

# Restrictions on mixed agreement in Russian: Feature conflicts and ineffability in DM\*

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## 1 Introduction

### Mixed agreement in Russian

- In Russian, some grammatically masculine nouns can trigger feminine agreement if they denote a female individual.
- Mixed agreement is subject to **case number restrictions**. It is grammatical only if a noun has certain combinations of number and case.

- (1) Xoroš-**yj** / xoroš-**aja** vrač pridët zavtra.      (2) Ja vižu nov-**ogo** / \*nov-**uju** vrač-a.  
 good-M    good-F    doctor comes tomorrow      I see new-M.ACC    new-F.ACC doctor-ACC  
 ‘The good doctor will come tomorrow.’      ‘I see the new doctor.’

### Proposal

- On the basis of two empirical arguments, I suggest that case number restrictions are not due to agreement per se; they result from the feminine gender feature on the noun.
- In some cases, **insertion of a nominal inflection fails in the presence of an additional gender**.

### Gender and declension

- Restrictions on mixed gender agreement in Russian indicate that insertion of nominal exponent targets gender features.
- Gender alone is not sufficient to determine class. Declension arises from the combination **gender** ( $[\pm\text{fem}]$ ) and **an idiosyncratic feature of a root** ( $[\pm\alpha]$ ).

(3) Declension in Russian

I	$[-\text{fem}][+\alpha]$
II	$[\text{+fem}][-\alpha]$
III	$[\text{+fem}][+\alpha]$
IV	$[-\text{fem}][-\alpha]$

### Ineffability in morphology

- Insertion of a nominal exponent is impossible because of conflicting grammatical and semantic gender.
- Conflict can be resolved only by a syncretic underspecified exponent.
- Conflicting features leading to a crash in morphology have been attested cross-linguistically for different types of phenomena.

- See, e.g., Groos & van Riemsdijk (1981) on matching in free relatives; Zaenen & Karttunen (1984), Dalrymple et al. (2009), Asarina (2011) on right node raising; Citko (2005), Hein & Murphy (2019) on ATB-movement; Schütze (2003), Bhatt & Walkow (2013), Coon & Keine (2020) on agreement with two goals.

- In Distributed Morphology, Vocabulary insertion proceeds according to the Subset Principle that by its nature cannot fail to provide an exponent due to additional features (Halle, 1997).

- I would like to suggest the consistency condition:

**Inserted vocabulary item has no features that contradict features on the syntactic node.**

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\*Novel data on mixed agreement in Russian come from 5 native speakers. I am very grateful for their help. I also would like to thank Maria Kouneli and Gereon Müller for comments and suggestions.

## 2 Mixed agreement in Russian

### 2.1 Background

- In Russian, some profession-denoting nouns are grammatically masculine, but allow for feminine agreement if the referent is female (see Panov (1968), Mučnik (1971), Skoblikova (1971), Crockett (1976), Graudina et al. (1976), Corbett (1991), and Gerasimova (2019)).

(4) Xoroš-**ij** / xoroš-**aja** vrač    prinimaet tol'ko zavtra.  
good-M    good-F    doctor receives    only    tomorrow  
'The good doctor is available only tomorrow.'

(5) Vrač    prišol    /    prišl-**a**.  
doctor came.M    came-F  
'The doctor came.'

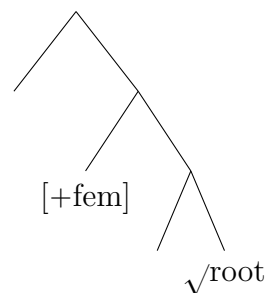
- Different agreement probes can bear different gender features:

(6) Xoroš-**yj** vrač    prišl-**a**.  
good-M    doctor came-F  
'The good doctor came.'

- The analyses of this phenomenon agree that there is an additional feminine gender feature in the noun phrase but differ with respect to where this feature is introduced.

