Semantics in syntax:
Linear ordering of genitive adnominal dependents
cosubordinated to a noun in Russian

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Abstract: The paper proposes formal rules for linear ordering of adnominal genitive dependents cosubordinated to the same noun in Russian. In a standard case, the cosubordinated NGEN-i’s are mutually positioned as a function of the surface-syntactic relation that dominates each NGEN-i (there are six such surface-syntactic relations). But fairly often the positioning of an NGEN-i is determined by its meaning; thus, if in an N→NGEN-i construction an NGEN expresses the type of N’s referent, this NGEN precedes all the other NGEN-i’s. The ordering of cosubordinated genitives (which is mostly syntactic) is compared with the ordering of cosubordinated adjectives, whose position is determined by a hierarchy of their semantic classes (i.e., semantically).

Keywords: adnominal genitive, dependencies, genitive, Meaning-Text theory, noun phrase, Russian, syntax, word order

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To Anna Wierzbicka, a closest friend for 55 years

Przyjaźń jest rzeczą diabelnie trudną ‘Friendship is a devilishly difficult thing’ [Wierzbicka 1971: 83].
Yes, Anna, generally speaking, this is so; but with you friendship is the easiest thing!

1. The problem stated

This paper constitutes a natural continuation of [Mel’čuk 2018], where six surface-syntactic relations necessary for the description of N→NGEN phrases in Russian were proposed. Here we will consider the linear ordering of genitive nouns N_{GEN,1}, N_{GEN,2}, N_{GEN,3}, … cosubordinated to the same noun N in Russian. (In fact what is being ordered a re the whole phrases headed by these N_{GENs}.)

Example (1) shows that this order is not free:

(1) a. glagoly_{N} napravlennogo dviženija_{NGEN} soveršennogo vida_{NGEN}
    russkogo jazyka_{NGEN}

b. *glagoly_{N} soveršennogo vida_{NGEN} russkogo jazyka_{NGEN} napravlennogo dviženija_{NGEN}

The subsequent discussion is framed in terms of the Meaning-Text approach: it is strictly synthetic (from meaning to text) and uses a dependency representation of the syntactic structures of sentences and phrases. The following three points must be taken into account in order to avoid misunderstandings.

— Our examples illustrate the surface implementation of the given surface-syntactic relations [SSyntRel] (i.e., “with these SSyntRel the linear arrangement of the given cosubordinated N_{GENs} is so and so”); if the resulting expression is ambiguous — in that it can express something else as well, this should not be paid attention to. The only thing that is important is the correct expression of the starting meaning.

— Our examples are based on our own linguistic intuition, which on several occasions can diverge from other speakers’ judgments. However, our main thrust is not establishing facts of Contemporary Russian, but formulating implications of the form “If the given linguistic expression \( X \) is correct / incorrect, then the order of N_{GENs} is so and so.”

— Once again, there can be disagreement between speakers concerning our evaluation of a given phrase: good, bad (*), hardly acceptable (?), or questionable (?). But what really matters is the difference between two arrangements of N_{GENs}: one is worse than the other, and this is sufficient for our statements.

NB: The relevant notions and formalisms cannot be explained here, and the reader is invited to consult [Mel’čuk 2012–2015]. All glosses in the examples are literal; two English words that correspond to one Russian form are united by a dot: Rus. bol’ ‘of.pain’.

Schematically, we are interested in correspondence (2):
In prose, we propose some surface-syntactic [SSynt]-rules that establish the correspondence between an SSynt-subtree and the deep-morphological [DMorph]-string implementing it. The SSynt-subtree under consideration has three properties:

i) It is headed by a noun N on which several genitive nouns N_{GEN-1}, N_{GEN-2}, N_{GEN-3}, ... syntactically depend (each with its own dependents, if any).

ii) The SSynt-relations \( r \) that subordinate these N_{GEN}s to N impose the genitive case on them (in the DMorph-string). These SSynt-relations are six in number [Mel’čuk 2018]:

- **N–subjective-adnominal** → N_{GEN-subj}:
  - priede–subj-adnom → otca ‘coming of.father’,
  - stakan–subj-adnom → vody ‘glass of.water’

- **N–objective-adnominal** → N_{GEN-obj}:
  - osvoboždenie–obj-adnom → otca ‘liberation of.father’
  - portret–obj-adnom → reběnka ‘portrait of.child’

- **N–qualificative-adnominal** → N_{GEN-qual}:
  - balka–[nedostatočný]–qual-adnom → dliny ‘beam [of.insufficient] length’

- **N–attributive-adnominal** → N_{GEN-attr}:
  - krik–attr-adnom → boli ‘scream of.pain’
  - živopis–attr-adnom → Vozroždenija ‘painting of.Renaissance’

- **N–genitive-possessive** → N_{GEN-poss}:
  - stadion–gen-poss → universiteta ‘stadium of.University’

- **N–metaphorical** → N_{GEN-metaph}:
  - lenta–metaph → dorogi ‘ribbon of.road’

iii) These SSynt-relations require the postposition of their dependent N_{GEN}s with respect to the modified N, with one exception: the **qual-adnom** SSyntRel allows the anteposition of its N_{GEN-qual}, if this N_{GEN-qual} 1) corresponds to Sem-actant 1 of N, 2) has itself no depending
noun phrase and 3) is lexically marked as allowing for anteposition; for instance, *pojas golubogo cveta* ‘belt of light blue color’ ~ *golubogo cveta pojas*. The anteposition of $N_{\text{GEN-qual}}$ is left out of consideration in this paper.

