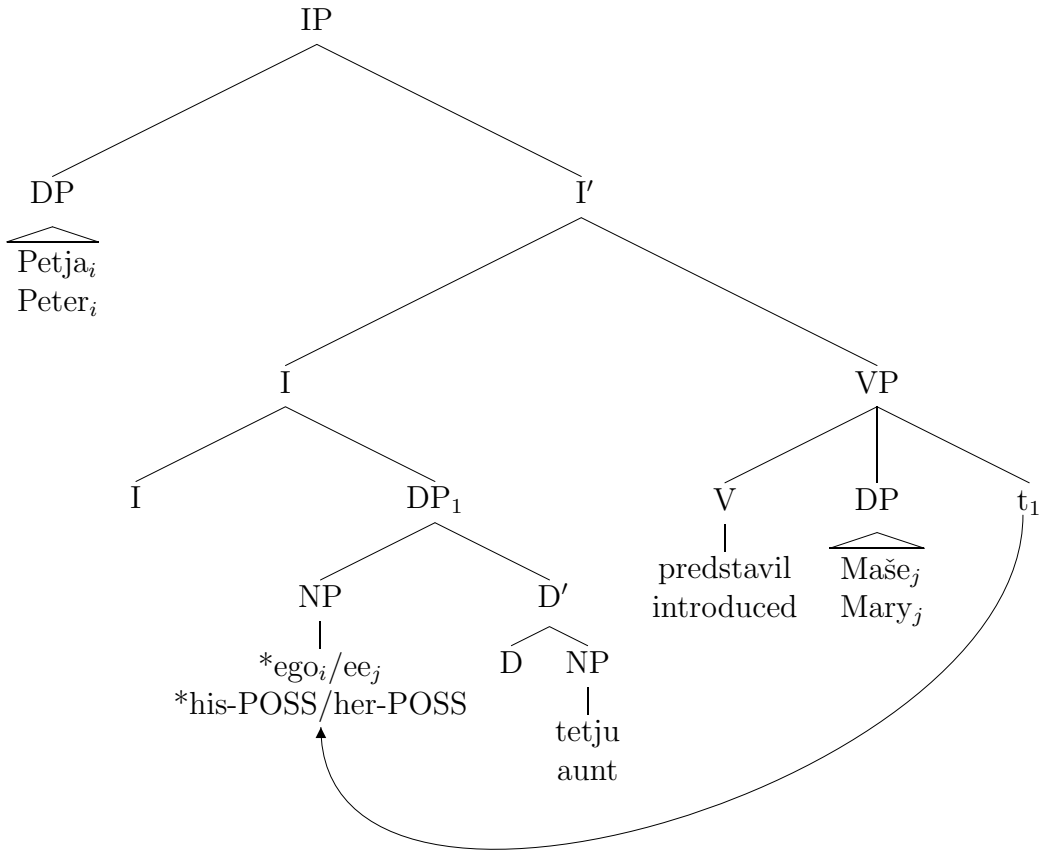
3.3.4 A Pied-Piping Solution

As we have seen, it is a problem for the Hestvik (1992) account that it predicts that new binding relations are formed at LF between raised pronouns and anaphors and the items they c-command, while these relations are not reflected in the data. But suppose a raised pronoun or anaphor pied-pipes other material when it raises, either optionally or obligatorily. Assume, for instance, that a possessive pronoun can (or must) pied-pipe the possessee. Consider again the familiar double-object construction with a possessive pronoun in one object and an R-expression in the other, as in (2a) (repeated below).

(23) Petja$_{\text{i}}$ predstavil Maše$_{\text{j}}$ [*ego$_{\text{i}}$/ee$_{\text{j}}$ tetju].
Peter$_{\text{i}}$ introduced Mary$_{\text{j}}$-DAT *his$_{\text{i}}$-POSS/her$_{\text{j}}$-POSS aunt-ACC
'Peter introduced *his/her aunt to Mary.'

We can now obtain the following LF structure for (23):

(24)



The raised pronoun in (24) clearly does not c-command the indirect object, so there is no Principle C violation induced. However, if we take the binding domains to be as defined in Hestvik (1992), a new problem is introduced: the binding domain for the raised pronoun

is still the DP [ego/ee tetju]$_{DP}$ at LF, so that there is no Principle B violation induced by coreference between the subject and the possessive pronoun in the object. The resulting prediction that the possessive pronoun in the object should be able to corefer with the subject is incorrect.

However, nothing in the previous discussion prevents us from postulating a larger binding domain for Russian. Hestvik, who argues that Principles A and B do apply at S-structure in Norwegian, is obliged to propose a binding domain that is small enough that the indirect object is not in the binding domain of the direct object at S-structure when the direct object is a possessive pronoun. Otherwise, Principle B violations at S-structure, would rule out sentences that are in fact good. For example:

(25) John$_i$ spurte Per$_j$ om [hans$_{*i/j}$ kone].
(Norwegian) John asked Peter about his wife
'John asked Peter about his wife.'

While Hestvik (1992) proposes that *Per* c-commands *hans* at S-structure, coreference between *Per* and *hans* is allowed, with no Principle B violation resulting. Thus *Per* must be excluded from the binding domain of *hans*.

Recall, however, that examples (16) and (17) (repeated below) show that Principles A and B do not apply at S-structure in Russian.

(26) a. Maša rasskazala Pete$_j$ o nem$_j$.
Mary told Peter$_j$ about him$_j$
'Mary told Peter about him(self).'

b. Maša$_i$ rasskazala Pete$_j$ o sebe$_{i/*j}$.
Mary$_i$ told Peter$_j$ about herself$_i$/*himself$_j$
'Mary told Peter about herself/*him(self).'

