

Comitative and Plural Pronoun Constructions

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1 Introduction

Russian has two different means of combining two NPs to form a plural NP.

(1) [*i*-conjunction]

- (a) *Maša i Daša xodjat v školu.*
Masha.Nom and Dasha.Nom go.PL to school
Masha and Dasha go to school.

(b) [*s*-conjunction]

- Maša s Dašei xodjat v školu.*
Masha.Nom with Dasha.Instr go.PL to school
Masha and Dasha go to school.

The construction in (1a) and in (1b) mean exactly the same and trigger exactly the same type of agreement with the verb. The question that I want to solve in this paper is whether (1a) and (1b) have the same syntactic structure.

However, *s*- adjuncts do not trigger the plural agreement with the verb:

(2) [*s*-adjunction]

- Anja s Vanjei pošla v biblioteku*
Anya with Vanya went.SG.Fem to library
Anya went to the library with Vanya.

In addition, there is another interesting construction in Russian, illustrated in (3) by the first reading. (The second reading is the instance of *s*-adjunction, as will be shown below). Some analyses assume that this construction (on the first reading) is also an instance of *s*-coordination (e.g. McNally (1993)), others ascribe the adjunction structure to it (e.g. Ladusaw (1989)).

- (3) *My s Dašei xodim v školu.*
We.Nom with Dasha.Instr go.PL to school
Dasha and I go to school./Dasha and we go to school.

I will begin the discussion with the syntactic and semantic differences between *with*-conjuncts and *with*-adjuncts. In order to make my exposition simpler, I will examine data that involve the comitative construction with singular noun phrases; however, the same arguments are applicable to the comitative construction with plural noun phrases. Having established that there are two types of *with*-phrases, I will compare *s*(with)-coordination with *i*(ordinary)-coordination. I will show that the two types of coordination realize different syntactic structures. Then, I will argue that examples like the first reading of (3) are instances of the Inclusive Plural Pronoun Construction (IPPC). A formal account of the three comitative types within the framework of HPSG will be proposed.

2 Comitative Adjuncts vs. Comitative Conjuncts

Russian has comitative prepositional phrases which are VP-adjuncts consisting of the preposition *s* (*with*) and an instrumental case-marked NP. I will summarize the main arguments in favor of distinguishing adjunction from *s*-coordination. Some of these arguments have been mentioned in previous literature with regard to Polish, Latvian, Hungarian and other languages (see Schwartz (1988), Schwartz (1988), Ladusaw (1989), Dyla (1988), Aissen (1988), Aissen (1989), Urtz (1994), Vassilieva (2000) among others).

2.1 Number Agreement

In Russian, only nominative-marked NPs agree with the verb. If a sentence lacks a nominative-marked NP, then the verb is in its third person singular neuter form, as can be seen from the following examples:

- (4) (a) *Oni xotjat pit'.*
They.Nom want.PL drink.Inf
They want to drink.

- (b) *Im xočetsja pit'.*
 They.Dat want.neuter.SG.refl drink.Inf
 They want to drink.
- (5) (a) [adjunction]
Maša s Dašei xodit v školu.
 Masha.Nom with Dasha.Instr go.3SG to school
 Masha goes to school with Dasha.
- (b) [coordination]
Maša s Dašei xodjat v školu.
 Masha.Nom with Dasha.Instr go.PL to school
 Masha and Dasha go to school.

In (5a), *Maša* is nominative and hence require the singular agreement with the verb; however, the verb in (5b) exhibits plural agreement, which seems to indicate that the verb has a plural subject in the nominative case. This fact indicates that the two sentences have different syntactic structures: (5a) is adjunction, whereas in (5b), the NP-s-NP cluster is in fact a coordinate phrase. This is not the only argument though.

2.2 Reflexive Pronouns

Another set of facts that seem to indicate that comitatives can be divided into two types—coordinate and adjunct comitatives—involves reflexive pronouns. Consider the following set of sentences:

- (6) [adjunction]
- (a) *Maša_i s Dašei_j rešila prodat' svoi_i/*ejoj_i komputer.*
 Masha with Dasha decided.SG sell.Inf self-/her computer
 Masha and Dasha decided to sell Masha's computer.
- (b) *Maša_i s Dašei_j rešila prodat' *svoij_j/*ejoj_j komputer.*
 Masha with Dasha decided.SG sell.Inf self-/her computer
 Masha and Dasha decided to sell Dasha's computer.
- (c) *Maša_i s Dašei_j rešila prodat' svoi_{i+j}/*ix_{i+j} komputer.*
 Masha with Dasha decided.SG sell.Inf self-/their computer
 Masha and Dasha decided to sell their computer.

In (6), the only antecedent for *svoi* is *Maša*. The reflexive cannot be bound jointly by *Maša* and *Daša*. In (7), on the other hand, the situation is reversed: the possessive reflexive cannot be anteceded by *Maša* alone since it must have plural agreement. Thus, it must be bound jointly by *Maša* and *Daša*.

(7) [coordination]

- (a) *Maša_i s Daše_i_j rešili prodat' *svoi_i/*e_j_i komputer.*
 Masha with Dasha decided.PL sell.Inf self-/her computer
 Masha and Dasha decided to sell her computer.
- (b) *Maša_i s Daše_i_j rešili prodat' *svoi_j/*e_j_j komputer.*
 Masha with Dasha decided.PL sell.Inf self- computer
 Masha and Dasha_j decided to sell her_j computer.
- (c) *Maša_i s Daše_i_j rešili prodat' svoi_{i+j}/*ix_{i+j} komputer.*
 Masha with Dasha decided.PL sell.Inf self- computer
 Masha and Dasha decided to sell their computer.

Note also that when a prepositional phrase occurs postverbally, the agreement with the verb is always singular, whereas a prepositional phrase in preverbal position seems to comprise a constituent together with the NP that triggers plural agreement:

(8) (a) [adjunction]

Maša_i rešila s Daše_i_j prodat' svoi_i komputer.
 Masha decided.SG with Dasha sell.Inf self- computer
 Masha and Dasha decided to sell Masha's computer.

(b) [coordination]

**Maša_i rešili s Daše_i_j prodat' svoi_{i+j} komputer.*
 Masha decided.PL with Dasha sell.Inf self- computer
 Masha and Dasha decided to sell their computer.

Thus, the agreement facts suggest that there are two comitative types: adjunction and coordination.

2.3 Discontinuity

If we adopt the hypothesis that comitative constructions are homogeneous and the NP-s-PP string is one constituent, then the fact that comitative constructions behave differently with respect to discontinuity becomes puzzling. It seems that 'extraction' out of the NP-s-NP string is allowed in the comitative constructions with singular agreement and forbidden in the comitative coordinate constructions with plural agreement. This fact suggests that the former type of construction is adjunction and the latter is coordination.

(9) (a) [adjunction]

S kem Maša pošla v kino?
With whom-Instr. Masha.Nom went.SG to movie
With whom did Masha go to the movies?