The basic order of postposed cosubordinated $N_{\text{GENs}}$ is determined syntactically — by the above SSyntRels: for each pair of these SSyntRels we indicate the mutual order of the corresponding $N_{\text{GENs}}$. As a result, we obtain a general six-position template (Figure 1 in Section 2) that specifies the correct position for each type of $N_{\text{GEN}}$.

Such a template is possible because of the following essential fact: generally speaking, a dependent $N_{\text{GEN}}$ can occupy different linear positions with respect to its governing $N$ as a function of the SSyntRel $\mathbf{r}_i$ in the $N_1 \rightarrow N_{\text{GEN}}$ phrase. Thus:

(3) a. For the meaning ‘statue representing Athena and carved by Phidias’:

$$\text{statuja } A_{\text{GEN}} Fidija_{\text{GEN}} \text{ 'statue of.Athena of.Phidias' (\text{*statuja Fidija A_{\text{GEN}});}}$$

but for the meaning ‘statue representing Phidias and carved by Athena’:

$$\text{statuja } Fidija_{\text{GEN}} A_{\text{GEN}} \text{ 'statue of.Phidias of.Athena' (\text{*statuja A_{\text{GEN}} Fidija).}}$$

b. For the meaning ‘poet’s soul of this philosopher’:

$$\text{duša poèta}_{\text{GEN}} etogo filosofa}_{\text{GEN}} \text{ 'soul of.poet of.this philosopher' (\text{*duša etogo filosofa poèta);}}$$

but for the meaning ‘philosopher’s soul of this poet’:

$$\text{duša filosofa}_{\text{GEN}} etogo poèta}_{\text{GEN}} \text{ 'soul of.philosopher of.this poet'}.\text{}}$$

There are 15 logically possible pairs of $N_{\text{GENs}}$ (the number of combinations from 6 by 2 without repetitions): $N_{\text{GEN-subj}} - N_{\text{GEN-obj}}, N_{\text{GEN-subj}} - N_{\text{GEN-qual}},$ etc. Three of these pairs are semantically impossible: $N_{\text{GEN-metaph}}$ does not combine with $N_{\text{GEN-obj}}, N_{\text{GEN-subj}}$ and $N_{\text{GEN-poss}}$ (it is difficult to imagine a metaphorically used noun that has a subject / object actant or a possessor). As a result, we have 12 SSyntRel pairs. On the other hand, the qual-adnom and attr-adnom SSyntRels are repeatable, so that we end up with 14 SSyntRel pairs to consider.

However, the use of SSyntRels alone for the linear ordering of cosubordinated $N_{\text{GENs}}$ is not sufficient: for some SSyntRel pairs, the order of $N_{\text{GENs}}$ depends also on the meaning of $N$ and/or on that of $N_{\text{GEN}}$. Thus, in the phrase $\text{krik } bolija_{\text{GEN-attr}} Peti_{\text{GEN-subj}} \text{ 'scream of.pain of.Pete'}$ the $N_{\text{GEN-attr}}$ can only precede the $N_{\text{GEN-subj}} (\text{*krik Peti bolija})$, but in $\text{proizvedenija vos'midesjatyx godov}_{\text{GEN-attr}} L'va Tolstogo}_{\text{GEN-subj}} \text{ 'works of.1880s of.Leo Tolstoy' \text{~ proizvedenija L'va Tolstogo vos'midesjatyx godov} the } N_{\text{GEN-attr}} \text{ can both precede or follow the } N_{\text{GEN-subj} ~ if the } N_{\text{GEN-atrr}} \text{ denotes the temporal coordinate of the fact denoted by the governing } N$. As a consequence, our rules have to account for semantic factors as well.

Before we proceed to the formulation of $N_{\text{GEN}}$-ordering rules, the following principle has to be stated:

- Each of our rules is valid only everything else being equal.

This means that the two cosubordinated $N_{\text{GENs}}$ being compared and ordered are of the same “weight” (the corresponding phrases contain the same number of syllables and are of the same syntactic complexity) and there are no discourse factors intervening.

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¹ Here are the examples illustrating the three cases of impossibility of $N_{\text{GEN-qual}}$’s anteposition:

1) *moej mečty devuška* ‘of.my dream girl’, where ‘girl’ is Sem-actant 2 of ‘dream’;

2) *cveta morskoj volny pojas* ‘of.color of.sea wave belt’;

3) *prošedšego vremeni glagol* ‘of.past tense verb’.