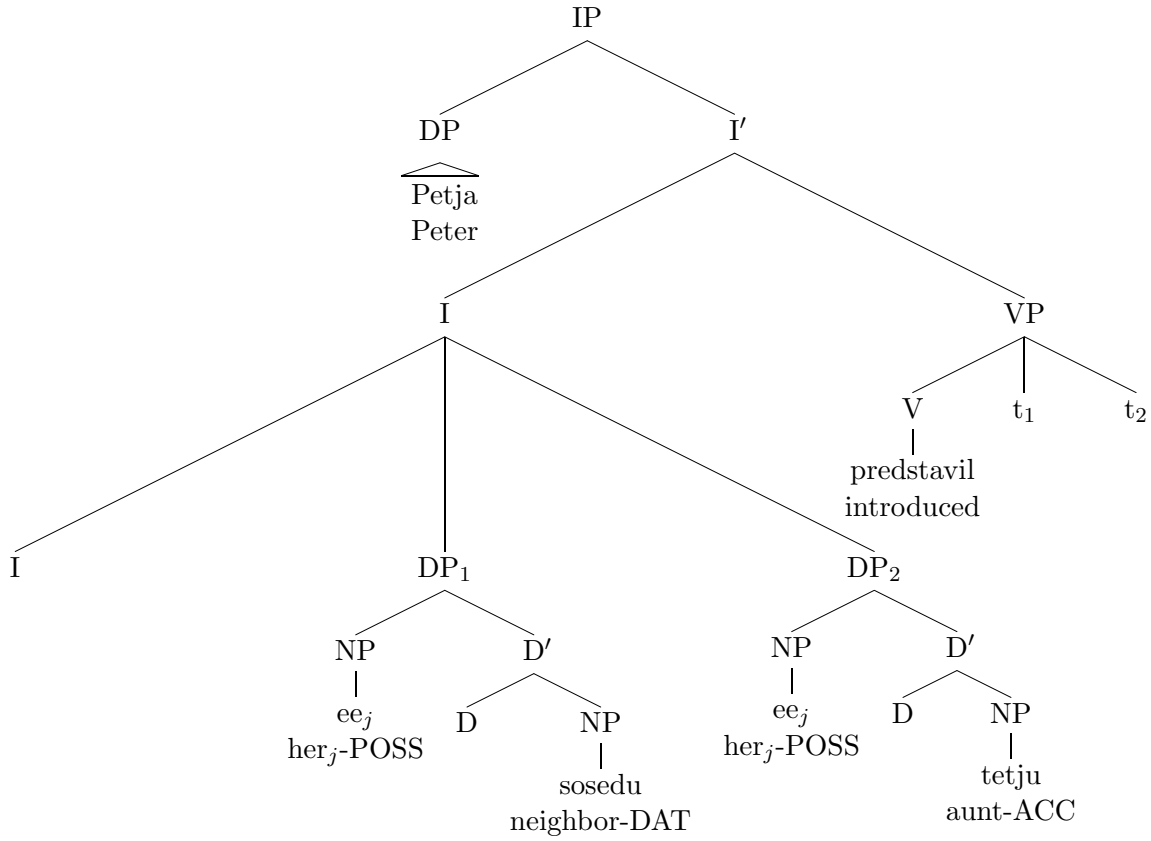
Therefore, there is no need to exclude the indirect object from the binding domain of the direct object at S in Russian, as Hestvik (1992) was obliged to do for Norwegian. We can thus add the requirement that the binding domain for a pronoun must include a potential antecedent. (Chomsky (1986)) The domain for the raised pronoun in (25) is then the entire IP, so that a Principle B violation is induced at LF when the pronoun in an object corefers with the subject.

Similarly, extending the binding domain for anaphors in the same way as for pronouns allows the subject to bind an anaphor in the object that has raised at LF and pied-piped additional material.

Now consider the case of two pronouns in the double object construction discussed above. Again, the pronouns can (or must) pied-pipe additional material, resulting in the following LF structure for (20) (repeated below).

(27) Petja predstavil [ee$_j$ sosedu] [ee$_j$ tetju].
Peter introduced her$_j$-POSS neighbor-DAT her$_j$-POSS aunt-ACC
'Peter introduced her aunt to her neighbor.'

(28)



It is unnecessary to redefine c-command to account for this case: the two raised pronouns do not c-command each other, and therefore coreference between them does not result in a Principle B violation. The sentence in (27) is correctly predicted to be good. Note that the choice to show DP_1 before DP_2 in (28) was arbitrary. We have no evidence for whether DP_1 or DP_2 precedes the other at LF in (28), and in fact it is unlikely that any evidence one way or the other can exist if the flat tree structure under I is correct. We return to this point below.

As we have seen, pied-piping allows us to correctly predict previously discussed data without tweaking the notion of c-command. The pied-piping account also makes novel predictions.

3.3.5 Implications of Pied-Piping

Suppose a bare pronoun that is adjoined to I c-commands into the VP dominated by I. Then, since pied-piped material is what prevents a raised pronoun from c-commanding lower DP's, we would expect that when there is no material for the pronoun to pied-pipe, Principle B

and C violations will result at LF when the pronoun corefers with something contained in the other object. This prediction is fairly well borne out in Russian.

It appears that sentences with double object constructions in which a pronoun in one object precedes a corefering R-expression in the other object are generally dispreferred regardless of issues of binding. (The same phenomenon can be observed in English.)

(29) a. Petja predstavil [ee$_{??j/k}$ sosedu] [Mašinu$_j$ tetju].
Peter introduced her$_{??j/k}$-POSS neighbor-DAT Mary$_j$'s aunt-ACC
'Peter introduced Mary's aunt to her neighbor.'

b. Petja predstavil [ee$_{?*j/k}$ tetju] [Mašinomu$_j$ sosedu].
Peter introduced her$_{?*j/k}$-POSS aunt-ACC Mary$_j$'s neighbor-DAT
'Peter introduced Mary's aunt to her neighbor.'

We will therefore only discuss examples in which there is no pronoun in one object preceding an R-expression in the other object, as those may be dispreferred for unrelated reasons.

First, consider sentences in which one object is a bare pronoun and the other contains (or is) a corefering R-expression.[4]

(30) a. ?*Petja pokazal Maše$_j$ ee$_j$.
Peter showed Mary$_j$-DAT her$_j$-ACC
b. *Petja pokazal Mašu$_j$ ej$_j$.
Peter showed Mary$_j$-ACC her$_j$-DAT

Note that we used *pokazal* ('showed') rather than *predstavil* ('introduced') in (30), because it is easier to find a context in which the sentences would make sense. For instance, perhaps there is an old photograph of Mary and her classmates and Peter pointed out to Mary where she is in the picture.

(31) a. ?*Petja predstavil [Mašinomu$_j$ sosedu] ee$_j$.
Peter introduced Mary$_j$'s-DAT neighbor-DAT her$_j$-ACC
b. ?Petja predstavil [Mašinogo$_j$ soseda] ej$_j$.
Peter introduced Mary$_j$'s-ACC neighbor-ACC her$_j$-DAT
'Peter introduced Mary's neighbor to her.'