(b) [coordination]

**S kem Maša pošli v kino?*
With whom-Instr. Masha.Nom went.PL to movie
With whom did Masha go to the movies?

(c) [coordination]

**Kto s Mašei pošli v kino?*
Who.Nom with Masha.Instr went.Pl to movie
Who went to the movies with Masha?

(d) [adjunction]

Kto s Mašei pošol v kino?
Who.Nom with Masha.Instr went.Sg to movie
Who went to the movies with Masha?

If we adopt another hypothesis, namely, that the NP and the s-PP are two separate constituents, then in a language like Russian, which has relatively free word order, there is no reason to expect (11) to be ungrammatical. However, the ungrammaticality of (11) suggests that the NP-s-NP string is in fact a single constituent.

(10) *Tanja s Vanei zavtra/nakonets-to poidut v restoran.*
Tanya with Vanya tomorrow/eventually go.FUT.PL to restaurant
Tomorrow (Eventually), Tanya and Vanya will go to the restaurant.

(11) **Tanja zavtra/nakonets-to s Vanei poidut v restoran.*
Tanya tomorrow/eventually with Vanya go.FUT.PL to restaurant
Tomorrow (Eventually), Tanya and Vanya will go to the restaurant.

(12) *Tanja zavtra/nakonets-to s Vanei poidyot v restoran.*
Tanya tomorrow/eventually with Vanya go.FUT.SG to restaurant
Tomorrow (Eventually), Tanya will go to the restaurant with Vanya.

2.4 Semantic Difference

The meaning of *s* 'with' sometimes makes it difficult to distinguish between the adjunct reading (13a) and the conjunct reading as in (13b):

(13) (a) [adjunction]

Maša xodit s Dašei v školu.
Masha goes.SG with Dasha to school
Masha and Dasha go to school.

(b) [coordination]

Maša s Dašei xodjat v školu.
Masha with Dasha go.PL to school
Masha and Dasha go to school.

It is hard to put one's finger on the semantic difference between the comitative adjunction and the comitative coordination. However, there are ways to disambiguate a construction, forcing a coordination-only meaning¹. Coordinate constructions can have either a collective or a distributive reading, whereas *s*-adjuncts can have only a collective reading, as in the English example: *Mary read the book with John*. An *s*-adjunct cannot modify a verb that demands a distributive reading. Thus, for example, verbs such as *believe* or *know* will not have *with*-modifiers. However, *s*-phrases with coordinate meanings are acceptable with these verbs in (14b) just as are regular coordinated subjects (14c):

(14) (a) [adjunction]

**Maša verit s Dašei v boga.*
Masha believe.3SG.Pres with Dasha.Instr in God
*Masha believes in God with Dasha.

(b) [*s*-coordination]

Maša s Dašei verjat v boga.
Masha with Dasha.Instr believe.3PL.Pres in God
Masha and Dasha believe in God.

(c) [ordinary coordination]

Maša i Daša verjat v boga.
Masha and Dasha.Instr believe.3PL.Pres in God
Masha and Dasha believe in God.

¹The cases discussed in this section serve as counterexamples to the claim made by McNally (1993) that comitatives always have a collective reading.

The ability of a *s*-phrase to occur with verbs like *verit'* 'believe' that only trigger distributive readings can be considered to be a diagnostic for *s*-coordination.

In addition, comitative adjuncts cannot occur with reciprocals:

(15) (a) [coordination]

Maša s Dašei ljubyat drug druga.
Masha with Dasha like each other
Masha and Dasha like each other.

(b) [adjunction]

**Maša s Dašei ljubit drug druga.*
Masha with Dasha like each other
*Masha likes each other with Dasha.

Additional evidence in favor of distinguishing the two syntactic structures comes from the following examples:

(16) (a) [adjunction]

Maša s Dašei zarabotala tri rublja.
Masha with Dasha earned.SG three rubles
Masha earned three rubles with Dasha.

(b) [coordination]

Maša s Dašei zarabotali tri rublja.
Masha with Dasha earned.PL three rubles
Masha and Dasha earned three rubles/Masha and Dasha each earned three rubles (6 rubles total)

As becomes evident from the translations of the examples provided in this section, the comitative adjuncts do not allow a distributive reading, whereas the comitative conjuncts allow the object to either distribute over the subject or not.

Thus, the agreement, binding, extraction and semantic facts clearly show that there are two types of comitative constructions: adjunction and coordination.

3 NP-NP and NP-PP Coordination Hypotheses

The next question is whether comitative and ordinary coordination have the same syntactic structure. From the data discussed so far, it is natural to assume that ordinary and *s*-coordination are the same, since their behavior seems to be identical. However, the existence of a special form of conjoining two NP's might hinge on the existence of a different syntactic structure. In this section, I will explore the two possible hypotheses.

3.1 Dyła 1988

One of the most natural assumptions to make with respect to *s*-coordination is to assume that it is exactly the same as ordinary coordination, or at least very similar.

Dyła (1988), who considers an analogous phenomenon in Polish, treats comitative constructions that trigger plural verb agreement as 'quasi-comitative'; i.e. they look like comitative constructions but exhibit the syntactic properties of coordinate constructions. Dyła's main argument is the fact that both ordinary and comitative coordination² triggers the plural agreement with the verb. Dyła (1988) argues that comitative coordinate phrases ('quasi-comitative constructions') are indeed coordinate constructions. Consider the following Polish example Dyła (1988):

- (17) *Ewa z Jankiem poszli na spacer.*
nom.fem with instr.masc went-3pl.masc for walk
Eve and John went for a walk.

This comitative construction is analogous to the Russian examples discussed in the previous sections. The difference is that in Polish the picture becomes more complicated due to gender agreement. Only nominative-marked NPs can be controllers of gender agreement in Polish. When no NP meets this requirement, the verb is in its third neuter form. In sentences with a controller, the verb agrees with the controller.

Dyła offers a GPSG analysis of these constructions. He analyzes the NP-*z*-NP string as an instance of coordination of two NPs, one of which looks like a PP. He makes this assumption on theory internal grounds. On his analysis, masculine is a default value for the feature [GENDER] on a human or animate NP. The value for [GENDER] of the NP in the *z*-NP string contributes to the value for [GENDER] on the mother node, otherwise it will be impossible to provide a systematic account of gender resolution in quasi comitatives.

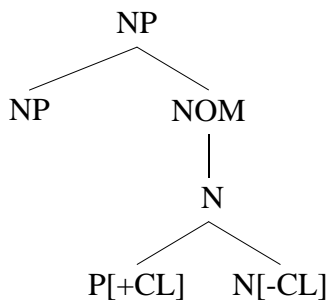
In order to make this idea work, Dyła treats *z* neither as a conjunction, nor as a full-fledged preposition. The *z*-phrases are rather NPs with proclitic prepositions. He provides a number

²Here and in the further discussion of McNally (1993), I am using the term 'comitative coordination' instead of *s*-coordination to preserve the original terminology of the authors.

of arguments to support this claim. Polish PPs, for instance, behave very much like NPs with respect to extraction. Both NPs and PPs allow extraction of left branches. In other words, Polish allows extraction of prepositions and determiners out of what look like PPs as if they were single constituents.