In cases 1) and 2) the anteposition of an $N_{\text{GEN-qual}}$ can be possible under additional communicative and/or syntactic conditions.
The expression “discourse factors” should be understood very broadly. It covers communicative and referential phenomena that can lead to violations of the word order observed in discourse-neutral contexts. In the following discussion, we ignore:

- The impact of the Communicative Structure. For instance, contrastive emphasis on one of cosubordinated $N_{GENS}$ can change their habitual linear order. Thus, the neutral order is $N + N_{GEN=\text{MATERIAL}} + N_{GEN=\text{COLOR}}$:² *stol krasnogo dereva bol'sogo razmera* ‘table of mahogany of big size’ ~ *stol bol'sogo razmera krasnogo dereva*; however, under emphasis, the dispreferred order is quite normal:

\[(4) \quad \text{Ja išču stol bol'sogo razmera KRASTNOGO DEREVA, a ne iz karel'skoj berëzy.} \]

‘I am looking for a table of big size OF MAHOGANY, and not of Karelian birch’.

- The impact of the Referential Structure.

  — A modifier either specifies a subclass of possible referents of the modified lexeme L (a restrictive modifier), or characterizes L’s referents without specifying a subclass of these (a qualifying modifier). In what follows we consider only restrictive modifiers. Thus, we exclude from our consideration the situation where one of the cosubordinated $N_{GENS}$ is used as a qualifying modifier (in dashes):

\[(5) \quad \text{Stoly bol'sogo razmera — krasnogo dereva — tables of big size of mahogany u nas imejutsja v dostatočnom količestve.} \]

‘We have big tables — of mahogany — in a sufficient quantity’.

  — A restrictive modifier specifies a subclass of possible referents of the modified lexeme L; cosubordinated modifiers specify subsequent subclasses of L’s referent. In a discourse-neutral context, the order of isolating these subclasses is irrelevant for the Speaker; different characteristics of the L’s referents are, so to speak, informationally equal for him. In this case, the linear order of cosubordinated modifiers is determined by their own properties — syntactic and/or semantic. This is the situation studied in the present paper. Therefore, we exclude the situation where the Speaker first selects a particular subclass of L’s referents and then introduces a subclass of this subclass. For instance, the dispreferred order *stol bol'sogo razmera krasnogo dereva* is quite OK if one speaks about tables of big size and specifies a subclass of these in terms of their material; sentence (6) is absolutely correct because of the referential and communicative effects:

\[(6) \quad \text{Stoly bol'sogo razmera krasnogo dereva u nas imejutsja tables of big size of mahogany v bol'šem količestve, čem takie že stoly iz karel'skoj berëzy.} \]

‘We have big tables of mahogany in a larger quantity than such tables of Karelian birch’.

2. Rules for ordering cosubordinated $N_{GENS}$

The linear order of cosubordinated $N_{GENS}$ postposed with respect to their common governor N is described by the rules of three types:

1) Rule for the standard linear order of different-type $N_{GENS}$, represented by their maximal template (Figure 1 below).

² Here and below, an expression in small caps in « » quotes stands for a semantic label, whose formal status is left vague.
By “standard linear order” we mean the order conditioned exclusively by surface-syntactic relations that subordinate $N_{GEN}$s to their governor $N$, without recourse to semantic properties of the nouns involved. These properties are taken into account by Rules 2.

2) Rules specifying semantic factors that affect standard linear order of different-type $N_{GEN}$s.

Rules 2 are, in a sense, stronger than Rule 1: they impose deviations from the standard order of $N_{GEN}$ determined by Rule 1.

3) Rule for the linear order of same-type $N_{GEN}$s, represented by their semantically-conditioned hierarchy (Figure 2).

Rules 1–3 are part of word order, or linearization, rules for Russian [Mel’čuk 2011]; more precisely, they are a subset of the quasi-local word order rules.

1) Standard linear order of different-type $N_{GEN}$s

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
</table>

Figure 1. Linear order of different-type postposed cosubordinated $N_{GEN}$ in Russian

2) Semantic factors of the linear ordering of different-type cosubordinated $N_{GEN}$s

Semantic properties of $N_{GEN}$

1. If $N_{GEN}$ denotes a kind of $N$ (rather than characterizing an individual $N$), then this $N_{GEN}$ precedes all other cosubordinated $N_{GEN}$ except for $N_{GEN}$ denoting kind.

2. If $N_{GEN}$ denotes the material of which $N$ is made, then this $N_{GEN}$ precedes all other cosubordinated $N_{GEN}$ except for $N_{GEN}$ denoting kind.

3. If $N_{GEN}$-attr denotes the time of $N$, then $N_{GEN}$-attr precedes or follows another $N_{GEN}$-attr, $N_{GEN}$-subj, $N_{GEN}$-obj and $N_{GEN}$-poss.

4. If $N_{GEN}$-attr denotes the causer of $N$, then this $N_{GEN}$-attr precedes or follows $N_{GEN}$-poss.

Semantic properties of $N$

5. If $N$ denotes the quantity of $N_{GEN}$ or a set of $N_{GEN}$, then this $N_{GEN}$ precedes all other cosubordinated $N_{GEN}$.