All of the sentences in (31) and (30) are predicted to be ungrammatical. With no material to pied-pipe, and assuming that the pronoun *ee/ej* adjoined to I c-commands into the VP dominated by I′, *ee/ej* is predicted to bind *Maša* at LF. The result is a Principle C violation. However, while (30a), (30b), and (31a) are rather bad, (31b) is imperfect but acceptable. It is unclear why this should be the case.

[4]In all the cases discussed here, the sentences are good when the pronoun does not corefer with the R-expression in the other object (or with the subject).

Now consider the examples where both objects contain a pronoun, and at least one of the objects is a bare pronoun. The examples given below are fine without coreference only if the referents of the pronouns are explicitly pointed out (e.g. gestured at), presumably because otherwise one cannot determine who the pronouns refer to. There need to be to salient entities for the pronouns to refer to, but there is no way to determine which one refers to which without additional context.

(32) a. *Petja pokazal ej_j ee_j.
Peter showed her_j-DAT her_j-ACC
b. *Petja pokazal ee_j ej_j.
Peter showed her_j-ACC her_j-DAT

(33) a. ?*Petja predstavil [ee_j sosedu] ee_j.
Peter introduced her_j-POSS neighbor-DAT her_j-ACC
b. ??Petja predstavil ee_j [ee_j sosedu].
Peter introduced her_j-ACC her_j-POSS neighbor-DAT

Our theory predicts that the pronouns in (32a) and in (32b) will c-command each other at LF, since neither has any material to pied-pipe, resulting in two Principle B violations. Correspondingly, the examples in (32) are unacceptable.

The examples in (33) are also correctly predicted to be bad, as the direct object contains no material that can be pied-piped, and will therefore c-command the corefering pronoun in the indirect object at LF, resulting in a Principle B violation.

However, when it is the indirect rather than the direct object that is a bare pronoun, the resulting sentences are grammatical.

(34) a. Petja predstavil ej_j [ee_j soseda].
Peter introduced her_j-DAT her_j-POSS neighbor-ACC
'Peter introduced her neighbor to her.'

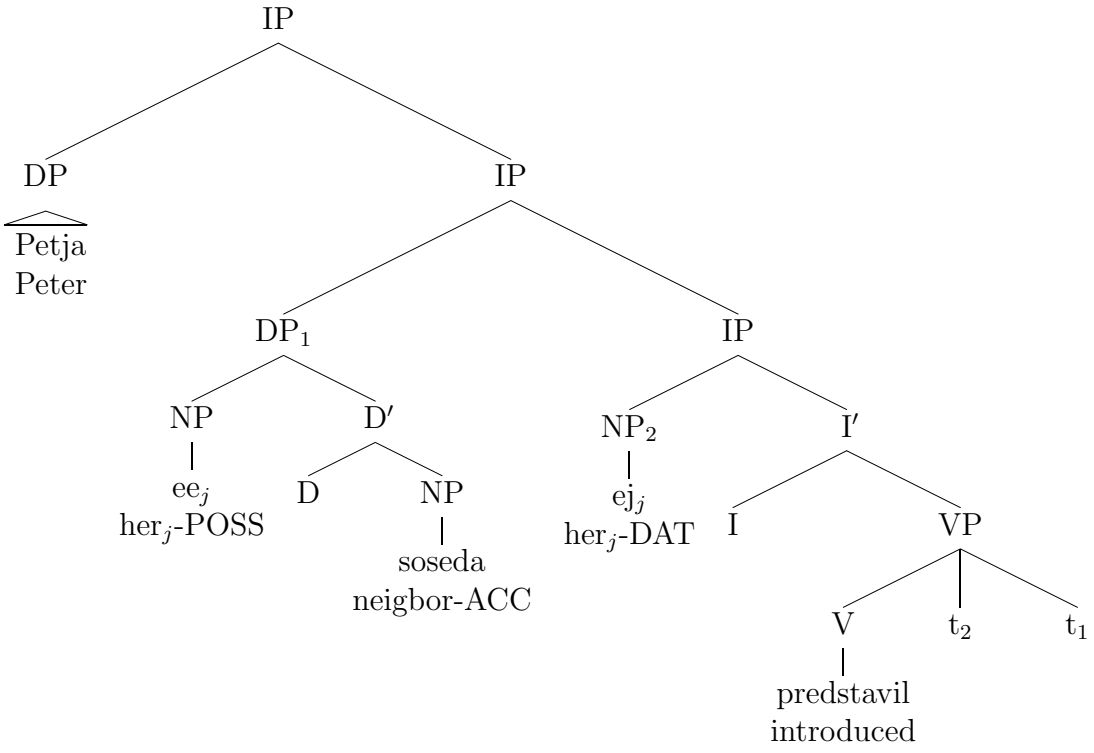
b. ?Petja predstavil [ee_j soseda] ej_j.
Peter introduced her_j-POSS neighbor-ACC her_j-DAT
'Peter introduced her neighbor to her.'

Hestvik (1992) cannot predict the difference between direct and indirect objects, as it is completely symmetric in its treatment of the two objects.

Examples (33) and (34) together suggest that while the raised direct object c-commands the raised indirect object at LF, the indirect object does not c-command the direct object at LF. Also, if we follow the proposal that only heads adjoin to heads, when an object pied-pipes additional material, it will be unable to adjoin to I. However, the object can raise to a specifier position of IP instead. The LF structure for (34a) would then look like the following.[5]

[5]Note that we have no evidence for the underlying order of the direct and indirect object. We will continue

(35)

