

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

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Lidija Iordanskaja, Igor Mel'čuk®

Observatoire de linguistique Sens-Texte, Université de Montréal,
Montréal, Canada; igor.melcuk@umontreal.ca

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 N_{GEN-i} s are mutually positioned as a function of the surface-syntactic relation that dominates each N_{GEN-i} (there are six such surface-syntactic relations). But fairly often the positioning of an N_{GEN-i} is determined by its meaning; thus, if in an $N \rightarrow N_{GEN-i}$ construction an N_{GEN} expresses the type of N 's referent, this N_{GEN} precedes all the other N_{GEN-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

Acknowledgements: The text of the present paper was read and criticized by J. Miličević, R. Poirer and two anonymous reviewers of *Voprosy Jazykoznanija*, whose remarks helped us improve the presentation. Please, dear colleagues, receive our most heartfelt gratitude!

For citation: Iordanskaja L., Mel'čuk I. Semantics in syntax: Linear ordering of genitive adnominal dependents cosubordinated to a noun in Russian. *Voprosy Jazykoznanija*, 2019, 4: 33–46.

DOI: 10.31857/S0373658X0005705-4

Семантика в синтаксисе: упорядочение соподчиненных генитивных зависимых существительного в русском языке

Лидия Николаевна Иорданская, Игорь Александрович Мельчук®

Лингвистическая обсерватория «Смысл-Текст», Монреальский университет,
Монреаль, Канада; igor.melcuk@umontreal.ca

Аннотация: В настоящей статье предлагаются формальные правила линейного упорядочения соподчиненных приименных генитивных зависимых в русском языке. Зависимые N_{GEN-i} взаимно упорядочиваются в первую очередь в соответствии с поверхностно-синтаксическим отношением, подчиняющим каждый данный N_{GEN-i} (таких отношений шесть). Кроме того, в ряде случаев на размещение N_{GEN-i} влияет его собственный смысл; так, если в конструкции $N \rightarrow N_{GEN-i}$ существительное N_{GEN} выражает тип референта существительного N , то этот N_{GEN} предшествует всем остальным N_{GEN-i} . Упорядочение соподчиненных прилагательных, порядок которых определяется иерархией их семантических классов (то есть семантически).

Ключевые слова: генитив, зависимости, именная группа, порядок слов, приименной генитив, русский язык, синтаксис, теория «Смысл-Текст»

Благодарности: Настоящая статья была прочитана Я. Миличевич, Р. Пуарэ и двумя анонимными рецензентами «Вопросов языкознания»; их критические замечания и предложения

помогли нам существенно улучшить изложение. Дорогие коллеги, пожалуйста, примите здесь выражение нашей самой сердечной благодарности!

Для цитирования: Iordanskaja L., Mel'čuk I. Semantics in syntax: Linear ordering of genitive adnominal dependents cosubordinated to a noun in Russian. *Вопросы языкознания*, 2019, 4: 33–46.

DOI: 10.31857/S0373658X0005705-4

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 $N \rightarrow N_{\text{GEN}}$ phrases in Russian were proposed. Here we will consider the linear ordering of genitive nouns $N_{\text{GEN-1}}$, $N_{\text{GEN-2}}$, $N_{\text{GEN-3}}$, ... cosubordinated to the same noun N in Russian. (In fact what is being ordered are the whole phrases headed by these N_{GENS} .)

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

- (1) a. *glagoly*_N *napravlennogo* *dviženija*_{N_{GEN}} *soveršennogo* *vida*_{N_{GEN}}
 verbs of.directed movement of.perfective aspect
 ruskogo *jazyka*_{N_{GEN}}
 of.Russian language
 b. **glagoly*_N *soveršennogo* *vida*_{N_{GEN}} *ruskogo* *jazyka*_{N_{GEN}} *napravlennogo* *dviženija*_{N_{GEN}}

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 [SSyntRels] (i.e., “with these SSyntRels 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.

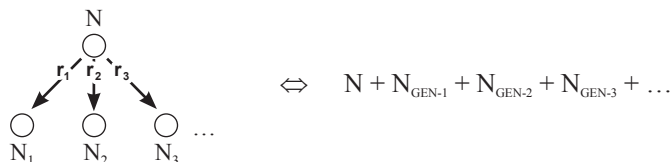
— Our examples are based on our own linguistic intuition, which on several occasions can diverge from other speakers’ judgments. However, our main thrust is not establishing facts of Contemporary Russian, but formulating implications of the form “If the given linguistic expression X is correct / incorrect, 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. *boli* ‘of.pain’.