- (18) *Z ktora rozmawiales dziewczyna?*
 with which.Instr talked.2SG girl.Instr
 lit.: With which did you talk girl?

Dyła argues for the following internal structure of the so-called PP in Polish:



- (19)

The NP-z-NP string does not involve a PP that could be a barrier to inheritance of gender. In order to account for the fact that the preposition *z* co-occurs with the NP in the instrumental case, Dyła considers two possible assumptions 1) *z* subcategorizes for an instrumental NP, or 2) that *z* governs the instrumental case on N. For the former, the preposition would have to be a sister of the instrumental NP. For the latter, no such assumption is needed. Dyła's solution to this problem is that *z* governs the instrumental case on N (pp.408-410):

- (20) FCR4:|[P[PFORM *z*]▷[GOV N[CASE INSTR]]]|

In addition, Dyła provides further constraints to account for a wider range of data in Polish. He insures that the NP in quasi-comitative coordination must be a proper noun and never a pronoun:

- (21) FCR5:NP[CONJ NIL,FIRST P[PFORM *z*]▷[-COMMON,-PRO]]

- (22) CCR19:|[NP[CONJ NIL,-COMMON,-PRO,FIRST P[PFORM *z*]]≡NP[CONJ NIL,-COMMON,-PRO]]|

Dyła's multi-headed analysis perfectly accounts for the number and gender agreement facts in Polish. However, there are several factors that seem to suggest we might want look for another way of explaining the comitative phenomenon in Russian. First, the agreement facts in Russian are much more simpler: they do not involve gender. In addition, there is evidence in Russian that suggests that *s*-coordination and ordinary coordination are different syntactic structures, contrary to Dyła's assumption:

S-coordinate constructions differ from ordinary coordination in the following ways:

1. Unlike ordinary coordination, comitatives are not iterative:

- (23) (a) *Daša i Maša i Saša.*
 Dasha and Masha and Sasha
 Dasha, Masha and Sasha
- (b) **Daša s Maše*i* s Saše*i*.*
 Dasha with Masha with Sasha
 Dasha, Masha and Sasha
- (c) *Daša s Maše*i* i Petja s Saše*i*.*
 Dasha with Masha and Petya with Sasha
 Dasha and Masha, Petya and Sasha

2. *S*-coordination is limited to NPs, as opposed to *i* that has essentially the same properties as does *and* in English:

- (24) (a) **Vanja kupil s pročital knigu.*
 Vanya bought with read book
 Vanya bought and read the/a book.
- (b) **Vanja čital knigu včera s segodnja.*
 Vanya read book yesterday with today
 Vanya was reading a/the book yesterday and today.
- (c) **Vanja - krasivyi s umnyi paren'.*
 Vanya handsome with smart guy
 Vanya is a handsome and smart guy.
- (d) **Vanya pročital knigu s ja napisala pis'mo.*
 Vanya read book with I wrote letter
 Vanya read a/the book and I wrote a/the letter.

3. Comitatives behave differently with possessive pronouns McNally (1993). In Russian there are both reflexive and non-reflexive pronouns; only the latter may be used when a possession relation holds between the entities denoted by the coordinate phrase. McNally (1993) claims that both kinds of possessive pronouns can appear in comitative constructions. However, native speakers of Russian that I consulted accept only comitative constructions with reflexive pronouns (where the NP subject is coindexed with the possessive that modifies the PP):

- (25) (a) *Pisatel' i ego semja pereexali v Moskvu.*
 Writer and his family moved.PL to Moscow
 The writer and his family have moved to Moscow.
- (b) **Pisatel' i svoja semja pereexali v Moskvu.*
 Writer and self' family moved.PL to Moscow
 The writer and his family have moved to Moscow.
- (26) (a) **Pisatel' s ego semjoi pereexali v Moskvu.*
 Writer with his family moved.PL to Moscow
 The writer and his family have moved to Moscow.
- (b) *Pisatel' so svoei semjoi pereexali v Moskvu.*
 Writer with self' family moved.PL to Moscow
 The writer and his family have moved to Moscow.

Thus, the data from Russian seem to be different and require a different account.³

3.2 McNally 1993

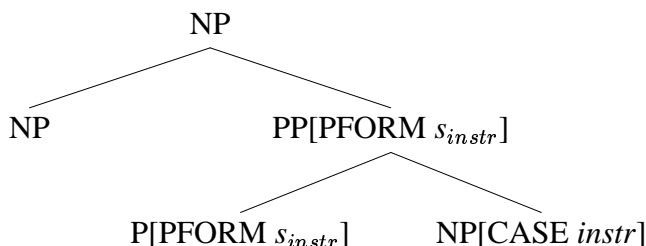
While Dylą prefers the multi-headed analysis in order to account for the number and gender agreement facts in Polish and assumes a Sag *et al.* (1985)-style account of number resolution, where the instrumental case-marked NP, crucially designated a head, can share its number and gender feature values with the mother, McNally proposes another analysis of an analogous set of data in Russian within the same framework, GPSG. As McNally observes, the distribution of reflexive and non-reflexive pronouns suggests that comitative constructions and ordinary coordinates have a different syntax. The first NP in a comitative phrase can serve as an antecedent for a reflexive possessive in the prepositional phrase, which is impossible in the ordinary coordinate phrase. These examples are repeated below for convenience:

- (27) (a) *Pisatel' i ego semja pereexali v Moskvu.*
 Writer and his family moved.PL to Moscow
 The writer and his family have moved to Moscow.
- (b) **Pisatel' i svoja semja pereexali v Moskvu.*
 Writer and self' family moved.PL to Moscow
 The writer and his family have moved to Moscow.
- (c) **Pisatel' s ego semjoi pereexali v Moskvu.*
 Writer with his family moved.PL to Moscow
 The writer and his family have moved to Moscow.

³As for the last two sets of data, Polish does not exhibit the same pattern with reflexive pronouns (Dylą, p.c.)

- (d) *Pisatel' s svoei semjoi pereexali v Moskvu.*
 Writer with self' family moved.PL to Moscow
 The writer and his family have moved to Moscow.

McNally proposes the following structure for the comitative construction:



(28)

In the structure above, an NP and PP are respectively the head and non-head daughters of a complex NP. McNally provides the following arguments in favor of such an analysis of comitative coordinate constructions: 1) it accounts very straightforwardly for the distribution of case morphology in the construction; 2) it establishes a parallel with the related Plural Pronoun Construction. However, such an analysis suffers from a number of problems. First, as will be shown in the subsequent sections, Plural Pronoun Constructions exhibit a distinct syntactic behavior and cannot be analyzed as instances of comitative coordination, so that the argument provided by McNally loses its force. In addition, having adopted such a structure, we are left with the problem of explaining the binding and number agreement facts. Moreover, this analysis fails to predict that comitative coordination is possible only with non-pronominal noun phrases:

- (29) (a) *On s sestroi kupil komputer.*
 He with sister bought.SG.Masc.3P computer
 He bought a computer with his sister.
- (b) **On s sestroi kupili komputer.*
 He with sister bought.PL computer
 He and his sister bought a computer.
- (c) *My s družjami kupili komputer.*
 We with friends bought.PL computer
 My friends and I bought a computer./We and our friends bought a computer.