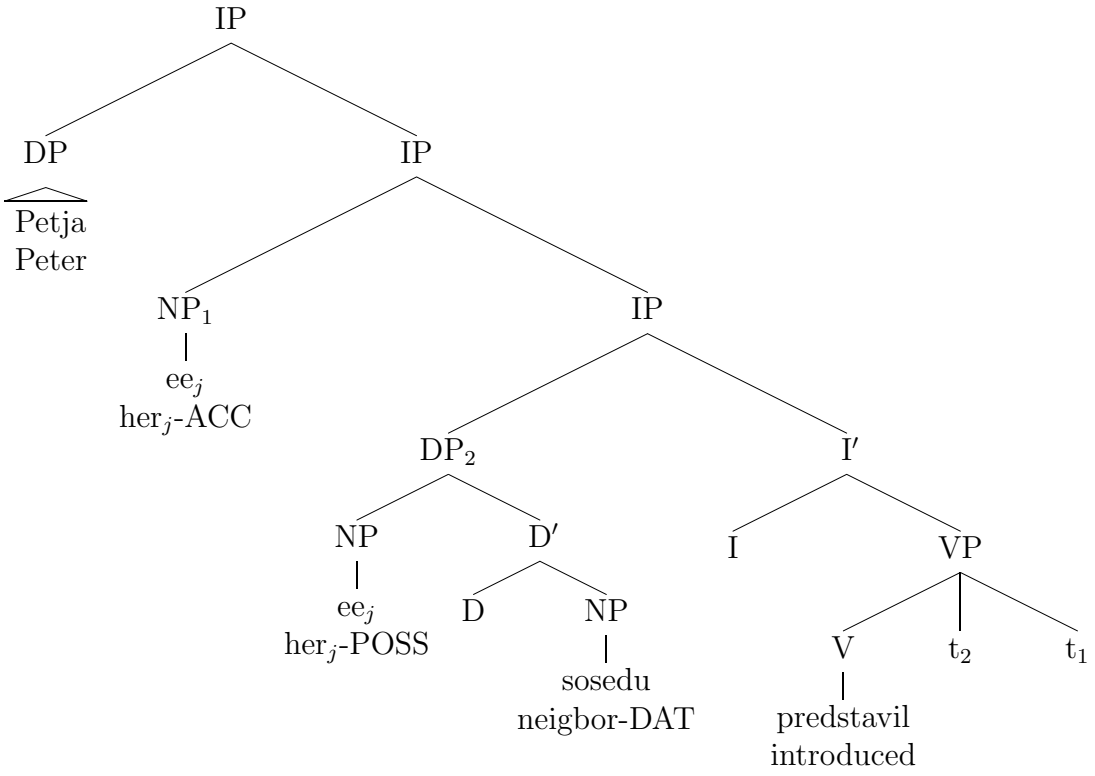


Here both of the objects have raised to specifier positions of IP below the subject, with the direct object appearing higher in the tree than the indirect object. The direct object has pied-piped material, and therefore the pronoun in the direct object does not c-command the indirect object. The indirect object has no material to pied-pipe, but it is lower than the direct object. Thus no Principle B violations are induced at LF, and (34a) is correctly predicted to be grammatical.

On the other hand, (33a) is still correctly predicted to be ungrammatical.

to arbitrarily place the indirect object before the direct object in a flat tree structure for now, since this has no impact on our conclusions.

(36)



The direct object, a bare pronoun, c-commands a corefering pronoun in the indirect object at LF, which is a Principle B violation. Correspondingly, the sentence in (33a) is bad.

We thus no longer make the claim that pronouns in Russian (and presumably Norwegian, though we lack the relevant data) must move to occur in a functional head. We instead claim that they must move to occur in the specifier of IP.

(37) At LF,

a. [+F] pronouns and anaphors must occur in the specifier of IP.

b. [-F] pronouns and anaphors must occur in the specifier of their governor.

Also, it is now irrelevant whether a pronoun adjoined to I c-commands into the VP dominated by I, as pronouns do not adjoin to I under the new theory.

There is one problematic prediction made by the modified theory. We now incorrectly expect a bare pronoun direct object to be able to bind an anaphor in the indirect object.

(38) a. *Petja predstavil ee$_j$ [svoemu$_j$ sosedu].
Peter introduced her$_j$-ACC her$_j$-ANAPH-DAT neighbor-DAT

b. *Petja predstavil [svoemu$_j$ sosedu] ee$_j$.
Peter introduced her$_j$-ANAPH-DAT neighbor-DAT her$_j$-ACC

Here the pronoun c-commands the anaphor at LF, but not conversely, so that Principle A

is satisfied at LF and Principle B is not violated at LF.

The following claim would account for the unacceptability of (38):

(39) In double object constructions, if one of the objects contains an anaphor and the other a pronoun, the anaphor is raised to a higher position than the pronoun is.

If the anaphor in (38) is higher than the corefering pronoun, then it cannot be bound by the pronoun and Principle A is violated.

It is possible that the the anaphor is simply raised to a higher specifier of IP than the pronoun is. Alternately, perhaps there are different dedicated functional projections to which anaphors and pronouns are raised. If we call the projection anaphors raise to AnaP and the projection pronouns raise to PronP, we would then propose the following:

(40) AnaP is higher than PronP.

Each of (39) and (40) also suffices to explain the ungrammaticality of (41), where the indirect object is a pronoun that corefers with an anaphor in the direct object. The anaphor is again raised higher than the pronoun, with a resulting Principle A violation.

(41) a. *Petja predstavil ej_j [$svoego_j$ soseda].
Peter introduced her_j-DAT her_j-ANAPH-ACC neighbor-ACC

b. *Petja predstavil [$svoego_j$ soseda] ej_j.
Peter introduced her_j-ANAPH-ACC neighbor-ACC her_j-DAT

If in double object constructions an anaphor must be raised higher than a pronoun, we can actually make no claim from the data about whether an anaphor can pied-pipe additional material. If an anaphor in an object does not corefer with the subject, then the sentence is ungrammatical because of a Principle A violation. If the anaphor does corefer with the subject, then a potential Principle B violation with a pronoun in the other object is only possible when the pronoun also corefers with the subject. In this case, a Principle B violation is created by the relationship between the subject and the pronoun, and ungrammaticality is correctly derived regardless of the status of the anaphor.

3.4 Summary of Modified Theory

We have made the following claims about Russian pronouns and anaphors:

Principle A: An anaphor must be bound in its binding domain.

Principle B: A pronoun must be free in its binding domain.

Principle C: An R-expression must be free.

- Counter to Hestvik (1992), the difference between English and Norwegian/Russian is not that English anaphors and pronouns are XP's whereas Norwegian/Russian ones are X^0's.