3) Linear order of the same-type cosubordinated $N_{GEN}$s

Several same-type cosubordinated $N_{GEN}$s are possible only for two repeatable SSyntRels: qual-adnom and attr-adnom. The mutual order of same-type $N_{GEN}$s is determined by the following semantic hierarchy:

\[
N < \langle \text{SIZE} \rangle < \langle \text{COLOR} \rangle < \langle \text{MATERIAL} \rangle < \langle \text{SHAPE} \rangle < \langle \text{WEIGHT} \rangle < \langle \text{KERNEL} \rangle < \langle \text{ORIGIN} \rangle < \langle \text{characteristics} \rangle < \langle \text{(subjective) EVALUATION} \rangle \]

NB: An external characteristic of an entity is its position in space and time, its properties related to its functioning, its social role, etc. (An internal characteristic is an inherent property of an entity, inseparable from it: e.g., kind, material, color, form, texture, size, weight, etc.)

Figure 2. Semantic hierarchy of same-type $N_{GEN}$s

3 Fairly often, N’s kind is expressed by an actant of N: zavod boepripasov ‘ammunition plant’, škola tancev ‘dancing school’, detskaja bol’nica ‘children’s hospital’; see Section 3, (9b).
This hierarchy, based on [Vendler 1968: 128],4 is underlain by the Inherence Principle:

The modifiers of an N cosubordinated to N by the same SSyntRel are linearly arranged according to the degree of their semantic “inherence” with respect to N: a more inherent characterization stands closer to N.

We cannot formally define “degree of semantic inherence” of modifiers, but we think that the proposed hierarchy reflects this property well enough. Thus, the “objective” characteristics are more inherent than the “subjective” ones, the internal properties are more inherent than the external ones, and «KIND» is the most inherent characteristic.

Let it be emphasized that, although this hierarchy is introduced for the same-type \( N_{GEN} \), it is also partially valid for the different-type \( N_{GEN} \). More precisely, Rules 2 are based on the same Inherence Principle: thus, the \( N_{GEN} \) expressing «KIND» precedes all other \( N_{GEN} \), etc.

### 3. Illustrations of \( N_{GEN} \) ordering rules

We will illustrate the above rules, proceeding as follows.

- The SSyntRel are considered pairwise, one after another, from left to right (in conformity with the template in Figure 1).
- Each pair of SSyntRel is illustrated by phrases featuring the standard order of the two \( N_{GEN} \) nouns.
- Each deviation from this standard order is explicitly indicated.
- Each of the two repeatable SSyntRel — that is, qual-adnom and attr-adnom — is also considered in combination with itself.
- More than three cosubordinated \( N_{GEN} \) are practically unacceptable.

The rules in question specify the best ordering possible. Deviations from it can be characterized by different degrees of ill-formedness, of which we distinguish three: ungrammatical (*), hardly acceptable (??), and jarring (?). We are aware that our judgments of grammaticality can be challenged; however, for our purposes here it is sufficient if a difference in the degree of correctness is perceived — as we have indicated at the beginning of Section 1.

\[ \text{qual-adnom} \rightarrow N \]

This SSyntRel is repeatable.

With \( \text{qual-adnom} \rightarrow N \):

\[(7) \]

a. tort domašnego prigotovlenija gigantskogo razmera and
cake of domestic preparation «ORIGIN» of giant «SIZE»
tort gigantskogo razmera domašnego prigotovlenija

b. kovër pëstryx cvetov nebol'sogo razmera neobyčajnoj

carpet of different colors «COLOR» of small «SIZE» of extraordinary «EVALUATION»

\(^7\)kovër nebol'sogo razmera pëstryx cvetov neobyčajnoj krasoty vs.
*kovër neobyčajnoj krasoty pëstryx cvetov nebol'sogo razmera

The order of \( N_{GEN}\text{-qual} \) in (7) corresponds to the semantic hierarchy in Figure 2.

\[ 4 \] Vendler’s study [1968], based, as he indicates, on [Ziff 1960], considers English anteposed cosubordinated adjectives with respect to their mutual linear ordering.
With \(-\text{metaph} \rightarrow \text{N}\); \(\text{N}_{\text{GEN-qual}}\) precedes \(\text{N}_{\text{GEN-metaph}}\):

(8) \(\text{minarety strel'čatoj formy}_{\text{GEN-qual}}\) \(\text{zavodskix trub}_{\text{GEN-metaph}}\) vs.

\(\ast \text{minarety zavodskix trub}_{\text{GEN-metaph}}\) \(\text{strel'čatoj formy}_{\text{GEN-qual}}\)

With \(-\text{obj-adnom} \rightarrow \text{N}\); \(\text{N}_{\text{GEN-qual}}\) precedes \(\text{N}_{\text{GEN-obj}}\):

(9) a. \(\text{portret nebol'šogo razmera}_{\text{GEN-qual}}\) \(\text{molodoj zenščiny}_{\text{GEN-obj}}\) vs.