In the subsequent sections, it will be shown that Plural Pronoun Constructions belong to neither of the coordination types. However, before turning to the details of the analysis, I will summarize the main binding facts found in Russian. This digression is necessary for establishing an alternative syntactic analysis of *s*-coordination.

4 Binding Facts: Ordinary and S-Coordinate Structures have a Different Syntax

One of the arguments for differentiating comitative and coordinate constructions comes from the behavior of possessive pronouns. It has been shown that the first conjunct in the ordinary coordinate phrase can bind non-reflexive possessives that modify the second conjunct, whereas the first noun phrase in the comitative coordinate phrase binds reflexive possessive pronouns. I do not pretend to provide even a rudimentary analysis of binding in Russian, but I will try to summarize some important generalizations that are necessary for the current purposes.

Russian reflexive pronouns are nominative-argument oriented, i.e. they usually have subject antecedents:

- (30) (a) *Tanja_i rasskazala Anje o sebe_i/nei*_i.*
Tanya.NOM told Anya.Dat about self.Fem.Prep/*her
Tanya_i told Anya about herself_i/*her_i.
- (b) *Tanja_i priglasila svoju_i/*ejo_i podругu v kino.*
Tanya invited self's/*her friend.fem to movie
Tanya invited her friend to go see a movie.
- (c) *On_i vstretil Tanju_j i svoju_i/ejo_j/*ego_i sestru*
He met Tanya and self's/her/*his sister
He_i met Tanya_j and his_i/her_j sister.

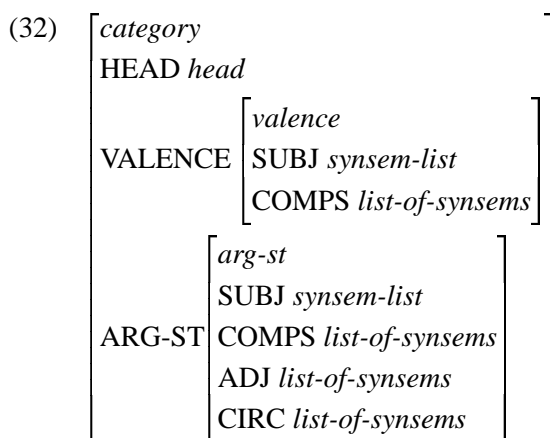
The binding theory as formulated in Pollard Sag (1994) is not universal. Problems posed by many languages have confirmed this. It seems that binding constraints should be language-specific. In this paper, I will adopt the Binding Theory proposed by Kupsć Marciniak (1996) for Polish. In English (and many other languages), possessives are analyzed as determiners, which are single obligatory specifiers of NPs (except for mass and count plural nouns). This approach is difficult to adopt for languages such as Russian or Polish. In Russian, as well as in Polish, there are no obligatory determiners; in fact, they occur in NPs relatively rarely. Besides, possessives can be mixed with other determiners. This behavior suggests possessives should be analyzed as adjuncts rather than specifiers.

Pollard Sag (1994) allow only the constituents which are subcategorized for to be bound. This condition seems to be too weak:

- (31) *Tanja_i prodala svoju_i/*eyo_i mašinu.*
Tanya.NOM sold self's/*her car
Tanya_i sold her_i car.

As the example in (31) shows, the adjunct like obligatory elements is bound by the subject. Since adjuncts are not members of the VALENCE list, they are not subject to binding constraints. Kupsć Marciniak (1996) propose to reformulate the level at which binding theory is defined in order to widen the scope of the theory. The idea that the binding theory should account both for adjuncts and circumstantial, i.e. optional constituents, should be considered as well.

VALENCE attributes are independently included in the VALENCE structure that contains SUBJ(ECT) and COMP(LEMENT)S. Kupsć Marciniak (1996) omit the SPR attribute since they analyze specifiers as adjuncts. The subcategorization principle is fulfilled by valence attributes, whereas ARG-ST remains unaffected and serves mainly as the locus of the binding theory. Following Pollard Calcagno (1997) and Kupsć Marciniak (1996), I assume that ARG-ST should not be a list (unlike in Manning Sag (1999)) and that ARG-ST should have a richer internal structure with attributes of its own. So, I adopt the following structure:



The distinction between VAL|SUBJ and ARG-ST|SUBJ values will be crucial for the binding theory. The ADJ attribute corresponds to ADJUNCTS that modify NPs, while CIRC(UMSTANTIAL) represents modifiers of VPs. This distinction is useful since both (CIRC and ADJ) modify different kinds of phrases. Following Kupsć Marciniak (1996), I assume that possessives are elements of the ADJ list, i.e. they are treated as adjuncts. ⁴

The main differences between the binding theory that is adopted and Pollard Sag (1994) are the following:

- (33) (1) This binding theory is based on the property of being a subject and not on the obliqueness relation;⁵

⁴Presumably, not all adjuncts will appear at the ARG-ST, but only those that are relevant for binding and extraction. Since this issue goes beyond the scope of this paper and irrelevant for the analysis of comitatives, I leave it open.

⁵Kupsć Marciniak (1996) provide examples that show that the linear order of constituents should also be taken into account when considering the distribution of personal and possessive pronouns- an additional piece of evidence that the obliqueness relation is not sufficient.

- (2) The theory is defined in terms of the ARG–ST structure, which contains optional elements as well, not at the VALENCE level. ⁶

The relation corresponding to the o-command of Pollard Sag (1994) is called *subject command (s-command)*:

- (34) Let Y and Z be *synsem* objects with distinct LOCAL values. Then Y *s-commands* Z just in case either:
- (i) Y belongs to the ARG–ST|SUBJ list, and Z belongs to one of the ARG–ST lists; or
 - (ii) Y s-commands some X and Z belongs to one of X’s ARG–ST lists; or
 - (iii) Y s-commands some X that is a projection of Z.

The definition of local s-command is very similar to the definition of s-command. The only difference is that in the former definition recursion is stopped when the head of a phrase has a non-empty subject at the ARG–ST level. The definition of *local s-command* is given below:

- (35) Let Y and Z be *synsem* objects with distinct LOCAL values. Then Y *locally s-commands* Z just in case either:
- (i) Y belongs to the ARG–ST|SUBJ list, and Z belongs to one of the ARG–ST lists; or
 - (ii) Y locally s-commands some X and Z belongs to one of X’s ARG–ST lists; or
 - (iii) Y locally s-commands some X that is a projection of Z and Z’s value of ARG–ST|SUBJ is an empty list.