- Russian and Norwegian anaphors are [+F], where F is some feature.
- At LF, [+F] pronouns and anaphors must occur in the specifier of IP.
- Principles A and B apply at LF but not at S.
- Pronouns can (or must) pied-pipe material when they move to their LF positions.
- The binding domain for a pronoun or anaphor α is the minimal CFC containing α and a potential antecedent for α.
- When both objects in a double object construction contain pronouns, the pronoun in the direct object moves to a higher specifier of IP than the pronoun in the indirect object at LF.
- When one object in a double object construction contains an anaphor and the other a pronoun, the anaphor moves to a higher specifier of IP than the pronoun at LF.

Note that as a result we did not have to redefine the notion of c-command, and were able to derive facts not predicted by the original theory under any definition.

3.5 Evidence from Quantifier Scope (or Lack Thereof)

Given that pronouns and anaphors raise at LF, we might expect this movement to affect quantifier scope. However, after considering a number of possibilities, I did not find any examples in which this was the case. Nor did I find any examples where the raising was clearly predicted to affect quantifier movement and the prediction was not borne out.

To see the kinds of difficulties that arise in this investigation, consider the following example.

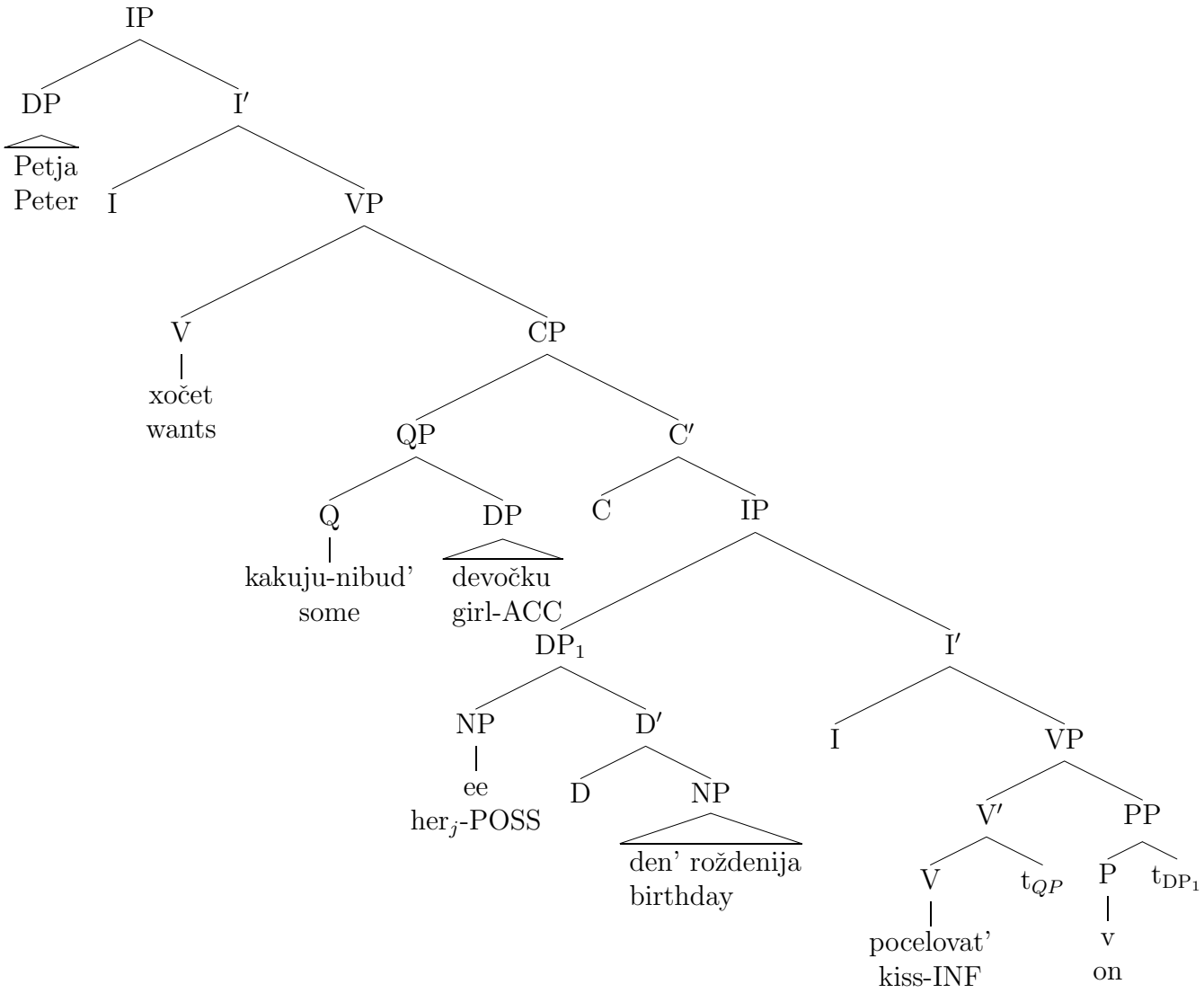
(42) Petja xočet pocelovat' [kakuju-nibud' devočku]$_j$ v [ee$_j$ den' roždenija].
Peter wants kiss-INF [some girl-ACC]$_j$ on her$_j$ day birth-GEN
'Peter wants to kiss some girl on her birthday.'

In (42), the pronoun *ee* is allowed to take a bound variable reading. This is somewhat surprising, given that the pronoun has raised, but it turns out that (42) does not actually give evidence against our theory.

Since a quantifier has to c-command any variable it binds, the quantifier phrase *kakuju-nibud' devočku* ought to appear higher than the pronoun at LF. At the same time, *kakuju-nibud'* ('some') obligatorily scopes under *xočet* ('wants') in (42). (42) has the reading that Peter wants there to be some yet to be determined girl that he kisses on her birthday, and does not have the reading that there is some specific (but perhaps unknown to the speaker) girl that Peter wants to kiss on his birthday. We therefore expect that *xočet* will appear higher than *kakuju-nibud'* at LF.

So far, this discussion is promising: we have shown that the quantifier needs to appear below *xočet*, but above the pronoun that has been raised to the specifier of an IP. However, an LF structure that fits these restrictions is in fact possible.

(43)



While we have found no examples in which variable binding is affected by the proposed pronoun and anaphor raising, nor have we found examples that rule out the proposed structures. It should be investigated further whether evidence from variable binding can be found that would support or contradict the theory presented above.