- It may be on a dedicated functional projection (see Asarina (2009), Pesetsky (2013)),
- on the D head (see Pereltsvaig (2006), Steriopolo & Wiltschko (2010), King (2015), Lyutikova (2015), Steriopolo (2018)),
- on the Num head (see Landau (2016)),
- on the noun (as in Smith (2015, 2017), Puškar (2017, 2018), Salzmann (2018)),
- or on a nominal modifier directly (see Matushansky (2013), Čaha (2019)).

(7) Semantic gender



- Higher position of the feminine gender is often motivated by the following restrictions:
  - First, feminine agreement is not possible with low classifying adjectives.

(8) General'n-**yj** / \*gerenal'n-**aja** direktor opiat' kričit.  
general-M    general-F    director again yells  
'The executive director is again yelling.'

- Second, only the switch from masculine agreement on lower modifiers to feminine agreement on higher probes is allowed.

(9) a. ?Et-**a** nov-**yj** vrač    vsë    pereputal-a.  
this-F new-M doctor everything mix.up-F  
'This new doctor mixed everything up.'

b. \*Et-**ot** nov-**aja** vrač    vsë    pereputal.  
this-M new-F    doctor everything mix.up.M  
'This new doctor mixed everything up.'

- In what follows I will introduce a different type of restrictions on feminine agreement.

## 2.2 Case number restrictions

- Russian has 6 cases and 2 numbers. Feminine agreement is possible only in some of these forms.
- As shown above, feminine agreement is allowed in the nominative singular form.

(10) Xoroš-**aja**    vrač            prišl-**a**.  
 good-F.NOM doctor.NOM came-F  
 ‘The good doctor came.’

- Feminine agreement is ruled out if the noun is in singular and has any case other than nominative.
- Examples below show ungrammaticality of feminine agreement with a singular noun in the accusative, genitive, dative, locative, and instrumental case form.

(11) a. vižu nov-**ogo**    / \*nov-**uju**    vrač-a  
 see new-M.ACC    new-F.ACC doctor-ACC  
 ‘see the new doctor’  
 b. net nov-**ogo**    / \*nov-**oj**    vrač-a  
 no new-M.GEN    new-F.GEN doctor-GEN  
 ‘The new doctor is absent.’  
 c. k nov-**omu**    / \*nov-**oj**    vrač-u  
 to new-M.DAT    new-F.DAT doctor-DAT  
 ‘to the new doctor’  
 d. o    nov-**om**    / \*nov-**oj**    vrač-e  
 about new-M.LOC    new-F.LOC doctor-LOC  
 ‘about the new doctor’  
 e. s    nov-**ym**    / \*nov-**oj**    vrač-om  
 with new-M.INSTR    new-F.INSTR doctor-INSTR  
 ‘with the new doctor’

- Gender agreement in Russian is mainly restricted to singular forms, but *ob-a/e* ‘both-M/F’ shows it in plural as well.
- Gender is marked by the vowel that precedes regular case and number exponents:

(12) *ob-o-ih* ‘both-M-LOC.PL’ vs. *ob-e-ih* ‘both-F-LOC.PL’  
*ob-o-im* ‘both-M-DAT.PL’ vs. *ob-e-im* ‘both-F-DAT.PL’

- As observed by Pesetsky (2013), ‘both’ agrees in semantic feminine gender with a plural noun marked for cases other than nominative:

(13) a. vižu ob-**o-ix**            / ob-**e-ix**            vrač-ej  
 see both-M-ACC.PL    both-F-ACC.PL doctor-ACC.PL  
 ‘see both doctors’  
 b. net ob-**o-ix**            / ob-**e-ix**            vrač-ej  
 no both-M-GEN.PL    both-F-GEN.PL doctor-GEN.PL  
 ‘Both doctors are absent.’  
 c. k ob-**o-im**            / ob-**e-im**            vrač-am  
 to both-M-DAT.PL    both-F-DAT.PL doctor-DAT.PL  
 ‘to both doctors’  
 d. ob    ob-**o-ix**            / ob-**e-ix**            vrač-ax  
 about both-M/F-LOC.PL    both-F-LOC.PL doctor-LOC.PL  
 ‘about both doctors’

e. s ob-**o**-imi / ob-**e**-imi vrač-ami  
 with both-M/F-INSTR.PL both-F-INSTR.PL doctor-INSTR.PL  
 ‘with both doctors’

- The availability of feminine agreement in the nominative plural form cannot be tested, ‘both’ (as some numerals) requires the genitive singular form of the noun then.