The definition of local s-command cannot be formulated (unlike in English) without recursion, which is necessary for the proper analysis of preposition phrases and sentences with embedded noun adjuncts:

- (36) *Tanja_i prodala mašinu zheny eyo*_{i/j} brata.*
 Tanya sold car.Acc wife.Gen her brother.Gen
 Tanya sold a car of her brother’s wife.

⁶Kupsć Marciniak (1996) modify the nominal object hierarchy to account for Polish facts. Since this issue is not directly relevant for the specific data I want to account in this paper, I will not provide the full details of their analysis.

The pronoun in (36) should be considered locally, but it is not at the ARG–ST level of the sentence head. It appears deeper in the NP structure and for this reason the recursion (with the stop condition added) is necessary.

The definition of local and global o-binding and o-free relations do not need reformulation; for ease of presentation, we will rename them: (*local*) *s-binding* and (*locally*) *s-free*.

(37) Y (*locally*) *s-binds* Z just in case Y and Z are coindexed and Y (*locally*) *s-commands* Z. If Z is not (*locally*) *s-bound*, then it is said to be (*locally*) *s-free*.

Following the proposal for Polish, I can now formulate the binding theory for Russian.

(38) BINDING THEORY FOR RUSSIAN⁷:

Principle A. A reflexive anaphor must be *s-bound*.

Principle B. A pronoun must be *locally s-free*.

Principle C. A non-pronoun must be *s-free*.

Now consider (31) again. This is a simple sentence with a possessive expression. *svoju* ('self's') is a possessive anaphor and should be *s-bound* according to principle A. *Tanya* is the *s-binder* of *svoju* in case they are coindexed and *Tanya* *s-commands* the phrase *svoju mašinu* because *Tanya* is the subject and the phrase *svoju mašinu* is a complement, (i.e. belongs to the ARG–ST) of the same lexical head, *prodala*. According to clause (iii) of the definition of (34), if *Tanya* *s-commands* the whole phrase, it *s-commands* its head, in this case *mašinu*. *Svoju* is an adjunct of *mašinu* and therefore belongs to the ARG–ST of *mašinu*. Applying clause (ii) of (34) I prove that *Tanya* *s-commands* *svoju*.

5 Formal Analysis of S-coordination of NPs

As evident from the data discussed so far, the *s-* and ordinary coordinate constructions should be treated separately in Russian. In addition, as has been pointed out in the first section, only non-pronominal NP's can participate in *s-coordination*:

(39) (a) *On s sestroi kupil komputer.*
 He with sister bought.SG.Masc.3P computer
 He bought a computer with his sister.

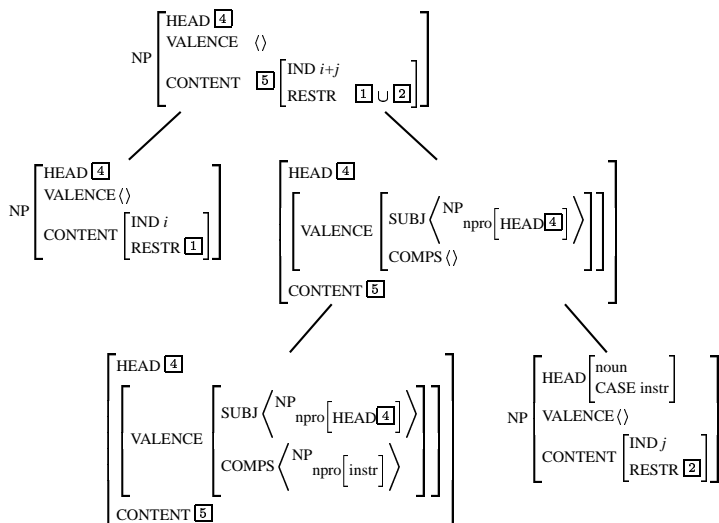
⁷The principles of the binding theory are not applied if VAL—SUBJ is not a noun phrase for the head of the phrase

- (b) **On s sestroi kupili komputer.*
 He with sister bought.PL computer
 He and his sister bought a computer.

I propose to treat *s* as a nominal head that selects two noun complements.

$$(40) \left[\begin{array}{l} \text{PHON} \langle s \rangle \\ \text{HEAD } \textit{noun} \\ \text{VALENCE} \left[\begin{array}{l} \text{SUBJ} \langle \text{NP}_{npro} \rangle \\ \text{COMPS} \langle \text{NP}_{npro[instr]} \rangle \end{array} \right] \\ \text{CONTENT} \mid \text{INDEX} \mid \text{NUM } \textit{plu} \end{array} \right]$$

The *s*-coordinate structure will look like the following:



(41)

In an *s*-coordinate structure, the nominal head *s* subcategorizes for a subject NP_{npro} and a complement $\text{NP}_{npro[instr]}$. Moreover, the head values of the nominal head are token identical to the head specification of its subject as represented in the avm above. It is important to notice that this head selects two NP's whose heads are non-pronominal.

One might argue that such a treatment of *s* is counter-intuitive. However, unless there are facts that argue against this analysis, I see nothing wrong with it. Moreover, such an analysis does not contradict any generalizations made about what cases Russian nouns assign

to their subjects and/or complements. Generally, Russian nouns can take bare instrumental NP complements, e.g. *upravlenie predprijatiem* ('administration [of] company.Instr'), *uvlečenie lingvistikoi* ('passion [for] linguistics.Instr') and so on.⁸ The Russian *s* does not inflect and cannot be possessed. But it exactly the properties of some Russian nouns: *pal'to* or *kofe*, for example, do not inflect in Russian; and they cannot appear in the possessive form either.

Such an analysis has several immediately appealing aspects. First, it insures the right number specification of the mother NP. Second, it predicts that when a possession relation holds between the entities denoted by the comitative coordinate NP, a reflexive pronoun is required. Third, the first NP always varies in case in accord with the grammatical relation it bears, while the second is invariably in instrumental case. Moreover, it predicts that only non-pronominal NP's will participate in *s*-coordination and provides grounds upon which to explain contrasts between comitative coordinates and ordinary coordinates on the one hand, and between comitative coordinates and Plural Pronoun Constructions on the other.

Consider the following example:

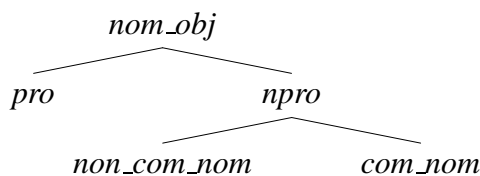
- (42) *Sveta_i so svoei_i sestroi eli pirog.*
 Sveta with self's sister ate pie
 Sveta and her sister were eating the pie.

In this example, since *Sveta* is the subject and *svoei sestroi* is a complement of the same nominal head *s*, *Sveta* is the *s*-binder of *svoju* and *Sveta* *s*-commands the phrase *svoju sestru*. According to clause *iii* of (34), if *Sveta* *s*-commands the whole phrase, it *s*-commands its head *sestroj*. *Svoei* is an adjunct of *sestroj* and therefore belongs to the ARG-ST of *sestroj*. Applying *ii* of (34), one can see that *Sveta* *s*-commands *svoei*. Thus, keeping in mind the binding theory proposed in the previous section and defining the structure for comitative construction as in (41), we can account for the peculiar behavior of comitative coordination.