4 Movement Approach in Avrutin (1994)

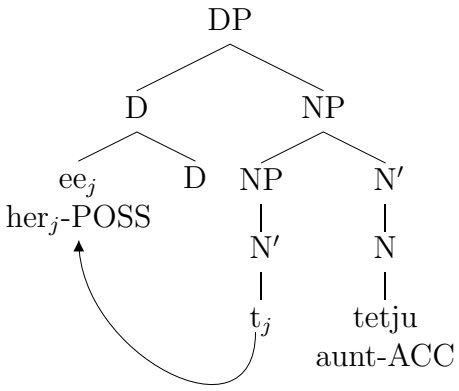
4.1 The Proposal

Avrutin (1994) presents an account of binding theory for Russian. The approach proposed is somewhat different from Hestvik (1992). In addition to Principles A and B, Avrutin (1994) makes use of the following claims.

(44) a. At LF, a pronoun or anaphor interpreted as a bound variable must adjoin to a functional projection.
b. **Rule I:** When an NP can be interpreted as a bound variable, it cannot be interpreted as a constant if the meaning derived is the same. (c.f. Reinhart (1986))
c. The binding domain for a pronoun or anaphor α is the minimal CFC containing α and a potential antecedent for α.

Also, Avrutin (1994) proposes a different structure than Hestvik (1992) for possessives.

(45)



Avrutin (1994) derives some interesting facts about bound variable readings for plural pronouns. Furthermore, supposing that a violation of Rule I does not lead to ungrammaticality judgments that are as strong as those for (at least some) violations of Principles A and B makes correct predictions. (See Avrutin (1994) for details.)

4.2 First and Second Person Pronouns

The claim that only a pronoun or anaphor interpreted as a bound variable must adjoin to a functional projection helps explain the acceptability of sentences such as (46a) and (47a).

(46) a. Ja s"el [moj obed].
I ate my-PRON-ACC dinner-ACC
'I ate my dinner.'

b. Ja s"el [svoj obed].
I ate my-ANAPH-ACC dinner-ACC
'I ate my dinner.'

(47) a. ?Ty s"el [tvoj obed]?
you-SING ate your-PRON-SING-ACC dinner-ACC
'Have you eaten your dinner?'

b. Ty s"el [svoj obed]?
you-SING ate your-ANAPH-ACC dinner-ACC
'Have you eaten your dinner?'

(48) a. *On$_i$ s"el [ego$_i$ obed].
he$_i$ ate his$_i$-POSS dinner-ACC
b. On s"el [svoj obed].
he$_i$ ate his$_i$-ANAPH-ACC dinner-ACC
'He ate his dinner.'

The first person pronoun in (46a) is not interpreted as a bound variable, as can be seen by considering ellipsis.

(49) a. Ja s"el [moj obed], i Maša tože.
I ate my-PRON-ACC dinner-ACC, and Mary also
'I ate my dinner, and Mary did too.'

b. Ja s"el [svoj obed], i Maša tože.
I ate my-ANAPH-ACC dinner-ACC, and Mary also
'I ate my dinner, and Mary did too.'

In (49a), the strongly preferred reading is that Mary and the speaker both ate the speaker's dinner, whereas in (49b) the preferred reading is that the speaker and Mary each ate their own dinner. Rule I is not violated: *moj* can be interpreted as a constant because a different meaning is thereby derived. Since *moj* is not a bound variable, according to Avrutin (1994) *moj* need not adjoin to a functional possession and can remain in situ. As discussed below, the binding domain for *moj* in (49a) is then the NP [moj obed], and thus no Principle B violation results.

The free variable interpretation is also available for second person pronouns, but not for third person pronouns. It is not surprising that first person pronouns can more easily occur as free variables than third person pronouns, as first person pronouns are more firmly grounded in the discourse. Second person pronouns are somewhat less well grounded in the discourse than first-person ones, but more so than third person ones. Thus the judgments for

(46a), (47a) and (48a) are as expected and correspond to the extent to which it is acceptable for the pronoun to be a free variable. Furthermore, even (48a), where there is not enough grounding in the discourse to make the free variable interpretation easily available, is not as ungrammatical as a Principle A violation is, for instance.

(50) **On$_i$ s"el [svoj$_j$ obed].
he$_i$ ate his$_j$-ANAPH-ACC dinner-ACC

4.3 Problems and Modifications

Avrutin (1994) claims that it follows from the definitions that when a pronoun or anaphor is in its underlying position in the specifier of an NP, that NP forms its binding domain. When a pronoun or anaphor is raised to D, its binding domain is extended to IP. Assuming that this is right, let us consider the implications. Note also that we will also assume henceforth without discussion that Principles A and B apply only at LF, for reasons similar to those discussed above.

4.3.1 Pied-Piping

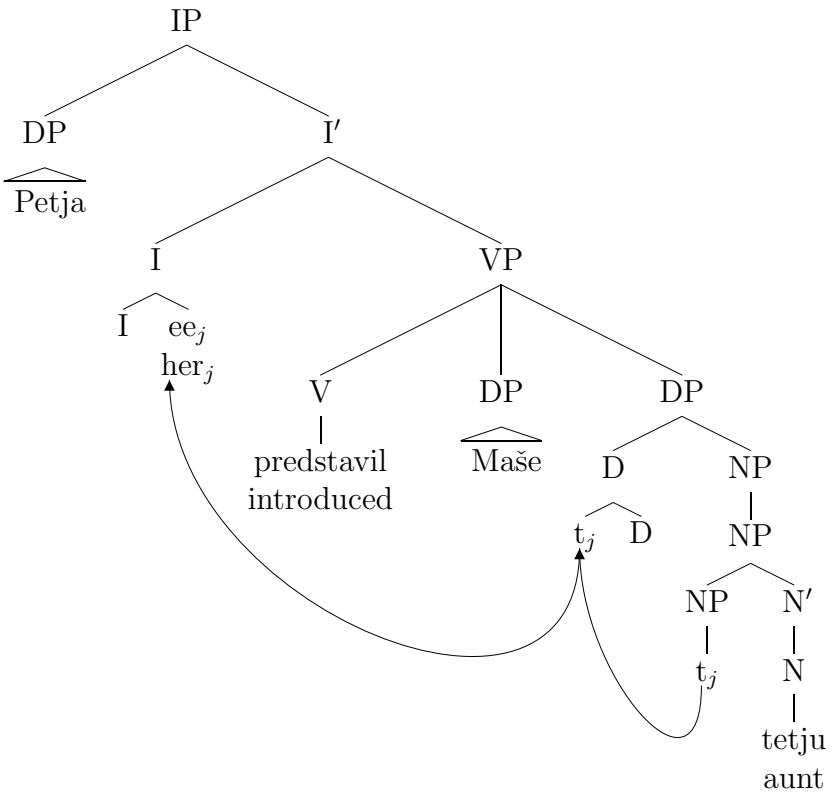
Avrutin's account is not without difficulties. For example, consider (51).

