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# Рассогласование по роду в русской именной группе: квантитативное исследование

Статья посвящена явлению рассогласования по роду в русском языке, которое рассматривается с синхронной и диахронической точек зрения. С помощью экспериментального исследования устанавливается частотное распределение моделей атрибутивного и предикативного согласования для именных групп, допускающих рассогласование по роду. Затем проводится сравнение данных современного русского языка с результатами более ранних статистических исследований. Результаты сравнения говорят в пользу анализа, согласно которому смена родового признака происходит в зоне референциальной семантики именной группы.

**Ключевые слова:** рассогласование по роду, референциальный род, именная группа, группа определителя, русский язык.

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# Gender mismatch in Russian: quantitative study<sup>1</sup>

This paper addresses the issue of gender mismatch in Russian. I discuss mixed agreement patterns in Russian nominal phrases and evaluate different approaches

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to their analysis. Using experimental data I estimate the current distribution of gender mismatch patterns for both attributive and predicate agreement. I compare recent data with statistical studies from mid-twentieth century and then discuss possible interpretations of the change in distribution of the patterns. In particular, I show that the phenomenon of gender mismatch in Russian correlates with the referential domain in the syntactic structure. New empirical evidence presented in the paper provides both synchronic and diachronic estimation of gender mismatch frequency in Russian.

**Key words:** gender mismatch, mixed agreement, noun phrase, DP, referential domain, Russian.

## 1. Gender agreement patterns

In Russian the standard agreement pattern implies the same gender values for adnominals and verbs inflected for past tense choosing between masculine, feminine and neuter agreement. However, there is a set of nouns that refer to humans denoting their position, profession, degree etc. and trigger masculine grammatical agreement, but that are also used for denoting female humans as far as they do not have a feminine parallel. When referring to women, in nominative case they may trigger both masculine and feminine agreement and, as a consequence, gender mismatch may occur: constituents may demonstrate different values of the same feature.

The phenomenon of mixed agreement appeared not long ago. [Muchnik, 1971] and [Crockett, 1976] date the first examples back to 1920s. Due to historic reasons it became essential to differentiate nouns that denote social status or profession by gender. For a group of nouns, it was impossible to derive feminine parallel for several reasons: derivational affixes might add expressive meaning (*vrach* – *vrachiha* ‘doctor’) or lead to phonetically difficult alternations (*hirurg* – *hirurzhka* ‘surgeon’) (examples from [Muchnik, 1971]).

Thus, constituents inside noun phrases with such heads may demonstrate different values of gender feature: not only masculine grammatical value but also feminine referential value. According to grammars, the preferred agreement pattern is when adnominals agree with the formal features of the noun and predicate shows referential agreement. It is important to note that adnominals may bear feminine agreement only if the predicate demonstrates the same value. Moreover, adnominals cannot trigger referential feminine gender if adnominals which have higher position in the syntactic structure or the predicate are masculine. In (1) the paradigm adopted from [Lyutikova, 2015] with added demonstratives is exemplified.

## (1) a. masculine grammatical agreement

<i>Этот</i>	<i>новый</i>	<i>зубной</i>	<i>врач</i>
etot	novyj	zubnoj	vrach
this-M.NOM.SG	new-M.NOM.SG	dental-M.NOM.SG	doctor.M.NOM.SG
<i>пришел</i>			
prishel			
arrived-M.SG			

## b. feminine predicate agreement

<i>этот</i>	<i>новый</i>	<i>зубной</i>	<i>врач</i>
etot	novyj	zubnoj	vrach
this-M.NOM.SG	new-M.NOM.SG	dental-M.NOM.SG	doctor.M.NOM.SG
<i>пришла</i>			
prishla			
arrived-F.SG			

## c. feminine attributive and predicate agreement

<i>эта</i>	<i>новая</i>	<i>зубной</i>	<i>врач</i>
eta	novaja	zubnoj	vrach
this-F.NOM.SG	new-F.NOM.SG	dental-M.NOM.SG	doctor.M.NOM.SG
<i>пришла</i>			
prishla			
arrived-F.SG			