\(\ast \text{portret molodoj zenščiny}_{\text{GEN-obj}}\) \(\text{nebol'šogo razmera}_{\text{GEN-qual}}\)

b. \(\text{sistema raspredelenija}_{\text{GEN-obj}}\) \(\text{toka vysokoj nadëžnosti}_{\text{GEN-qual}}\) vs.

\(\ast \text{sistema vysokoj nadëžnosti raspredelenija toka}\)

The \(\text{N}_{\text{GEN}}\) \(\text{raspredelenija [toka]}\) is an \(\text{N}_{\text{GEN-obj}}\) (being DSynt-actant II of the noun \(\text{SISTEMA}\)); according to the standard template (Figure 1), it should follow an \(\text{N}_{\text{GEN-qual}}\) — as in (9a). However, a semantic factor perturbs the standard order: this \(\text{N}_{\text{GEN-obj}}\) identifies a kind of system (≈ a particular device), not an individual system, so that in conformity with Rule 2.1 it must precede the \(\text{N}_{\text{GEN-qual}}\).

With \(-\text{attr-adnom} \rightarrow \text{N}\); \(\text{N}_{\text{GEN-qual}}\) precedes \(\text{N}_{\text{GEN-attr}}\):

(10) a. \(\text{voda kristal'noj čistoty}_{\text{GEN-qual}}\) \(\text{ètogo ozera}_{\text{GEN-attr}}\) vs.

\(\ast \text{voda ètogo ozera}_{\text{GEN-attr}}\) \(\text{kristal'noj čistoty}_{\text{GEN-qual}}\)

b. \(\text{stol krasnogo dereva}_{\text{GEN-attr}}\) \(\text{ogromnyx razmerov}_{\text{GEN-qual}}\) vs.

\(\ast \text{stol ogromnyx razmerov}_{\text{GEN-qual}}\) \(\text{krasnogo dereva}_{\text{GEN-attr}}\)

In (10b), we see again the impact of a semantic factor: according to Rule 2.2, the \(\text{N}_{\text{GEN}}\) denoting material precedes all other \(\text{N}_{\text{GEN}}\)s (except the one denoting kind).

With \(-\text{subj-adnom} \rightarrow \text{N}\); \(\text{N}_{\text{GEN-qual}}\) precedes \(\text{N}_{\text{GEN-subj}}\):

(11) a. \(\text{kartina nebol'šogo razmera}_{\text{GEN-qual}}\) \(\text{neizvestnogo xudožnika}_{\text{GEN-subj}}\) vs.

\(\ast \text{kartina neizvestnogo xudožnika}_{\text{GEN-subj}}\) \(\text{nebol'šogo razmera}_{\text{GEN-qual}}\)

b. \(\text{kuća morskogo peska}_{\text{GEN-subj}}\) \(\text{bol'sogo razmera}_{\text{GEN-qual}}\) vs.

\(\ast \text{kuća bol'sogo razmera}_{\text{GEN-qual}}\) \(\text{morskogo peska}_{\text{GEN-subj}}\)

c. \(\text{rjumka krasnogo vina}_{\text{GEN-subj}}\) \(\text{pričudlivoj formy}_{\text{GEN-qual}}\) vs.

\(\ast \text{rjumka pričudlivoj formy krasnogo vina}\)

The deviation from the standard order in (11b–c) is imposed by Rule 2.5.

\(^{5}\) This is an interesting case, since it represents a “superposition” of two lexemes: \(\text{RJUMKA}\) \(1a\) ‘tall glass with a thin stem…’ (\(\text{rjumka strannoj formy ‘wine glass of bizarre shape’}\)) and \(\text{RJUMKA}\) \(1b\) ‘quantity of liquid…’ (\(\text{rjumka vina ‘glass of wine’}\)): \(\text{Xozjajka postavila peredo mnoj rjumku krasnogo vina pričudlivoj formy ‘The hostess put in front of me a glass of red wine of a bizarre shape’}\). However, this superposition is not possible in all contexts: \(\ast \text{On vypil rjumku krasnogo vina pričudlivoj formy ‘He drank a glass of wine of bizarre shape’}\).
With \texttt{gen-poss}→N; N\textsubscript{GEN-qual} precedes N\textsubscript{GEN-poss}:

(12) \textit{kartiny nebol’sogo razmera\textsubscript{GEN-qual} \textit{étogo kollekcionera\textsubscript{GEN-poss} vs.} paintings of small size of this collector
\*\textit{kartiny \textit{étogo kollekcionera\textsubscript{GEN-poss} nebol’sogo razmera\textsubscript{GEN-qual}}}

\textbf{\textit{metaph}→N}

This SSyntRel is non-repeatable and combines only with an N\textsubscript{GEN-qual} (see above) and with an N\textsubscript{GEN-attr}:

(13) \textit{minarety zavodskix trub\textsubscript{GEN-metaph} Leonida Solov’eva\textsubscript{GEN-attr} vs.} minarets of mill chimneys of Leonid Solovyov
\*\textit{minarety Leonida Solov’eva\textsubscript{GEN-attr} zavodskix trub\textsubscript{GEN-metaph}}

\textbf{\textit{obj-adnom}→N}

This SSyntRel is non-repeatable.