⁸It is interesting to notice that the cases of noun-into-preposition or preposition-into-noun conversion have been registered in different languages. See Longobardi (2001) for the reanalysis of Latin *casa* '(at) the home (of)' as a preposition in various Romance languages.

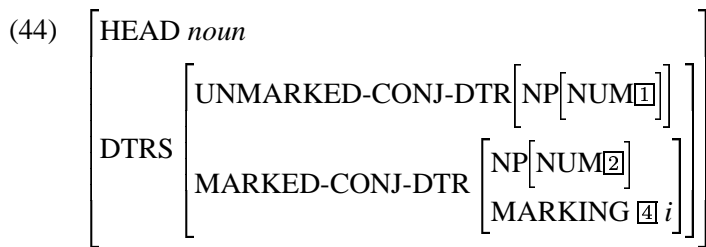
One additional point that we need to make here is that comitative coordinate constructions are not iterative. In order to ensure the non-iterative behavior of these constructions, it is possible to modify a nominal object hierarchy, presented in Pollard Sag (1994), in the following way:

(43)

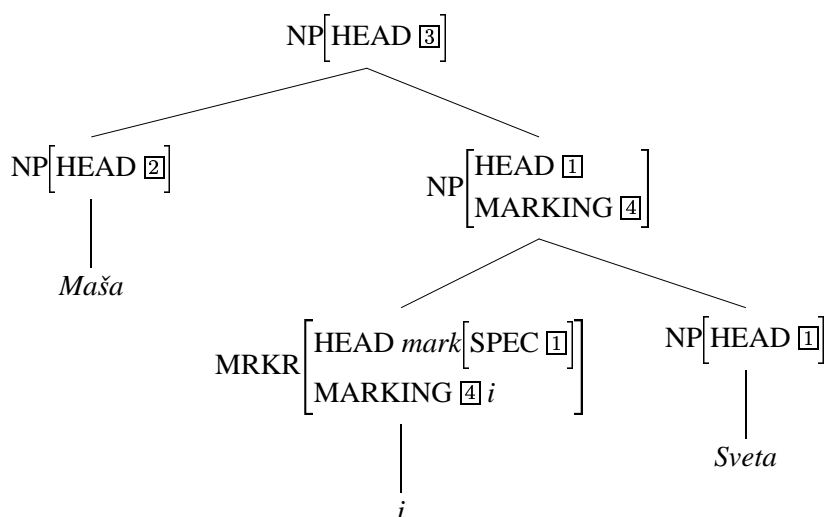


Now, any comitative coordinate NP will be of type *npro* and its syntactic arguments are of type *non-com-nom*, thus blocking the iteration.

The question, then, is how we block the occurrence of reflexive pronouns when a possessive relation holds between the entities denoted by the ordinary coordinate NP. One approach to ordinary coordination would be to accept the central claim of the coordination analysis in Sag *et al.* (1985) and the analogous treatment of Pollard Sag (1994). Although such an approach is highly problematic for coordination of unlikes and neutralization, it will be sufficient for the current purposes. I will treat the conjunction *i* as a marker. Thus, ordinary binary coordination will be a coordinate structure whose daughters are an UNMARKED-CONJ-DTR and a MARKED-CONJ-DTR. The tree and the avm below illustrate the idea:



(45)



Applying this structure together with the Binding Theory we adopted in this paper, we can block the occurrence of the reflexive pronoun in the second conjunct:

- (46) **Sveta_i i svoja_i sestra eli pirog.*
Sveta and self's sister ate pie
Sveta and her sister were eating the pie.

In (46), the coordinate NP *Sveta i svoja sestra* will belong to the SUBJ list of the same head *eli*, i.e. *svoja* is locally s-free here.⁹

6 Plural Pronoun Constructions (PPC's)

This section discusses an additional kind of data, namely Plural Pronoun Constructions (PPC's).

Consider the following example:

- (47) *My s Dašei kupili komputer.*
We with Dasha bought.PL computer
We bought a computer with Dasha/ Dasha and I bought a computer.

⁹It is interesting to notice that the conjunction *ili* (*or*) is not used for nominal coordination and thus, unlike English, the problem with having a non-homogeneous agreement with verbs (either singular or plural, depending on the number specifications of the second conjunct) does not arise at all.

The construction in (47) is known as the Plural Pronoun Construction (PPC).¹⁰ The PPC has been analyzed as an instance of comitative coordination (as in Aissen (1988), Aissen (1989)) or as adjunction Ladusaw (1989). However, as has been observed in Ladusaw (1989) and Vassilieva (2000), PPC's possess syntactic and semantic properties that are in contrast with those exhibited by coordination. In this section, PPC's are compared to other comitative constructions and shown not to constitute a homogenous class with them: PPC's that have a non-inclusive interpretation are adjuncts, whereas PPC's that have an inclusive interpretation belong to neither adjunction nor coordination.

In Russian, the PPC is ambiguous with respect to the number of people who participate in an event, as indicated in the translation of (47). The next two sections summarize the main arguments (see Vassilieva (2000) among others) in favor of distinguishing the two types of PPC's. The two interpretations of PPCs are non-inclusive and inclusive interpretations. The former involves the referents denoted by the plural pronoun and the comitative element together, and the latter the interpretation when the denotation of the instrumental phrase is included in the denotation of the plural pronoun.

6.1 Non-inclusive PPCs (NIPPC's)

A number of tests have been discussed to determine whether a comitative phrase is a conjunct or an adjunct. One of the tests was the ability to bind reflexives. Consider the following sentence:

(48) [non-inclusive]

*My_i s Dašei_j prodali svoi_i/*_j/*_{i+j} komputer.*
 We_i with Dasha_j sold.PL self's_i/*_j/*_{i+j} computer
 We_i sold our_i/*_j/*_{i+j} computer with Dasha_j.

On the non-inclusive interpretation, the antecedent of the possessive reflexive *svoi* is understood as *my* 'we', without the inclusion of Dasha. This fact suggests that the *s*-phrase in (48) must be an adjunct not a conjunct. (Note, however, (48) can have the inclusive reading.)

When a non-inclusive PPC cooccurs with the verbs such as *believe* which trigger only a distributive reading, the intended interpretation is impossible.¹¹

¹⁰Note that in (47), the use *ja* (*I*), instead of *my* (*we*) is impossible.

¹¹See Vassilieva (2000) for additional data

(49) [non-inclusive]

#My s Dašei verim v boga.
We with Dasha believe.PL in God
We believe in God with Dasha.

(This sentence is perfectly sensible, however, on the inclusive interpretation).