## d. feminine attributive and predicate agreement

<i>?эта</i>	<i>новая</i>	<i>зубная</i>	<i>врач</i>
eta	novaja	zubnaja	vrach
this-F.NOM.SG	new-F.NOM.SG	dental-F.NOM.SG	doctor.M.NOM.SG
<i>пришла</i>			
prishla			
arrived-F.SG			

## e. ill-formed

<i>*эта</i>	<i>новая</i>	<i>врач</i>	<i>пришел</i>
eta	novaja	vrach	prishel
this-F.NOM.SG	new-F.NOM.SG	doctor.M.NOM.SG	arrived-M.SG

## f. ill-formed

<i>*этот</i>	<i>новый</i>	<i>зубная</i>	<i>врач</i>
*etot	novyj	zubnaja	vrach
this-M.NOM.SG	new-M.NOM.SG	dental-F.NOM.SG	doctor.M.NOM.SG

## 2. Gender mismatch analysis

### 2.1. Inherent semantic feature [FEMALE]

Former analyses suggest that the observed variance results from the “feminization” at some stage of derivation, that henceforth determines the agreement pattern of the nominal. For instance, [Matushansky, 2013] assumes that gender switch occurs when a gender semantic feature [FEMALE] is introduced into syntactic structure. In the process of derivation grammatical features of merging nodes must either match already existing inherent gender features of the NP or be interpreted semantically and therefore introduce an inherent semantic feature [FEMALE]. The ungrammaticality of (1e) and (1f) is therefore explained by both syntactic and semantic feature clash: syntactic features do not match and the semantic feature [MALE] cannot override the [FEMALE] feature.

### 2.2. The Feminizing Head Ж

[Pesetsky, 2013] proposes that feminization occurs through a phonologically null morpheme Ж ([že]). Once the morpheme merges, the nominal triggers feminine agreement. The feminizing head demonstrates structural restrictions: it cannot be merged lower than a certain structural threshold that is above the lowest level of the nominal phrase at which adjectives with nonintersective, idiomatic or argumental interpretation are introduced. Once the morpheme merges, the nominal triggers feminine agreement.

[Lyutikova, 2015] develops the idea of the feminizing head and more precisely describes its possible positions inside the syntactic structure of Russian DPs. According to the analysis, Ж should be introduced not only above the level of lexical noun, but also above subjective adjectives and above cardinal and collective numerals.

### 2.3. DP as a referential semantics domain

Note that Pesetsky in his analysis suggests the structure from (2a) with two high adjectives only one of which demonstrates referential gender value to be marginally possible. The ill-formedness of (2b) is explained by the fact that the lower constituent already demonstrates female agreement which means that the feminizing head has already merged.

(2) a.	<i>очень</i>	<i>интересная</i>	<i>новый</i>	<i>врач</i>
	očen'	interesn-aja	nov-yj	vrach
	very	interesting-F.NOM.SG	new-M.NOM.SG	doctor-NOM.SG
b.	<i>*очень</i>	<i>интересный</i>	<i>новая</i>	<i>врач</i>
	očen'	interesn-yj	nov-aja	vrach
	very	interesting-M.NOM.SG	new-F.NOM.SG	doctor-NOM.SG

[Pesetsky, 2013, (38)]



The study was conducted via Google Forms and consisted of a fill-in-the-blanks task. Respondents were asked to read a compound sentence: the first clause provided the context that explicitly indicated the gender of the human denoted by the subject in the second coordinate clause. The second clause contained the noun phrase and the verb in past tense with gaps instead of endings. Native speakers were asked to write the adnominals and the verb with the endings in the textbox so that the sentence was complete. An example of a stimulus is presented in (4); the two most frequent variants produced by respondents are presented in (5).

(4) *Всю ночь Тане не удалось сомкнуть глаз: наш\_ ответствен\_ проект\_ менеджер готовил\_ презентацию рекламной кампании для радиохолдинга.*

*Vsju noch' Tane ne udalos' somknut' glaz: nash\_ otvetstvenn\_ proektn\_ menedzher gotovil\_ prezentaciju reklamnoj kampanii dlja radioholdinga.*

‘All night long Tanya didn’t have a chance to get a wink of sleep: our responsible project manager was preparing a presentation of promotional campaign for the radio corporation.’