With \texttt{attr-adnom}→N; N\textsubscript{GEN-obj} precedes N\textsubscript{GEN-attr}:

(14) a. \textit{zavody boeprispasov\textsubscript{GEN-obj} Urala\textsubscript{GEN-attr} vs.} plants of ammunition of the Urals
\*\textit{zavody Urala\textsubscript{GEN-attr} boeprispasov\textsubscript{GEN-obj}}

b. \textit{issledovanija dvux poslednix let\textsubscript{GEN-attr} processov\textsubscript{GEN-obj} aromatizacii and studies of two last years of processes of aromatization
issledovanija processov\textsubscript{GEN-obj} aromatizacii dvux poslednix let\textsubscript{GEN-attr}}

The variation of the placement of the N\textsubscript{GEN-attr} denoting time is allowed by Rule 2.3.

With \texttt{subj-adnom}→N; N\textsubscript{GEN-obj} precedes N\textsubscript{GEN-subj}:

(15) a. \textit{portret devočki\textsubscript{GEN-obj} Serova\textsubscript{GEN-subj} vs.} portrait of girl of Serov
\*\textit{portret Serova\textsubscript{GEN-subj} devočki\textsubscript{GEN-obj}}

b. \textit{talant ljubvi\textsubscript{GEN-obj} poèta\textsubscript{GEN-subj} vs.} talent of love of poet
\*\textit{talant poèta\textsubscript{GEN-subj} ljubvi\textsubscript{GEN-obj}}

\textbf{NB:} The violation of the standard order in (15b) is worse than that in (15a) because of Rule 2.1: N\textsubscript{GEN-obj} in (15b) denotes a kind of talent. In other words, if (15a) violates only a syntactic rule, (15b) violates both a syntactic rule and a semantic constraint.

With \texttt{gen-poss}→N; N\textsubscript{GEN-obj} precedes N\textsubscript{GEN-poss}:

(16) \textit{portret devočki\textsubscript{GEN-obj} s ser’goj amsterdamskogo muzeja\textsubscript{GEN-poss} vs.} portrait of girl with earring of Amsterdam museum
\*\textit{portret amsterdamskogo muzeja\textsubscript{GEN-poss} devočki\textsubscript{GEN-obj} s ser’goj}

\textbf{\textit{attr-adnom}→N}

This SSyntRel is repeatable.

With \texttt{attr-adnom}→N:

(17) \textit{pisateli Vostočnoj Evropy\textsubscript{GEN-attr} devjatnadcatogo veka\textsubscript{GEN-attr} and writers of Eastern Europe of 19\textsuperscript{th} century
pisateli\textsubscript{GEN-attr} devjatnadcatogo veka\textsubscript{GEN-attr} Vostočnoj Evropy\textsubscript{GEN-attr}}

The freedom of the placement of the N\textsubscript{GEN-attr} denoting time is ensured by Rule 2.3.
klinok damasskoj stali izvestnogo Abū-Vaxba and
* klinok izvestnogo Abū-Vaxba damasskoj stali izvestnogo Abu-Vaxba

The impossibility of the last phrase is also determined by semantic hierarchy: the NGEN-attrib denoting «MATERIAL» should precede other NGENs (except «KIND»).

With –subj-adnom→N; N_GEN-attrib precedes N_GEN-subj:

(19) a. krik užasa rebënka vs. *krik rebënka užasa
scream of.horror of.child

b. grudʹ myslitelja moego druga vs. *grudʹ moego druga myslitelja [ungrammatical in the intended meaning]
chest of.thinker of.my friend

c. bjust karrarskogo mramora velikogo Mikelandželo vs. *bjust velikogo Mikelandželo karrarskogo mramora
bust of.Carrara marble of.great Michelangelo

d. rasskazy vosʹmidesjatyx godov Antona Pavlovicha Čexova and short.stories of.1880s years of.Anton Pavlovich Chekhov
rasskazy Antona Pavlovicha Čexova vosʹmidesjatyx godov

The freedom of placement of the N_GEN-attrib denoting time corresponds to Rule 2.3.

With –gen-poss→N; N_GEN-attrib precedes N_GEN-poss:

(20) a. kulinarne knigi srednevekovoj Italii našej biblioteki vs. *kulinarne knigi našej biblioteki srednevekovoj Italii
cook books of.medieval Italy of.our library

b. knigi vosemnadcatogo veka veka knigi našej biblioteki and books of.18th century of.our library

knigi našej biblioteki vozmnenadcatogo veka knigi našej biblioteki

knigi našej biblioteki vozmnenadcatogo veka

knigi izdatelʹstva Muton našej biblioteki and books of.publisher Muton of.our library
knigi izdatelʹstva Muton našej biblioteki

The freedom of placement of the N_GEN-attrib denoting time (20b) or the causer (20c) corresponds, respectively, to Rules 2.3 and 2.4.
To demonstrate how the rules proposed can be applied, let us return to example (1), repeated here as (22):