Schematically, we are interested in correspondence (2):

(2) Surface-Syntactic Structure Deep-Morphological Structure



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 $N_{\text{GEN-1}}$, $N_{\text{GEN-2}}$, $N_{\text{GEN-3}}$, ... syntactically depend (each with its own dependents, if any).
- ii) The SSynt-relations r_i that subordinate these N_{GENs} 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 → $N_{\text{GEN-subj}}$

priезд-subj-adnom → *otca* 'coming of.father', *stakan-subj-adnom* → *vody* 'glass of.water'
 $N_{\text{GEN-subj}}$ expresses N 's deep-syntactic [DSynt-]actant **I**.

N-objective-adnominal → $N_{\text{GEN-obj}}$

osvoždenie-obj-adnom → *otca* 'liberation of.father'
portret-obj-adnom → *reběnka* 'portrait of.child'
 $N_{\text{GEN-obj}}$ expresses N 's DSynt-actant **II**.

N-qualificative-adnominal → $N_{\text{GEN-qual}}$

balka-[nedostatočnoj]-qual-adnom → *dliny* 'beam [of.insufficient] length'
 $N_{\text{GEN-qual}}$ denotes a predicate whose Sem-actant **1** or **2** is expressed by N ('*dlina* / length-**1** → *balka* / beam': *balka dvuxmetrovoy dliny* 'beam of.two.meter length'; '*mečta* / dream-**2** → *devuška* / girl': *devuška moej mečty* 'girl of.my dream'). In Russian, an $N_{\text{GEN-qual}}$ must necessarily have a syntactic dependent, normally an adjective, which expresses the other Sem-actant.

N-attributive-adnominal → $N_{\text{GEN-attr}}$

krik-attr-adnom → *boli* 'scream of.pain'
živopis'-attr-adnom → *Vozroždenija* 'painting of.Renaissance'
 $N_{\text{GEN-attr}}$ and N are semantically related not as a predicate and its argument, but by means of an "additional" predicate 'σ', which is not explicitly expressed in the sentence: '*krik, vyražajuščij bol'* / scream expressing pain' or '*živopis' vo.vremja Vozroždenija* / painting during Renaissance'.

N-genitive-possessive → $N_{\text{GEN-poss}}$

stadion-gen-poss → *universiteta* 'stadium of.University'
 $N_{\text{GEN-poss}}$ and N are semantically related by means of the predicate 'σ' = 'belong': '*stadion, prinadležaščij universitetu* / stadium belonging to.University'.

N-metaphorical → $N_{\text{GEN-metaph}}$

lenta-metaph → *dorogi* 'ribbon of.road'
 $N_{\text{GEN-metaph}}$ is the lexeme whose metaphor is N : *lenta_N* 'ribbon' is the metaphor of *doroga_{N_{GEN-metaph}}* 'road'.

- iii) These SSynt-relations require the postposition of their dependent N_{GENs} with respect to the modified N , with one exception: the **qual-adnom** SSyntRel allows the anteposition of its $N_{\text{GEN-qual}}$, if this $N_{\text{GEN-qual}}$ 1) corresponds to Sem-actant **1** of N , 2) has itself no depending

noun phrase and 3) is lexically marked as allowing for anteposition;¹ for instance, *pojas golubogo cveta* ‘belt of.light.blue color’ ~ *golubogo cveta pojasa*. The anteposition of $N_{\text{GEN-qual}}$ is left out of consideration in this paper.

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

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

- (3) a. For the meaning ‘statue representing Athena and carved by Phidias’:
statuja Afiny_{N_{GEN}} Fidija_{N_{GEN}} ‘statue of.Athena of.Phidias’ < **statuja Fidija Afiny* >;
 but for the meaning ‘statue representing Phidias and carved by Athena’:
statuja Fidija_{N_{GEN}} Afiny_{N_{GEN}} ‘statue of.Phidias of.Athena’ < **statuja Afiny Fidija* >.
- b. For the meaning ‘poet’s soul of this philosopher’:
duša poëta_{N_{GEN}} ètogo filosofo_{N_{GEN}} ‘soul of.poet of.this philosopher’ < **duša ètogo filosofo poëta* >;
 but for the meaning ‘philosopher’s soul of this poet’:
duša filosofo_{N_{GEN}} ètogo poëta_{N_{GEN}} < **duša ètogo poëta filosofo* >
 ‘soul of.philosopher of.this poet’.