- (5) a. *наш*      *ответственный*      *проектный*      *готовил*  
 nash      otvetstvennyj      proektnyj      gotovil  
 our-м      responsible-м      project-м      was preparing-м
- b. *наш*      *ответственный*      *проектный*      *готовила*  
 nash      otvetstvennyj      proektnyj      gotovila  
 our-м      responsible-м      project-м      was preparing-F

The results show that on the average in 68% of answers speakers used the adnominals in masculine while the verb was feminized (6a). Agreement with the formal features of the noun was found in 25.21% of answers (6b). Purely feminine agreement is possible only for types 1, 2, 3 and 5 of combinations (3). At least one modifier was feminine in 4.5% of answers (6c).

- (6) a. *наш*      *ответственный*      *проектный*      *менеджер*  
 nash      otvetstvenn-yj      proektn-yj      menedzher  
 our-м      responsible-м      project-м      manager.м
- готовила*      *презентацию*  
 gotovil-a      prezentaciju  
 was preparing-F      presentation

(6) б. <i>наш</i>	<i>финансовый</i>	<i>аналитик</i>	<i>представил</i>
nash	finansov-yj	analitik	predstavil
our-m	financial-m	analyst.m	presented-m
<i>прогноз</i>	<i>цен</i>	<i>на</i>	<i>нефть</i>
prognoz	cen	na	neft'
forecast	prices	for	oil
с. <i>ваша</i>	<i>ученый</i>	<i>секретарь</i>	<i>организовала конференцию</i>
vash-a	uchen-yj	sekretar'	organizoval-a konferenciju
your-F	academic-m	secretary-m	organized-F conference

Another remarkable result was that determiners demonstrated feminine agreement significantly more often when the high adjective was also feminine (7). This means that native speakers preferred the pattern where there was no gender mismatch between the determiner and the high adjective. The number of answers with feminine lower adjectives was non-significant.

- (7) a. feminine determiner + masculine high adj.: 9 answers  
 b. feminine determiner + feminine high adj.: 20 answers

#### 4. The comparison

In this section I will compare the results of the conducted survey with the data from previous statistical studies. I will first consider results of the questionnaire-based research conducted by [Muchnik, 1971]. The aim of his survey was to investigate how wide gender mismatch patterns are used across native speakers of different age and social background. The questionnaire was distributed in 1963 across the country (3780 participants) and included several lexical variants of “high adjective + noun” and “noun + verb” combinations. The questions were as following: How would you say referring to a woman: “nice-m doctor” or “nice-F doctor”? As far as in this survey participants had to choose between feminine and masculine agreement in written form knowing the context, it is appropriate to compare the results with the data from the current survey with fill-in-the-gaps task.

Another source for comparison will be the frequency-based stylistic dictionary of variants [Graudina et al., 1976]. This dictionary provides results of a statistical research of the data from newspaper corpus from 1960s–70s. The results include the frequency distribution of NPs denoting female humans with masculine and feminine agreement. The frequency distribution of agreement patterns was also provided separately for attributive agreement with high adjectives and for predicate agreement.



Table 1

**The comparison of the data from the three statistical studies**

			[Muchnik, 1971] 1960s	[Graudina et al., 1976] 1960s–70s	Current survey
a.	<i>новый</i> novyj new-M.NOM.SG	<i>врач</i> vrach doctor.M.NOM.SG	69.9%	69.05%	92.14%
b.	<i>новая</i> novaja new-F.NOM.SG	<i>врач</i> vrach doctor.M.NOM.SG	25.0%	30.96%	7.86%
c.	<i>врач</i> vrach doctor.M.NOM.SG	<i>пришел</i> prishel arrived-M.SG	38.6%	4.57%	25.21%
d.	<i>врач</i> vrach doctor.M.NOM.SG	<i>пришла</i> prishla arrived-F.SG	51.7%	95.43%	74.79%
e.	<i>мой</i> moj my-M.NOM.SG	<i>врач</i> vrach doctor.M.NOM.SG	–	–	91.16%
f.	<i>моя</i> moja my-F.NOM.SG	<i>врач</i> vrach doctor.M.NOM.SG	–	–	8.84%

In Table 1 we can see that data from [Muchnik, 1971] and [Graudina et al., 1976] concerning attributive agreement do not differ significantly. Statistics for predicate agreement are, on the contrary, significantly different. There may be two reasons for that: on the one hand, [Muchnik, 1971] provides data from spoken language while [Graudina et al., 1976] analyzed written discourse. On the other hand, the frequency of feminine agreement could have risen. The analysis of correlations with age from [Muchnik, 1971] provides evidence for the latter reason (Table 2). The younger respondent was the more likely it was that he/she would stick to the feminine agreement pattern. The usage of mixed agreement patterns was expanding with younger generations leaning towards speech innovations.