Additional evidence that the non-inclusive PPC does not have a distributive reading is the fact that it never cooccurs with reciprocals:

(50) [non-inclusive]

My s Dašei ljubim drug družku
We with Dasha like each other
We like each other with Dasha

(This sentence is fully acceptable on the inclusive interpretation).

Additional evidence comes from wh-extraction. We have seen that comitative adjuncts can undergo wh-extraction, whereas comitative conjuncts cannot. Consider the following:

(51) [non-inclusive]

S kem my kupili komputer?
with whom we bought.PL computer
With whom did we buy the computer?/ NOT: Who is it such that that person and I bought the computer?

Non-inclusive PPCs, then, cannot be analyzed as instances of coordination.

Remember that *with*-conjuncts cannot appear in postverbal positions. However, consider the following:

(52) [non-inclusive]

My kupili s Mašei komputer.
we bought.PL with Masha computer
We bought a computer with Masha.

The examples above show that non-inclusive PPCs do not behave like comitative coordinate constructions; their syntactic behavior resembles comitative adjuncts rather than comitative conjuncts. So, my conclusion is that PPCs are not an instance of coordination, but instead of comitative adjunction on the non-inclusive interpretation.

6.2 Inclusive PPCs (IPPC's)

In this section, I consider the “inclusive” interpretation of PPCs, i.e. when the denotation of the instrumental phrase is included in the denotation of the plural pronoun. However, this is not the only difference.

The elements of the inclusive PPCs cannot be conjoined by *i(and)*, unlike coordinate comitatives, where such a substitution is allowed.

(53) (a) [ordinary coordination]

My [i Maša] kupili komputer
We [and Masha] bought.PL computer

- i. Masha and we bought a computer.*
- ii. *Masha and I bought a computer.*

(b) [inclusive PPC]

My [s Mašei] kupili komputer.
We with Masha bought.PL computer

- i. *Masha and we bought a computer.*
- ii. Masha and I bought a computer.*

Comitative coordinate constructions trigger plural agreement with the verb. The order of conjuncts can be freely changed in both comitative and regular coordination:

(54) (a) *Maša s Dašei(=Daša s Mašei) pokupajut komputer.*

Masha with Dasha(=Dasha and Masha) buy.Pres.3PL computer
Masha and Dasha are buying a computer.

(b) *My s Dašei pokupaem komputer.*

We with Dasha buy.Pres.1PL computer
Dasha and I are buying a computer.

(c) **Dasha s nami pokupaem/pokupajut komputer.*

Dasha with us buy.Pres.1PL/3PL computer
Dasha and we are buying a computer.

As evident from (54b) and (54c), plural agreement is impossible in inclusive PPCs when the order of the elements of the comitative phrase is altered. Moreover, pronouns cannot participate in *s*-coordination in Russian:

(55) (a) **On so mnoi delaem/delajut uroki.*

He with me do.Pres.1PL/3PL homework
He and I are doing the homework assignment.

- (b) ?*On i ja delaem uroki.*
 He and I do.Pres.1PL homework
 He and I are doing the homework assignment.

As has been noticed by Urtz (1994), native speakers tend to avoid *and*-coordination of pronouns (as in (55b)), giving preference to PPCs (cf.(56)) as 'more natural':

- (56) *My s nim delaem uroki.*
 We with him do.Pres.1PL homework
 He and I are doing the homework assignment.

In addition, there is a restriction on the order of elements in IPPCs with respect to the person hierarchy. While English requires the 1st person pronoun to come second in a coordinate structure (*He and I* vs. **I and he*), Russian has no preference. However, in inclusive PPCs, the plural pronoun must be higher in the hierarchy (1 > 2 > 3) than a (non)-plural pronoun in the *with*-phrase. Therefore, the example below cannot have an inclusive reading even when the verb agrees with the plural pronoun in person:

- (57) (a) *My s nei pojom.*
 we with her sing.1PL
 She and I sing.
 (b) **Oni so mnoi pojom/pojut.*
 They with me sing.1PL/3PL
 She/he and I sing.

Thus, the strict selectivity imposed on the constituents and their order is unique to IPPCs and does not apply to other comitative constructions. This supports the hypothesis that the IPPC is not an instance of coordination.

Additional evidence comes from the tests that we used to distinguish comitative conjuncts from adjuncts. With respect to these tests, IPPCs pattern with neither of these constructions. In some aspects, IPPCs resemble adjuncts: they allow the verb to separate its complements.¹²

- (58) *My kupili s Anej komputer.*
 We bought.PL with Anya computer
 Anja and I bought a computer.

¹²Note that (57b) and (59b) are grammatical under the adjunct interpretation.

In other aspects, inclusive PPCs resemble comitative coordinate constructions. They behave similarly with respect to wh-extraction (59) and the ability to antecede reflexives (60), and can appear with reciprocals and verbs that require a distributive reading ((62),(61)).

- (59) (a) *My s Anej učilis.*
 we with Anya study.PL
 Anya and I were studying.
 (b) **S kem my učilis'?*
 With whom we study.PL
 With whom were we studying?

- (60) *My_i s Anej čitaem svoju*_i,*_j,_{i+j} knigu.*
 We with Anya read.1PL self' book.
 Anya and I are reading our book.

- (61) *My s Anej ljubim drug druga*
 We with Anya like.PL each other
 Anya and I like each other

- (62) *My s Anei znaem kitaiskii.*
 We with Anya know.1PL Chinese
 Anya and I know Chinese.

It has been shown that IPPCs share some properties with comitative adjuncts and comitative conjuncts. In addition, they exhibit a number of characteristics not found in other *with*-constructions. We assume that they are syntactically neither instances of adjunction nor of coordination. The next section provides a formal analysis of IPPCs as comitative complementation.

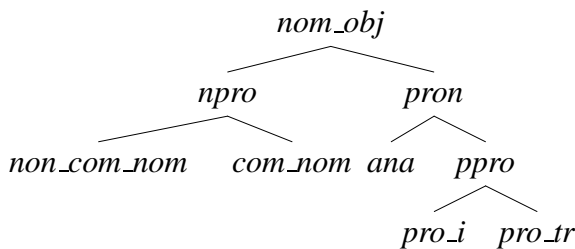
7 Formal Analysis of PPC's

As has been argued above, the *with*-phrase in non-inclusive PPC's is an adjunct. Thus, no special attention is required to these constructions.