There are 15 logically possible pairs of $N_{\text{GEN-S}}$ (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 $N_{\text{GEN-S}}$ is not sufficient: for some SSyntRel pairs, the order of $N_{\text{GEN-S}}$ depends also on the meaning of N and/or on that of $N_{\text{GEN-S}}$. Thus, in the phrase *krik boli_{N_{GEN-attr}} Peti_{N_{GEN-subj}}* ‘scream of.pain of.Pete’ the $N_{\text{GEN-attr}}$ can only precede the $N_{\text{GEN-subj}}$ (**krik Peti boli*), but in *proizvedenija vos’midesjatyx godov_{N_{GEN-attr}} L’va Tolstogo_{N_{GEN-subj}}* ‘works of.1880s of.Leo Tolstoy’ ~ *proizvedenija L’va Tolstogo vos’midesjatyx godov* the $N_{\text{GEN-attr}}$ can both precede or follow the $N_{\text{GEN-subj}}$ — if the $N_{\text{GEN-attr}}$ denotes the temporal coordinate of the fact denoted by the governor N . As a consequence, our rules have to account for semantic factors as well.

Before we proceed to the formulation of N_{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 $N_{\text{GEN-S}}$ 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.

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 morskoy volny pojasa* ‘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 $N + N_{GEN\langle MATERIAL \rangle} + N_{GEN\langle COLOR \rangle}$:² *stol krasnogo dereva bol'shogo razmera* ‘table of.mahogany of.big size’ ~ [?]*stol bol'shogo razmera krasnogo dereva*; however, under emphasis, the dispreferred order is quite normal:

- (4) *Ja išču stol bol'shogo razmera KRASNOGO DEREVA, a ne iz karel'skoj berězy.*
‘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) *Stoly bol'shogo razmera — krasnogo dereva —*
tables of.big size of.mahogany
u nas imejutsja v dostatočnom količestve.
at us are.present in sufficient quantity
‘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'shogo 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) *Stoly bol'shogo razmera krasnogo dereva u nas imejutsja*
tables of.big size of.mahogany at us are.present
v bol'sem količestve, čem takie že stoly iz karel'skoj berězy.
in bigger quantity than the.same tables of Karelian birch
‘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} s 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**

1	2	3	4	5	6
–qual-adnom→N	–metaph→N	–obj-adnom→N	–attr-adnom→N	–subj-adnom→N	–gen-poss→N

Figure 1. Linear order of different-type postposed cosubordinated N_{GEN} s 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} s.³
2. If N_{GEN} denotes the **material** of which N is made, then this N_{GEN} precedes all other cosubordinated N_{GEN} s 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} s, then this N_{GEN} precedes all other cosubordinated N_{GEN} s.

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:

$N < \langle \langle \text{KIND} \rangle \rangle < \langle \langle \text{COLOR} \rangle \rangle < \langle \langle \text{MATERIAL} \rangle \rangle < \langle \langle \text{SHAPE} \rangle \rangle < \langle \langle \text{WEIGHT} \rangle \rangle < \begin{matrix} \text{external} \\ \text{characteristics} \end{matrix} < \langle \langle \text{(subjective) EVALUATION} \rangle \rangle$ $\langle \langle \text{ORIGIN} \rangle \rangle$
<p>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.)</p>

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_{GENS} , it is also partially valid for the different-type N_{GENS} . More precisely, Rules 2 are based on the same Inherence Principle: thus, the N_{GEN} expressing «KIND» precedes all other N_{GENS} , etc.

3. Illustrations of N_{GEN} ordering rules

We will illustrate the above rules, proceeding as follows.

- The SSyntRels are considered pairwise, one after another, from left to right (in conformity with the template in Figure 1).
- Each pair of SSyntRels 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 SSyntRels — that is, **qual-adnom** and **attr-adnom** — is also considered in combination with itself.
- More than three cosubordinated N_{GENS} 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.

-qual-adnom→N

This SSyntRel is repeatable.