The comparison of data from previous and present studies shows that in 50 years the distribution of masculine and feminine agreement within verbs and high adjectives has significantly changed. For both attributives and predicates the percent of agreement with formal features of the noun has increased.



Table 2

**The distribution of the agreement patterns  
for native speakers of different age**

<b>Born</b>	<i>врач</i>	<i>пришел</i>	<i>врач</i>	<i>пришла</i>	<b>hesitant</b>
	<i>vrach</i> doctor.M.NOM.SG	<i>prishel</i> arrived-M.SG	<i>vrach</i> doctor.M.NOM.SG	<i>prishla</i> arrived-F.SG	
before 1910		49.8%		42.2%	8.0%
1910–1919		44.1%		45.2%	10.7%
1920–1929		38.1%		51.0%	10.9%
1930–1939		36.7%		53.7%	9.6%
1940–1949		37.3%		53.1%	9.6%

First, let's try to explain this change using the idea of the feminizing head. Note that the frequency of feminine attributive agreement has significantly dropped, as demonstrated in Table 1 (a–b). We may assume that the structural threshold below which Ж cannot merge has moved upwards. Consequently, feminine agreement became unacceptable for high adjectives. Thus, feminine agreement is still possible for higher constituents inside the noun phrase, namely, determiners. However, our study shows that the frequency of agreement patterns for demonstratives and possessive pronouns does not differ significantly from the distribution for high adjectives (Table 1 (e–f)). Therefore, we may assume that the feminizing head is moving even higher, to a position above determiners, in other words above DP. In this case the analysis involving Ж becomes unjustified because there remains only one position where it may appear. However, I reject the analysis based on the structural threshold change because for high adjectives feminine agreement is not prohibited.

Let's assume now that the location of the feminizing head does not change. Then the frequency decline of feminine adjectival agreement may correlate with the general decline in choosing gender mismatch strategy. The comparison with data from [Graudina et al., 1976] concerning predicate agreement shows that the frequency of feminization is decreasing with masculine agreement becoming more frequent and increasing from 4.57% up to 25.21%.

Within Pesetsky's analysis it remains unclear why determiners and high adjectives demonstrate feminine agreement to the same extent. We have

already noticed that determiners and high adjectives rarely disagree (7). This probably means that demonstrative and possessive pronouns and high adjectives have the same effect as two high adjectives regarding referential agreement (2a). That is why the merge of Ж between two adnominal constituents (excluding low adjectives) is troublesome. Consequently, the number of possible positions for the feminizing head is decreasing to two: right above low adjectives and above DP. In other words, the gender switch occurs at the level of DP. Therefore, the idea of a feminizing head becomes superfluous. Referential agreement corresponds to the DP projection which functions as a referential semantics domain, where gender switch occurs. This idea is implied in approaches suggested by [Lyutikova, 2015] and [Pereltsvaig, 2015].

Pesetsky argues that the advantage of the feminizing head approach leans upon the idea of optionality of the head that introduces semantic features. This means that the account is purely syntactic and is not connected to the semantics of feminine gender or the morphology. The current study has shown that the phenomenon of gender mismatch in Russian correlates with the referential domain. Therefore, semantic component cannot be detached from the analysis of such phenomenon.

To sum up, we have discussed the phenomenon of gender mismatch in Russian. In this paper I provided both synchronic and diachronic estimation of gender mismatch frequency in Russian. I have also tested the approaches against experimental data.

The survey has shown that native speakers continue choosing gender mismatch strategy for adnominals in speech production. It would be interesting to find out how native speakers evaluate different agreement patterns; however, this is the matter of future research.

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