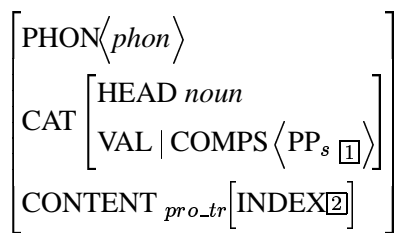
However, we have shown in the previous sections that IPPCs share some properties with comitative adjuncts and comitative conjuncts. Like coordinate comitative constructions, IPPCs trigger plural agreement with the verb, jointly antecede reflexives, prohibit 'wh-extraction', can appear with reciprocals and distributive verbs; however, unlike coordination and like adjunction, the prepositional phrase can occur in postverbal position. The

most intriguing fact is that they exhibit a number of features not found in other *with*-constructions: the order of the constituents with respect to their person specification is unique; an IPPC cannot be substituted with an equivalent coordinate phrase. Since IPPCs pattern neither with coordinate comitatives nor with comitative adjunction, we assume that the plural pronouns that occur in such structures are heads that select *with*-phrases with particular specifications. Such an assumption requires some additional modification of the hierarchy of nominal objects. According to this hierarchy, pronouns can be transitive and intransitive. In Russian, transitive pronouns are plural and select a PP_s complement, and therefore, will be treated as transitive¹³:

(63)

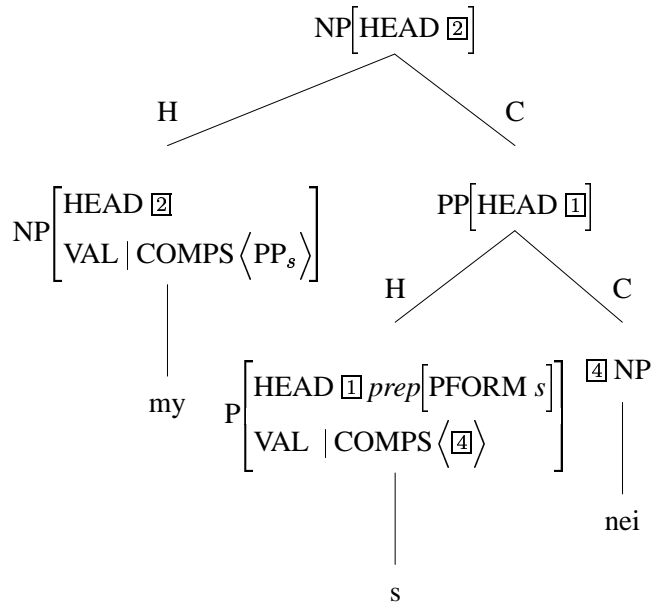


(64)



¹³Notice that transitive pronouns exist in some languages, e.g. Cayuga, an Iroquoian language.

(65)



(64) and (65) above illustrate the idea. The plural pronoun selects a PP_s . However, such an account is not complete. As has been discussed in the previous sections, the denotation of the complement should be included in the denotation of the head (in order to get the inclusive interpretation) and also, we must impose restrictions on the order of elements in IPPCs with respect to the person hierarchy. We can then define the following relation:

(66) *include-in*(SUPERSET, SUBSET) iff SUBSET is a subset of SUPERSET and the cardinality of the SUPERSET denoted by the plural pronoun is one greater than the cardinality of the SUBSET denoted by the object of *s* and the denotation of the SUBSET is included in the denotation of the SUPERSET.

Perhaps the best approach to this phenomenon is to assume that there is a pragmatic constraint requiring that the relation holds between the elements of the IPPC and state another constraint on the person hierarchy. We assume that the person hierarchy is a linear order on person values and we state a disjunction as exemplified in (67): the possible person values are expressed as an object language relation (and not as a pragmatic constraint).

$$(67) \left[\begin{array}{l} \text{PHON} \langle phon \rangle \\ \text{CAT} \left[\begin{array}{l} \text{HEAD } noun \\ \text{VAL} \mid \text{COMPS} \langle PP_s \ 1 \rangle \end{array} \right] \\ \text{CONTENT } pro_tr \left[\text{INDEX} 2 \right] \\ \text{CONX} \mid \text{BG} \left\{ \begin{array}{l} include-in \\ \text{SUPERSET } 2 \\ \text{SUBSET } 1 \end{array} \right\} \end{array} \right]$$

$\wedge (2 \text{ PERS } 1\text{st} \wedge 1 \text{ PERS} (2\text{nd} \vee 3\text{rd})) \vee (2 \text{ PERS } 2\text{nd} \wedge 1 \text{ PERS } 3\text{rd}) \vee (2 \text{ PERS } 3\text{rd} \wedge 1 \text{ PERS } 3\text{rd})$

Having defined such a lexical entry for the transitive plural pronoun, we can easily account for the inclusive plural pronoun phenomenon. Using the *include-in* relation makes the correct prediction that the first conjunct in the inclusive PPC has to be plural.

8 Problems and Issues for Further Research

This paper began by considering two types of comitatives: adjuncts and coordinate constructions. The evidence to distinguish the two types of structure comes from agreement patterns, reflexivization, discontinuity effects and semantic interpretation. The next concern of the paper was to differentiate between the two types of nominal coordination in Russian: *s*- and ordinary coordination. The argument in favor of this distinction comes from the difference in the behavior of these constructions with respect to possessive pronouns when the possession relation holds between the entities denoted by the ordinary/comitative coordinate phrase. Two distinct structures were proposed: 1) the nominal head *s* selects two NP complements in the case of comitative coordination; and 2) *i* (*and*) is a marker in ordinary coordinates. We followed the standard HPSG analysis and used a coordinate structure whose daughters are UNMARKED-CONJ-DTR and MARKED-CONJ-DTR. The paper discussed the Plural Pronoun Constructions as well. It has been shown that PPCs cannot be accounted for by a single syntactic structure. Some of them are regular comitative adjuncts (NIPPCs), whereas the others (IPPCs) can be ascribed to neither of the two syntactic types: in some cases their syntactic behavior resembles adjunction (they allow verbs to separate their complements); in some other cases they resemble comitative coordination (wh-extraction, ability to antecede reflexives, plural agreement and cooccurrence with reciprocals). However, unlike comitative coordination, the elements of IPPCs cannot be conjoined by *i*; plural agreement is impossible when the order of the elements of IPPC's is altered. In addition, there are restrictions on the order of elements in IPPCs with respect to the person hierarchy; the denotation of the head pronoun should include the denotation of the complement it selects.

However, there are several issues with the analysis proposed in this paper. Although the majority of native speakers of Russian do not accept the construction in (68b), some speakers do (even though they usually prefer (a) over (b)):

- (68) (a) *Tanja s Vanej i Petej*
Tanya with Vanya.Instr and Petya.Instr
Tanya with Vanya and Petya
- (b) *Tanja s Vanej i s Petej*
Tanya with Vanya.Instr and with Petya.Instr
Tanya with Vanya and with Petya

The sentence in (68b) is not a counterexample to the account proposed in this paper. The example in (68b) can be analyzed as an instance of left node raising, comparable to English right node raising, where both [s Vanej] and [s Petej] share their respective remaining valent, analogously to the English *Mary's photograph of John and picture of Susan*¹⁴.

In addition, we provided only a tentative binding theory for Russian. The further investigation will have to account for a wider range of data, such as reciprocal pronouns, emphatic reflexives (e.g. *sam sebja* 'self own') etc.

A linearization account in a relatively free word order language, such as Russian of the fact that *s-* (as well as ordinary) coordinate NP's do not allow any discontinuities and that IPPC's do not extract but allow the verb to separate its complements should be provided.

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¹⁴Thanks to Bob Levine for pointing this to me

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