(22) glagoly of.directed    dviženijaN\textsubscript{GEN-attr} soveršennogo of.perfective  vida\textsubscript{N\textsubscript{GEN-qual}}

russkogo of.Russian    jazyka\textsubscript{N\textsubscript{GEN-subj}}

verbs  of.directed    movement of.perfective    aspect

• First, the mutual arrangement of cosubordinated N\textsubscript{GEN}s is specified by the standard template (Figure 1) for different-type N\textsubscript{GEN}s: N\textsubscript{GEN-qual} precedes N\textsubscript{GEN-subj}. The phrase russkogo jazyka ‘of. Russian language’ is an N\textsubscript{GEN-subj} that expresses DSyntA I of glagoly ‘verbs’, which are elements of the set ‘Russian language’; according to the N\textsubscript{GEN} order template, it must follow the phrase soveršennogo vida ‘of.perfective aspect’ (an N\textsubscript{GEN-qual}).

• Second, the mutual arrangement of N\textsubscript{GEN-attr} and N\textsubscript{GEN-qual} is specified by Rule 2.1: in the standard case (= according to the template), N\textsubscript{GEN-qual} precedes; but if N\textsubscript{GEN-attr} denotes the kind of N, then N\textsubscript{GEN-qual} follows. And in (22), the phrase napravlennogo dviženija denotes a particular kind of verbs.

4. Ordering of cosubordinated N\textsubscript{GEN}s vs. ordering of cosubordinated ADJs

It is interesting to compare the ordering of Russian postposed cosubordinated N\textsubscript{GEN}s with the ordering of Russian anteposed cosubordinated adjectives. As is to be expected, N\textsubscript{GEN}s and adjectives, both being noun modifiers and on multiple occasions synonymous, show significant parallelism in their ordering. We will first present the rules for the ordering of cosubordinated adjectives (see Section 4.1) and then compare them with the corresponding rules for N\textsubscript{GEN}s (see Section 4.2).

4.1. Ordering of cosubordinated ADJs

The papers [Iordanskaja 2000; 2003] propose a hierarchical semantic classification of Russian adjectives that determines their mutual linear ordering — more precisely, their relative closeness to the modified noun. Figure 3 below presents this classification. The higher in the table an adjective semantic class is (i.e., the higher its rank), the closer its instance must be to the modified noun. The papers [Iordanskaja 2000; 2003] propose a hierarchical semantic classification of Russian adjectives that determines their mutual linear ordering — more precisely, their relative closeness to the modified noun. Figure 3 below presents this classification. The higher in the table an adjective semantic class is (i.e., the higher its rank), the closer its instance must be to the modified noun.

<table>
<thead>
<tr>
<th>Objective Characteristics: Properties</th>
<th>Qualitative (non-measurable) Properties</th>
<th>Permanent Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Internal Properties</td>
</tr>
<tr>
<td>I A 1.</td>
<td></td>
<td>a) Kind (kořejnaja [čaška] ‘coffee [cup]’)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b) Material (farforovaja [čaška] ‘china [cup]’)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c) Color (golubaja [čaška] ‘light.blue [cup]’)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>d) Shape (vytjanutaja [čaška] ‘elongated [cup]’)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>e) Other internal properties (prozačenaja [čaška] ‘transparent [cup]’)</td>
</tr>
<tr>
<td>B 2.</td>
<td></td>
<td>External Properties (deševaja [čaška] ‘cheap [cup]’)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Temporary Properties (čistaja [čaška] ‘clean [cup]’)</td>
</tr>
<tr>
<td>II</td>
<td></td>
<td>Quantitative (measurable) properties (kroxotnaja [čaška] ‘tiny [cup]’)</td>
</tr>
<tr>
<td>Subjective Characteristics: Evaluation</td>
<td></td>
<td>(zamečatel’naja [čaška] ‘remarkable [cup]’)</td>
</tr>
</tbody>
</table>

Figure 3. Hierarchical semantic classification of adjectives [Iordanskaja 2003: 161–162]
noun. This is so since an adjective’s rank corresponds to the degree of inherence of the characteristic the adjective expresses: the more inherent the characteristic, the closer to the noun is the adjective.

Now let us give some examples.

- Adjectives that express an objective characteristic are closer to the modified noun than adjectives expressing a subjective characteristic:

  (23) zamečatelnaja vysokaja elka vs. vysokaja zamečatelnaja elka
  remarkable tall fir.tree

- Adjectives that express a qualitative characteristic are closer to the modified noun than adjectives expressing a quantitative characteristic:

  (24) malen'kaja srednevekovaja bâšnja vs. srednevekovaja malen'kaja bâšnja
  small medieval tower

- Adjectives that express a permanent characteristic are closer to the modified noun than adjectives expressing a temporary characteristic:

  (25) razbitoe uglovoe okno vs. uglovoe razbitoe okno
  broken corner window

- Adjectives that express an internal property are closer to the modified noun than adjectives expressing an external property:

  (26) dešëvye gorjačie bubliki vs. gorjačie dešëvye bubliki
  cheap hot bagels

- Hierarchy of internal property adjectives: for instance, «material» adjectives are closer to the modified noun than «color» adjectives; «kind» adjectives are closer to the modified noun than any other adjectives; etc.:

  (27) a. krasný aljuminievyj čajnik vs. aljuminievyj krasný čajnik
  red aluminium teapot

  b. farforovaja kofejnaja čaška vs. kofejnaja farforovaja čaška
  china coffee cup

To sum up: The linear ordering of cosubordinated adjectives is determined semantically — by their meaning — of course, everything else being equal, the same as with $N_{GENS}$ (see the end of Section 1): that is, the weight of genitive phrases being compared and discourse factors.