(14) Ob-**a** / \*ob-**e** vrach-a prishli.  
 both-M both-F doctor-GEN came  
 ‘Both doctors came.’

**Summary:** Feminine agreement is possible in SG NOM and in PL  $\neg$ NOM.

- These restrictions are occasionally mentioned in the literature (see Pereltsvaig (2006), Matushansky (2013), and Gerasimova (2019)). Pesetsky (2013, 140) and King (2015) aim to account for them.
  - King (2015) suggests that the semantic gender feature is introduced in the D head that is absent in oblique case forms.

*Problems:*

- \* Absence / presence of the D head in the required forms is not supported by data.
- \* Semantic agreement is possible with oblique cases in the plural.

- Pesetsky (2013) suggests that in some cases feminine agreement is ungrammatical because an attempt to realize [+fem] on class I noun leads to the realization failure, while in other forms the modifier has no access to the feminine feature.

*Problems:*

- \* The analysis misses the generalization that all ungrammatical examples are due to the conflict in morphology, and this conflict is resolved by a syncretic exponent in all contexts, where the feminine agreement is allowed.
- \* Incompatibility between the declension class of profession-denoting nouns that trigger mixed agreement and the feminine feature is assumed rather than derived.

- I will present two novel observations showing that:

- **Ungrammaticality stems from the form of the noun, not agreement.**

## 2.3 Syncretism

- The difference between the forms where semantic agreement is allowed and the forms where it is ungrammatical lies in their morphological makeup.
- Four nominal declensions can be distinguished in Russian (see Timberlake (2004), see also Corbett (1982) for an extensive discussion of different classifications).

- Class I includes only grammatically masculine nouns.
- Class II predominantly consists of feminine nouns but also includes a small group of animate masculine nouns.
- Class III includes only feminine nouns.
- Class IV (sometimes labeled IB) consists of neuter nouns.

(15) Gender and declension in Russian

I	MASC
II	FEM, some animate MASC
III	FEM
IV	NEUTR

- Nouns that trigger mixed agreement belong to class I, i.e., to the declension class, where all nouns are morphologically masculine.

- Feminine semantic agreement is restricted to forms where exponents of class I were syncretic to exponents of class III that contains feminine nouns.
- Tables below present nominal inflectional exponents in Russian.<sup>1</sup>
  - The table does not show regular phonological alternations.
  - Exponents are used by animate nouns. For them, accusative coincides with genitive in the singular class I and in the plural. Inanimate nouns take nominative inflection in these forms.

(16) Nominal inflection: SG, animate

	I MASC	II FEM, MASC	III FEM	IV NEUTR
NOM	∅	a	∅	o
ACC	a	u	∅	o
GEN	a	i	i	a
LOC	e	e	i	e
DAT	u	e	i	u
INSTR	om	oj	ju	om

(17) Nominal inflection: PL, animate

	I MASC	II FEM, MASC	III FEM	IV NEUTR
NOM	i	i	i	a
ACC	ov	∅	ov	∅
GEN	ov	∅	ov	∅
LOC	ax	ax	ax	ax
DAT	am	am	am	am
INSTR	ami	ami	ami	ami

- In the singular:
  - Class I is syncretic to III in the nominative.<sup>2</sup>
  - Locative exponents in I and II are segmentally identical but differ in their accentual properties: The class II exponent is underlyingly stressed, the class I exponent is not (see Melvold (1989)).<sup>3</sup>
  - Class I is syncretic to IV in the genitive, locative, dative and instrumental, but class IV does not include feminine nouns.
- In the plural:
  - I, II, and III are syncretic in the nominative.
  - Classes I and III are syncretic in the accusative and genitive.
  - Inflection do not differentiate between classes in LOC, DAT, INSTR.