With -qual-adnom→N:

- (7) a. *tort domašnego prigotovljenija gigantskogo razmera* and
 cake of.domestic preparation.«ORIGIN» of.giant size.«SIZE»
tort gigantskogo razmera domašnego prigotovljenija
- b. *kovčer pčstryx cvetov nebol'sogo razmera neobyčajnoj*
 carpet of.different colors.«COLOR» of.small size.«SIZE» of.extraordinary
krasoty vs.
 beauty.«EVALUATION»
 ?*kovčer nebol'sogo razmera pčstryx cvetov neobyčajnoj krasoty* and
 **kovčer neobyčajnoj krasoty pčstryx cvetov nebol'sogo razmera*

The order of $N_{\text{GEN-qual}}$ s 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 **–metaph**→N; N_{GEN-qual} precedes N_{GEN-metaph}:

- (8) *minarety strel'čatoj formy zavodskix trub* N_{GEN-qual} N_{GEN-metaph} VS.
 minarets of.arrow shape of.mill chimneys
 **minarety zavodskix trub strel'čatoj formy* N_{GEN-metaph} N_{GEN-qual}

With **–obj-adnom**→N; N_{GEN-qual} precedes N_{GEN-obj}:

- (9) a. *portret nebol'sogo razmera molodoj ženščiny* N_{GEN-qual} N_{GEN-obj} VS.
 portrait of.small size of.young woman
 ?*portret molodoj ženščiny nebol'sogo razmera* N_{GEN-obj} N_{GEN-qual}
 b. *sistema raspredelenija toka vysokoj naděžnosti* N_{GEN-obj} N_{GEN-qual} VS.
 system of.distribution_{«KIND»} of.current of.high reliability
 **sistema vysokoj naděžnosti raspredelenija toka*

The N_{GEN} *raspredelenija* [toka] is an N_{GEN-obj} (being DSynt-actant II of the noun SISTEMA); according to the standard template (Figure 1), it should follow an N_{GEN-qual} — as in (9a). However, a semantic factor perturbs the standard order: this N_{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 N_{GEN-qual}.

With **–attr-adnom**→N; N_{GEN-qual} precedes N_{GEN-attr}:

- (10) a. *voda kristal'noj čistoty ètogo ozera* N_{GEN-qual} N_{GEN-attr} VS.
 water of.crystal purity of.this lake
 **voda ètogo ozera kristal'noj čistoty* N_{GEN-attr} N_{GEN-qual}
 b. *stol krasnogo dereva ogromnyx razmerov* N_{GEN-attr} N_{GEN-qual} VS.
 table of.mahogany_{«MATERIAL»} of.huge dimensions
 ??*stol ogromnyx razmerov krasnogo dereva* N_{GEN-qual} N_{GEN-attr}

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

With **–subj-adnom**→N; N_{GEN-qual} precedes N_{GEN-subj}:

- (11) a. *kartina nebol'sogo razmera neizvestnogo xudožnika* N_{GEN-qual} N_{GEN-subj} VS.
 painting of.small size of.unknown artist
 ?*kartina neizvestnogo xudožnika nebol'sogo razmera* N_{GEN-subj} N_{GEN-qual}
 b. *kuča morskogo peska bol'sogo razmera* N_{GEN-subj} N_{GEN-qual} VS.
 pile_{«QUANTITY»} of.sea sand of.big size
 ??*kuča bol'sogo razmera morskogo peska* N_{GEN-qual} N_{GEN-subj}
 c. *rjumka krasnogo vina pričudlivoj formy* N_{GEN-subj} N_{GEN-qual} VS.
 wine.glass_{«QUANTITY»} of.red wine of.bizarre shape
 **rjumka pričudlivoj formy krasnogo vina*⁵

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: RJUMKA1a ‘tall glass with a thin stem...’ (*rjumka strannoju formju* ‘wine glass of bizarre shape’) and RJUMKA1b ‘quantity of liquid...’ (*rjumka vina* ‘glass of wine’): *Xozjajka postavila peredo mnoju rjumku krasnogo vina pričudlivoju formju* ‘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: **On vypil rjumku krasnogo vina pričudlivoju formju* ‘He drank a glass of wine of bizarre shape’.

With **-gen-poss**→N; N_{GEN-qual} precedes N_{GEN-poss}:

- (12) *kartiny nebol'sogo razmera*_{N_{GEN-qual}} *ètogo kollektionera*_{N_{GEN-poss}} vs.
 paintings of.small size of.this collector
 **kartiny ètogo kollektionera*_{N_{GEN-poss}} *nebol'sogo razmera*_{N_{GEN-qual}}

-metaph→N

This SSyntRel is non-repeatable and combines only with an N_{GEN-qual} (see above) and with an N_{GEN-attr}.