However, this is not true for Russian possessive adjectives, such as MAMIN ‘Mom’s’ or PETIN ‘Pete’s’: their mutual linear arrangement is determined by their syntactic role, cf.:

(28) a. Petin$_{[subj][poss]}$ mamin$_{[obj]}$ portrett
  ‘Mom’s portrait by Pete’/‘Mom’s portrait belonging to Pete’

  b. mamin$_{[subj][poss]}$ Petin$_{[obj]}$ portrett
  ‘Pete’s portrait by Mom’/‘Pete’s portrait belonging to Mom’

(29) a. Petin$_{[poss]}$ mamin$_{[subj]}$ portrett devočki
  ‘a girl’s portrait by Mom belonging to Pete’

  b. mamin$_{[poss]}$ Petin$_{[subj]}$ portrett devočki
  ‘a girl’s portrait by Pete belonging to Mom’

To account for this fact, in addition to the modificative SSyntRel, three more SSyntRelS for possessive adjectives in Russian are needed: possessive-modificative, subjectival-modificative, and objectival-modificative. As can be seen from (28)–(29), the order of possessive adjectives with respect to the modified $N$ is as follows:

$$\text{ADJ} \leftarrow \text{poss-modif} \leftarrow \text{ADJ} \leftarrow \text{subj-modif} \leftarrow \text{ADJ} \leftarrow \text{obj-modif} \leftarrow \text{N}.$$
For instance, Petin repinskij mamin portret lit. ‘Pete’s Repin’s Mom’s portrait’ = ‘Mom’s portrait by Repin owned by Pete’.

NB: The cooccurrence of two or more possessive adjectives is rare, so that, generally speaking, it could be ignored. However, this case is interesting from a theoretical viewpoint.

The cooccurrence of possessive adjectives with “normal” ones is determined by two general rules:

1) The possessive-modificative ADJ precedes all “normal” ADJs:

(20) maminy[d]        dovoennye[t]     poželtevšie[c]    semejnyc[k]    fotografiip
Mom’s        pre-war     yellowed     family     photographs

2) The subjectival-modificative and objectival-modificative ADJs follow all “normal” ADJs:

(21) a. dovoennye[t]     poželtevšie[c]    maminy[s]      fotografii    našego     doma
pre-war     yellowed     Mom’s        photographs     of.our     house

b. dovoennye[t]     poželtevšie[c]    maminy[o]      fotografii,    sdelannye     Petej
pre-war     yellowed     Mom’s        photographs     taken     by.Pete

4.2. Comparison of the two orderings: Similarities and differences

Recall that cosubordinated N GENs follow the governing N, while cosubordinated ADJs precede it. Therefore, the order of N GENs is a mirror image of that of ADJs. This means that comparing these two orderings we actually speak of the degree of closeness of an N GEN or an ADJ to its governor N.

The ordering of cosubordinated N GENs and that of cosubordinated ADJs in Russian are similar in the following two respects:

• The mutual ordering of Russian possessive ADJs (ADJ←poss-modif← + ADJ←subj-modif← + ADJ←obj-modif← + N) is the same (of course, mirror-wise) as the mutual ordering of the corresponding N GENs (that is, N + –obj-adnom→N GEN + –subj-adnom→N GEN + –poss-adnom→N GEN; Figure 1). The possessive adjectival modifier is the outermost, and the objectival adjectival modifier is closer to the modified noun than the subjectival one. This is natural, since possessive ADJs are simply adjectivalizations of N GENs.

• The mutual ordering of repeatable N GENs (that is, qual-adnom and attr-adnom N GENs) is the same as the mutual ordering of non-possessive ADJs, since it is determined by the same hierarchical semantic classification of the corresponding lexical units. This is also natural, since the closeness of a modifier to its governor N is determined by the degree of semantic inherence of the characteristic expressed: a more inherent characterization stands closer to N.

The difference between the ordering of cosubordinated N GENs and that of cosubordinated ADJs in Russian is as follows. The cosubordinated N GENs are ordered syntactically — according to different SSyntRels that link them to the governor, with several semantic “corrections” imposed by their meaning. To put it differently, the linear arrangement of Russian N GENs is based on the relations between the governing N and the depending N GENs being ordered. The cosubordinated ADJs, however, are ordered semantically — according to their meaning, with several syntactic “corrections” concerning possessive ADJs, which are positioned in conformity with the governing SSyntRels.

REFERENCES