**Conclusion:** The correlation indicates that the restrictions are due to the inflection on the noun.

## 2.4 Ellipsis

- The case number restrictions do not hold under ellipsis:

(18) a. Vse pacienti žalovali<sup>5</sup> na nov-**ogo** / nov-**uju**.  
all patients complained on new-M.ACC new-F.ACC  
‘{Context: The previous doctor was great, while} all patients complained about the new one.’

b. O nov-**om** / nov-**oj** my ničego ne znam.  
about new-M.LOC new-F.LOC we nothing not know  
‘{Context: The previous doctor was great, while} we don’t know anything about the new one.’
- Assuming that the elided part of the sentence is syntactically present but exempt from Vocabulary insertion (see Merchant (2001), van Craenenbroeck & Merchant (2013), and Saab (2019) on nominal ellipsis), this shows that **it is insertion of a nominal form that causes ungrammaticality**.

**Conclusion:** Ungrammaticality arises from Vocabulary insertion of nominal inflectional exponents.

<sup>1</sup> Tables here do not describe inflection of some exceptions, They are discussed in Appendix B.

<sup>3</sup> See also Zaliznjak (2010) for the same contrast between these two exponents in Old Russian, and Müller (2004) for the suggestion that these are different affixes on the basis of other, theoretical, considerations

<sup>3</sup> Although all nouns in class III end in the soft consonant in the nominate singular, palatalization is not an exponent but a property of class III roots. It appears before other suffixes, for instance, before locative plural *-ax*, dative plural *-am*, instrumental plural *ami*, diminutive *-ka*, agentive *-ant/-jant*, diminutive *-ulja* (see examples in the Appendix A).

## 3 Gender in declension

### 3.1 The argument

#### Existing approaches

1. *Gender in declension*

Inflectional exponents traditionally viewed as expressing declension class realize gender combined with other features of nominal roots (see Roca (1989), Harris (1991), Wiese (2004), Wunderlich (2004), Caha (2019, 2020)).

2. *Gender → declension*

Declension and gender can be related only indirectly, e.g., by implicational redundancy rules (see Corbett (1982, 1991), Aronoff (1994), Alexiadou (2004), Müller (2004), Alexiadou & Müller (2008), Kramer (2015), Gouskova & Bobaljik (2021)).

3. *Very few gender in declension*

Gender participates in class inflection but its usage is restricted to a few exponents (see Halle (1992, 1994), Halle & Vaux (1998), Calabrese (2008), and to some extent Kučerová (2018)).

#### Case number restrictions

1. Feminine agreement contexts differ by **the presence of a feminine gender feature** in a noun phrase.
2. Restrictions are due to **inability to insert an inflectional exponent**.  
↔ Additional gender feature rules out insertion of a nominal inflectional exponent.
3. Feminine agreement is acceptable only in those cells of a paradigm where class I inflection is syncretic to class III. These exponents are **underspecified for gender**.

#### Results

1. **Gender in declension:** Case number restrictions are predicted if inflection targets gender features directly (see Roca (1989), Harris (1991), Wiese (2004), Wunderlich (2004), Caha (2019, 2020)).
  - Change in gender leads to change in inflection unless exponents are underspecified for gender. Here, the change does not result in insertion of another inflection but in ineffability.
2. The data cannot be accounted for if gender is connected to declension indirectly, e.g., by redundancy rules, or if the role of gender in class exponence is very restricted.
  - Implicational redundancy rules are by its nature feature-filling, i.e., they do not insert two class features (see Halle (1994), Aronoff (1994, 74), Kramer (2015, 239)).
    - Otherwise, elsewhere rules like [N, –Plural] → [class I] (see Aronoff (1994, 74)) cannot exist.
  - If in all cases only one class feature can be inserted and vocabulary insertion targets class features, there is no source for ungrammaticality.
  - If redundancy rules can supply two class features after all, in any form where class I exponent is syncretic on another class will be underspecified for class. This predicts possibility of feminine agreement in genitive, locative, dative, and instrumental singular forms where class I is syncretic to class IV.