- (13) *minarety zavodskix trub*_{N_{GEN-metaph}} *Leonida Solov'èva*_{N_{GEN-attr}} vs.
 minarets of.mill chimneys of.Leonid Solovyov
 **minarety Leonida Solov'èva*_{N_{GEN-attr}} *zavodskix trub*_{N_{GEN-metaph}}

-obj-adnom→N

This SSyntRel is non-repeatable.

With **-attr-adnom**→N; N_{GEN-obj} precedes N_{GEN-attr}:

- (14) a. *zavody boepripasov*_{N_{GEN-obj}} *Urala*_{N_{GEN-attr}} vs.
 plants of.ammunition of.the.Urals
 **zavody Urala*_{N_{GEN-attr}} *boepripasov*_{N_{GEN-obj}}
 b. *issledovanija dvux poslednix let*_{N_{GEN-attr}} *processov*_{N_{GEN-obj}} *aromatizacii* and
 studies of.two last years_{«TIME»} of.processes of.aromatization
*issledovanija processov*_{N_{GEN-obj}} *aromatizacii dvux poslednix let*_{N_{GEN-attr}}

The variation of the placement of the N_{GEN-attr} denoting **time** is allowed by Rule 2.3.

With **-subj-adnom**→N; N_{GEN-obj} precedes N_{GEN-subj}:

- (15) a. *portret devočki*_{N_{GEN-obj}} *Serova*_{N_{GEN-subj}} vs. ?*portret Serova*_{N_{GEN-subj}} *devočki*_{N_{GEN-obj}}
 portrait of.girl of.Serov
 b. *talant ljubvi*_{N_{GEN-obj}} *poèta*_{N_{GEN-subj}} vs. **talant poèta*_{N_{GEN-subj}} *ljubvi*_{N_{GEN-obj}}
 talent of.love_{«KIND»} of.poet

NB: The violation of the standard order in (15b) is worse than that in (15a) because of Rule 2.1: N_{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 **-gen-poss**→N; N_{GEN-obj} precedes N_{GEN-poss}:

- (16) *portret devočki*_{N_{GEN-obj}} *s ser'goj amsterdamskogo muzeja*_{N_{GEN-poss}} vs.
 portrait of.girl with earring of.Amsterdam museum
 **portret amsterdamskogo muzeja*_{N_{GEN-poss}} *devočki*_{N_{GEN-obj}} *s ser'goj*

-attr-adnom→N

This SSyntRel is repeatable.

With **-attr-adnom**→N:

- (17) *pisateli Vostočnoj Evropy*_{N_{GEN-attr}} *devjatnadcatogo veka*_{N_{GEN-attr}} and
 writers of.Eastern Europe_{«LOCATION»} of.19th century_{«TIME»}
*pisateli*_{N_{GEN-attr}} *devjatnadcatogo veka*_{N_{GEN-attr}} *Vostočnoj Evropy*_{N_{GEN-attr}}

The freedom of the placement of the N_{GEN-attr} denoting **time** is ensured by Rule 2.3.

- (18) *klinok damasskoj stali semnadcatogo veka*
 blade of.Damascus steel_{«MATERIAL»} of.17th century_{«TIME»}
izvestnogo Abu-Vaxba and
 of.well-known Abu-Wahb_{«CAUSER»}
klinok damasskoj stali izvestnogo Abu-Vaxba semnadcatogo veka vs.
 **klinok izvestnogo Abu-Vaxba damasskoj stali semnadcatogo veka*

The impossibility of the last phrase is also determined by semantic hierarchy: the $N_{\text{GEN-attr}}$ denoting «MATERIAL» should precede other N_{GEN} s (except «KIND»).

With **-subj-adnom**→N; $N_{\text{GEN-attr}}$ precedes $N_{\text{GEN-subj}}$:

- (19) a. *krik užasa rebënka* vs. **krik rebënka užasa*
 scream of.horror of.child
 b. *grud' myslitelja moego druga* vs.
 chest of.thinker of.my friend
 **grud' moego druga myslitelja* [ungrammatical in the intended meaning]
 c. *bjust karrarskogo mramora velikogo Mikelandželo* vs.
 bust of.Carrara marble of.great Michelangelo
 **bjust velikogo Mikelandželo karrarskogo mramora*
 d. *rasskazy vos'midesjatyx godov Antona Pavloviča Čexova* and
 short.stories of.1880s years of.Anton Pavlovich Chekhov
rasskazy Antona Pavloviča Čexova vos'midesjatyx godov

The freedom of placement of the $N_{\text{GEN-attr}}$ denoting time corresponds to Rule 2.3.