(51) a. Petja predstavil Maše$_j$ [ee$_j$ tetju].
Peter introduced Mary$_j$-DAT her$_j$-POSS aunt-ACC
'Peter introduced her aunt to Mary.'

b. Petja predstavil Mašu$_j$ [ee$_j$ tete].
Peter introduced Mary$_j$-ACC her$_j$-POSS aunt-DAT
'Peter introduced Mary to her aunt.'

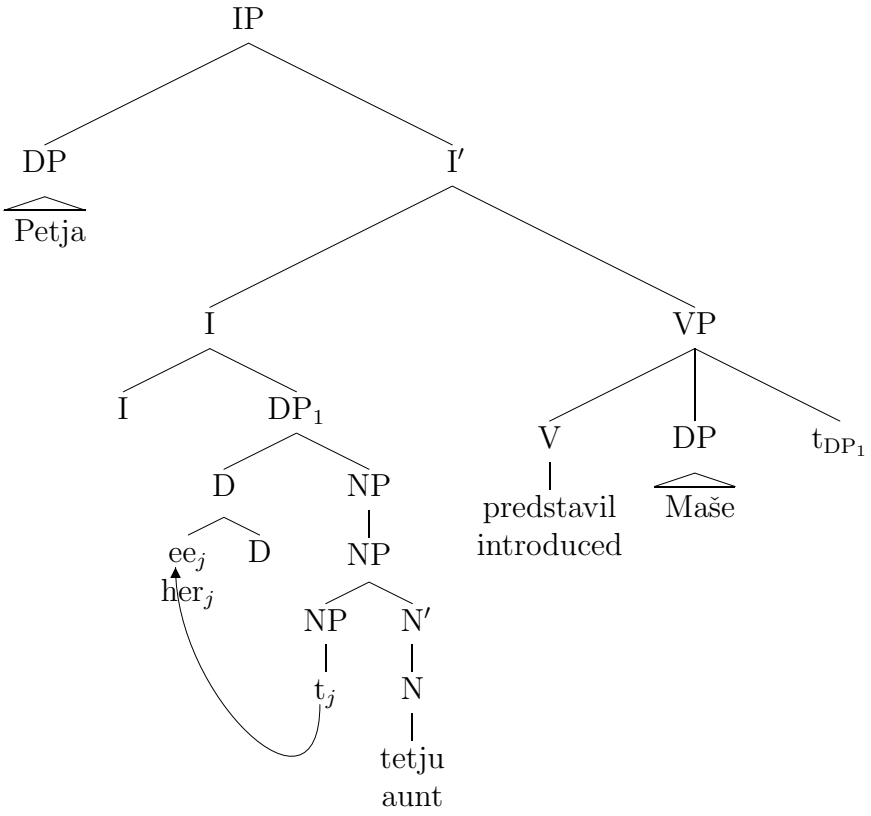
Following Rule I, *ee* must be a bound variable in both (51a) and (51b): it corefers with and is c-commanded by *Maša* in the underlying flat VP structure proposed by Avrutin (1994). Even if the flat structure is incorrect, assuming that one of the objects does c-command the other, we can discuss the case where *Maša* c-commands *ee*. As a result, *ee* must move to a functional head at LF — either D or I. If *ee* moves to D at LF, it will be bound by *Maša*, resulting in a Principle B violation, as *Maša* will now be in the pronoun's expanded binding domain. If *ee* moves as high as I, it will (depending on our definition) c-command *Maša*, resulting in a Principle C violation. Thus at least one of the sentences in (51) (or both if the VP has a flat structure) is incorrectly predicted to be ungrammatical.

(52) LF structure for (52a) with *ee* moving to I:



To resolve this issue, we again propose the possibility of pied-piping. In particular, the proposal is that a pronoun or anaphor interpreted as a bound variable must first raise to the nearest functional head. It may then raise to another functional head, possibly (or perhaps obligatorily) pied-piping some material with it. With this proposal, we can now account for the grammaticality of (51): the pronoun raises to I, pied-piping the DP with it, so that it does not c-command *Maša* at LF.

(53)



Note that we have to require that no material is pied-piped when the pronoun raises to D. Otherwise, if the pronoun could pied-pipe the NP containing it, it could always remain inside its small binding domain, and no Principle B violation would occur when a possessive pronoun in an object corefers with the subject. As we have seen, this is incorrect.

(54) *On$_i$ s"el [ego$_i$ obed].
he$_i$ ate his$_i$-POSS dinner-ACC

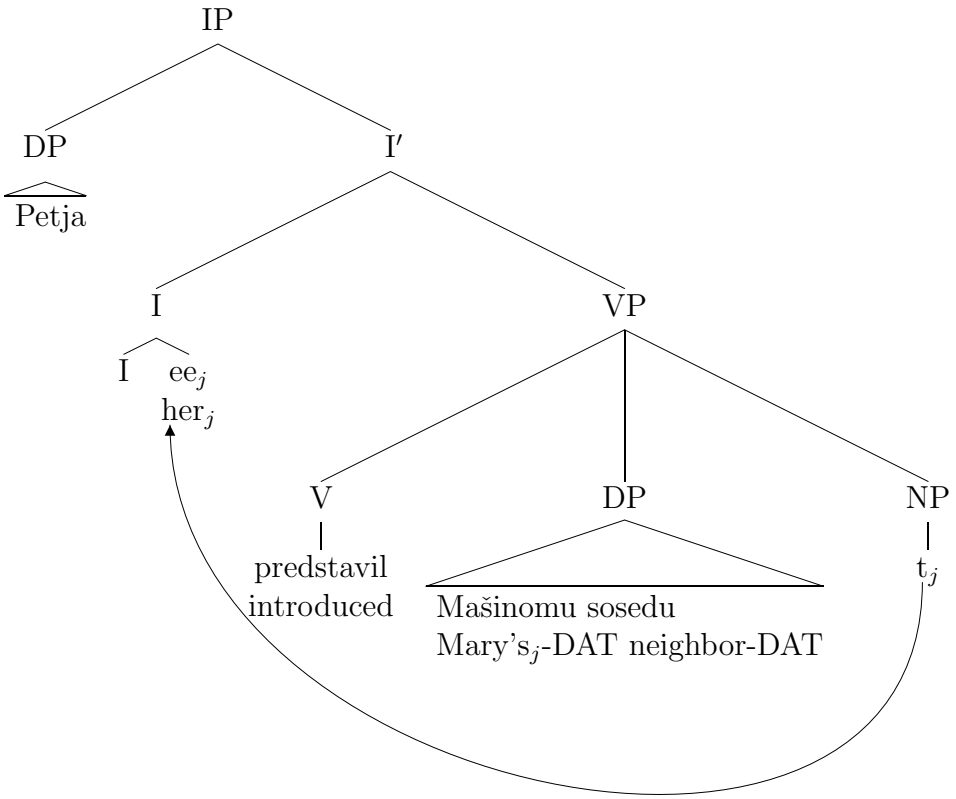
Therefore, the pronoun must first raise to D with no pied-piping, and is then able to pied-pipe the entire DP if it proceeds to raise to I.