## 3.2 Decomposition of declension class

### On gender

- I assume that there are two binary gender features  $[\pm\text{masc}]$  and  $[\pm\text{fem}]$ .

(19) Gender features in Russian

FEM	$[\text{+fem}][\text{-masc}]$
MASC	$[\text{-fem}][\text{+masc}]$
NEUTR	$[\text{-fem}][\text{-masc}]$

- Only  $[\pm\text{fem}]$  is relevant for insertion of declension class exponents.

### On declension class

- Class I with masculine nouns and class IV with neuter nouns share  $[\text{-fem}]$ .
- Classes II and III have  $[\text{+fem}]$ .
- Gender is accompanied by an idiosyncratic feature of a nominal root that is indicated as  $[\pm\alpha]$ .
- Class I and III share  $[\text{+}\alpha]$ .
- Class II and IV have  $[\text{-}\alpha]$ .
- Despite some previous attempts to connect a formal feature to phonological properties (see, e.g., Roca (1989)), I do not pursue this option here.

(20) Class feature specifications in Russian

Class	Gender of nouns	Decomposition
I	MASC	$[\text{-fem}][\text{+}\alpha]$
II	FEM, some animate MASC	$[\text{+fem}][\text{-}\alpha]$
III	FEM	$[\text{+fem}][\text{+}\alpha]$
IV	NEUTR	$[\text{-fem}][\text{-}\alpha]$

- Class II that bears  $[\text{+fem}]$  feature contains a small group of animate masculine nouns.
- They have no underlying gender specification and masculine agreement in syntax arises as a default for animate nouns.  $[\text{+fem}]$  feature is inserted by a rule at PF.<sup>4</sup>

### On trans-paradigmatic syncretism

- Exponents syncretic between classes are underspecified for features that distinguishes between them.
  - Affixes shared by class I and III are underspecified for gender and bear only  $[\text{+}\alpha]$ .
- Albeit the features used in the decomposition are different, the produced natural classes match those suggested by Müller (2004), Alexiadou & Müller (2008). They are argued to be best suited for capturing syncretism between declensions and produce the least possible number of exponents.

<sup>4</sup> Class II also includes so-called common gender nouns that depending on the context refer to a female and a male individual and trigger feminine or masculine agreement correspondingly. Such nouns do not bear an underlying gender, and a morphological rule supplies  $[\text{+fem}]$  feature required for inflection. If the semantic gender is feminine,  $[\text{+fem}]$  feature is introduced in syntax (as with the doctor-type nouns). This produces feminine agreement. If the denoted individual is masculine, no feature is introduced in syntax, and agreement is masculine by default.

**Further evidence:** augmenative *išč* (Švedova (1980, 213), Timberlake (2004, 146))

- Combined with feminine noun, it gives nouns of class II:<sup>5</sup>

- (21) a. king-a (FEM, class II) ‘book’ → *kniž-išč-a* (FEM, class II)  
 b. *graz*’ (FEM, class III) ‘mud’ → *gr’az’-išč-a* (FEM, class II)

- Combined is masculine or neuter (i.e., [-fem]), it produces nouns of class IV.

- (22) a. *gorod* (MASC, class I) ‘city’ → *gorod-išč-e* (NEUTR, IV class)  
 b. *selo* (NEUTR, class IV) ‘village’ → *sel-išč-e* (NEUTR, class IV)

- Assuming that the suffix is specified for [- $\alpha$ ], the class of the derived noun is this abstract feature combined with the gender of the original noun:

- (23) [+fem] and [- $\alpha$ ] → class II;  
 [-fem] and [- $\alpha$ ] → class IV.