With **-gen-poss**→N; $N_{\text{GEN-attr}}$ precedes $N_{\text{GEN-poss}}$:

- (20) a. *kulinarnye knigi srednevekovoj Italii našej biblioteki* vs.
 cook books of.medieval Italy of.our library
 **kulinarnye knigi našej biblioteki srednevekovoj Italii*
 b. *knigi vosemnadcatogo veka našej biblioteki* and
 books of.18th century of.our library
knigi našej biblioteki vosemnadcatogo veka
 c. *knigi izdatel'stva Muton našej biblioteki* and
 books of.publisher Mouton of.our library
knigi našej biblioteki izdatel'stva Muton

The freedom of placement of the $N_{\text{GEN-attr}}$ denoting time (20b) or the causer (20c) corresponds, respectively, to Rules 2.3 and 2.4.

-subj-adnom→N

This SSyntRel is non-repeatable.

With **-gen-poss**→N; $N_{\text{GEN-subj}}$ precedes $N_{\text{GEN-poss}}$:

- (21) *bjust Mikelandželo Ėrmitaža* vs.
 bust of.Michelangelo of.Hermitage.museum
 **bjust Ėrmitaža Mikelandželo*

To demonstrate how the rules proposed can be applied, let us return to example (1), repeated here as (22):

- (22) *glagoly* *napravlennogo* *dviženija*_{N_{GEN-attr}} *soveršennogo* *vida*_{N_{GEN-qual}}
 verbs of.directed movement of.perfective aspect
rusškogo *jazyka*_{N_{GEN-subj}}
 of.Russian language

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

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

4. Ordering of cosubordinated N_{GEN}S vs. ordering of cosubordinated ADJs

It is interesting to compare the ordering of Russian postposed cosubordinated N_{GEN}S with the ordering of Russian anteposed cosubordinated adjectives. As is to be expected, N_{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_{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

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

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) *zamečatel'naja* *vysokaja* *ělka* vs. [?]*vysokaja zamečatel'naja* *ělka*
 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* *bašnja* vs. [?]*srednevekovaja malen'kaja* *bašnja*
 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) *deševye* *gorjačie* *bublik* vs. [?]*gorjačie deševye* *bublik*
 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. *krasnyj* *aljuminievyy* *čajnik* vs. [?]*aljuminievyy krasnyj* *čajnik*
 read 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_{GEN}S (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] *portret*
 'Mom's portrait by Pete'/'Mom's portrait belonging to Pete'
- b. *mamin*_{[subj]/[poss]} *Petin*_[obj] *portret*
 'Pete's portrait by Mom'/'Pete's portrait belonging to Mom'
- (29) a. *Petin*_[poss] *mamin*_[subj] *portret devočki* 'a girl's portrait by Mom belonging to Pete'
- b. *mamin*_[poss] *Petin*_[subj] *portret 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:

ADJ←**poss-modif**– + ADJ←**subj-modif**– + ADJ←**obj-modif**– + 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*_[poss] *dovoennye*_[temporal] *poželtevšie*_[color] *semejnye*_[kind] *fotografii*
 Mom's pre-war yellowed family photographs

2) The **subjectival-modificative** and **objectival-modificative** ADJs follow all "normal" ADJs:

(21) a. *dovoennye*_[temporal] *poželtevšie*_[color] *maminy*_[subj] *fotografii* *našego* *doma*
 pre-war yellowed Mom's photographs of.our house
 b. *dovoennye*_[temporal] *poželtevšie*_[color] *maminy*_[obj] *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 $N_{GEN}S$ follow the governing N, while cosubordinated ADJs precede it. Therefore, the order of $N_{GEN}S$ 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 $N_{GEN}S$ 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 $N_{GEN}S$ (that is, $N + \text{~~obj-adnom}~~ \rightarrow N_{GEN} + \text{~~subj-adnom}~~ \rightarrow N_{GEN} + \text{~~poss-adnom}~~ \rightarrow N_{GEN}$; 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 $N_{GEN}S$.

- The mutual ordering of repeatable $N_{GEN}S$ (that is, **qual-adnom** and **attr-adnom** $N_{GEN}S$) 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 $N_{GEN}S$ and that of cosubordinated ADJs in Russian is as follows. The cosubordinated $N_{GEN}S$ 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 $N_{GEN}S$ is based on the relations between the governing N and the depending $N_{GEN}S$ 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.

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Получено / received 05.11.2018

Принято / accepted 19.02.2019