4.3.2 Bare Pronouns

As in our discussion of Hestvik (1992), let us turn now to sentences containing bare pronoun objects. As before, there is no material for these objects to pied-pipe. Furthermore, since they are not contained in a DP, they must raise to I. The raised bare pronoun will then c-command the other object, if that object contains an R-expression and remains in situ. Therefore, our theory correctly predicts that sentences such as those in (31) (repeated below) are degraded, assuming that a pronoun adjoined to I c-commands into the VP.

(55) a. ?*Petja predstavil [Mašinomu$_j$ sosedu] ee$_j$.
Peter introduced Mary$_j$'s-DAT neighbor-DAT her$_j$-ACC
b. ?Petja predstavil [Mašinogo$_j$ soseda] ej$_j$.
Peter introduced Mary$_j$'s-ACC neighbor-ACC her$_j$-DAT
'Peter introduced Mary's neighbor to her.'

(56) LF structure of (56a):



It remains to be explained why a bare pronoun indirect object can corefer with a pronoun in the direct object, but a bare pronoun direct object cannot corefer with a pronoun in the indirect object. In the Avrutin (1994) account, there is symmetry between the direct and indirect objects, and this prediction is not made.

(57) a. ?*Petja predstavil [ee$_j$ sosedu] ee$_j$.
Peter introduced her$_j$-POSS neighbor-DAT her$_j$-ACC
b. Petja predstavil ej$_j$ [ee$_j$ soseda].
Peter introduced her$_j$-DAT her$_j$-POSS neighbor-ACC
'Peter introduced her neighbor to her.'

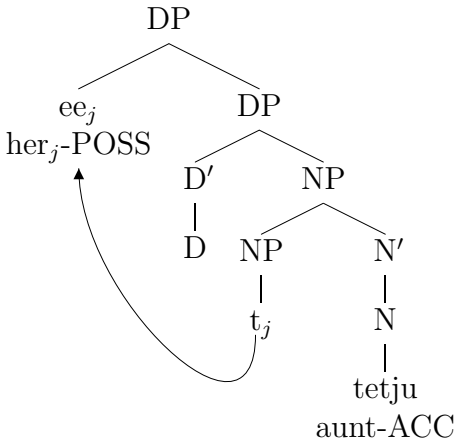
We can do exactly what we did in our discussion of Hestvik (1992), and claim that the two objects are raised to specifiers of IP, rather than to I. We must also assert that a direct

object must raise to a higher specifier than the indirect object, provided that both are raised to IP. Then in (57a) the direct object must raise to a specifier of IP, since there is no D for it to adjoin to, and the indirect object cannot adjoin any higher than the direct object. A Principle B violation results, and (57a) is correctly predicted to be bad.

In (57b), it is the indirect object that must be raised, but the direct object can raise to a higher specifier of IP, pied-piping additional material. Thus there is no Principle B violation, and (57b) is correctly predicted to be good.

Note that we can change the proposed structures, so that a pronoun moves to a specifier of D rather than adjoining to D. This allows us to avoid a disjunctive property, and does not affect the predictions made. For example:

(58)



Again, it will be necessary to stipulate that anaphors are obligatorily raised higher than pronouns; for Avrutin (1994), anaphors obligatorily raise to I in any case.

Thus, with virtually the same modifications as those made to Hestvik (1992), we have modified the account in Avrutin (1994) to explain additional data and no longer rely on redefining c-command.

4.4 Summary of Modified Theory

The following is the resulting modified theory from Avrutin (1994).

Principle A: An anaphor must be bound in its binding domain.

Principle B: A pronoun must be free in its binding domain.

Principle C: An R-expression must be free.

- At LF, a pronoun or anaphor interpreted as a bound variable must be in the specifier of a functional projection.

- **Rule I:** when an NP can be interpreted as a bound variable, it cannot be interpreted as a free variable if the meaning derived is the same.
- Principles A and B apply at LF but not at S.
- Pronouns may not pied-pipe material when they raise to the nearest available specifier of a functional projection. They can (or must) pied-pipe material if they then move to another specifier of a functional projection.
- The binding domain for a pronoun or anaphor α is the minimal CFC containing α and a potential antecedent for α.
- When both objects in a double object construction contain pronouns that move to IP, the pronoun in the direct object moves to a higher specifier of IP than the pronoun in the indirect object at LF.
- When one object in a double object construction contains an anaphor and the other a pronoun that moves to a specifier of IP, the anaphor moves to a higher specifier of IP than the pronoun at LF.

Again, as a result of the modifications, we did not have to redefine the notion of c-command and were able to derive additional correct predictions

5 Conclusion

We have discussed the theories presented in Hestvik (1992) and Avrutin (1994), which are similar in a number of ways, and suggested similar modifications to them. These modifications derived some Russian data that was not accounted for by the original theories, as well as providing more solid accounts of the same data. It should be noted that Avrutin (1994) provides an account for some Russian data that is not predicted by Hestvik (1992).

Of course, we have not discussed all aspects of binding in Russian. For example, we have not considered the effects of scrambling, verbs with non-nominative agents, or embedded sentences. It therefore remains to be seen whether the theories presented here will stand up to further empirical tests.

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