## 4 Analysis

### 4.1 Sample derivation

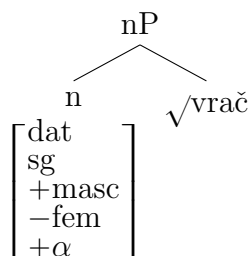
- Late-insertion model: Structures produced by syntax are subject to Vocabulary insertion in the post-syntactic morphology.
- Vocabulary insertion proceeds according to the Subset Principle (Halle, 1997).

(24) The Subset Principle:

- Compatibility:** The item matches all or a subset of the grammatical features.
- Specificity:** Where several vocabulary items meet the conditions for insertion, the item matching the greatest number of features must be chosen.

- In Russian, a single inflectional exponent cumulatively expresses nominal features: case, number, ‘class’ (i.e., gender and [ $\pm\alpha$ ]), and sometimes animacy.
- This implies that all relevant features must appear on one node in the structure that is subject to Vocabulary insertion.
  - For concreteness, let’s assume, it is  $n$ . Features can appear in this position due to agreement or Lowering, they can be also base generated there.
- Here I abstract away from decomposition of case; see Müller (2004) or Caha (2019) for some options.

(25) Dative singular, class I



(26) Vocabulary items

- $/e/ \leftrightarrow [\text{dat}][\text{sg}][+\text{fem}][-\alpha];$
- $/u/ \leftrightarrow [\text{dat}][\text{sg}][-\text{fem}];$
- $/i/ \leftrightarrow [\text{dat}][\text{sg}][+\text{fem}];$

**Exponent /u/ from (26b) is inserted!**

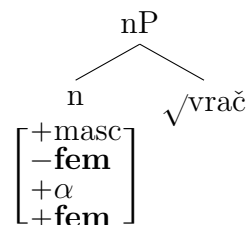
<sup>5</sup> In colloquial Russian, suffix *išč* attached to feminine nouns produces either feminine class II nouns (as in (21)) or neuter class IV nouns, cf. *kniž-išč-e*, *gr’az’-išč-e*. I suggest that variation is due to optional gender features [-fem][+masc] on the suffix. If they are present, declension of a derived noun is fully determined by features of the suffix.



## 4.2 Morphological conflicts and syncretism

- When class I nouns trigger feminine agreement, they bear the usual  $[-\text{fem}][+\text{masc}][+\alpha]$  features and also semantic gender  $[\text{+fem}]$ . Values of FEM feature **contradict** each other.

(27) Mixed agreement



- Contradictory features on one node are **tolerated by syntax** (see, e.g., Asarina (2011) and Coon & Keine (2020)).

- Ineffability arises in morphology:

**Vocabulary insertion fails to provide an exponent.**

- Patterns like this where conflicting features can be resolved

only by a syncretic form have been observed cross-linguistically for different types of phenomena; see, e.g., Groos & van Riemsdijk (1981) on matching in free relatives; Zaenen & Karttunen (1984), Dalrymple et al. (2009), Asarina (2011) on right node raising; Citko (2005), Hein & Murphy (2019) on ATB-movement; Schütze (2003), Bhatt & Walkow (2013), Coon & Keine (2020) on agreement with multiple targets.

- In (27), Vocabulary insertion is possible only if a lexical item is **underspecified for  $[\pm\text{fem}]$**  and compatible with  $[\text{+}\alpha]$ .

- Class I has  $[\text{+}\alpha]$ , but vocabulary items specific for this class have  $[-\text{fem}]$  as well. Lexical items that are syncretic between I and III are underspecified for the gender feature.

(28) Nominal inflection: SG, animate

(29) Nominal inflection: PL, animate

	I $[-\text{fem}][+\alpha]$	II $[\text{+fem}][-\alpha]$	III $[\text{+fem}][+\alpha]$	IV $[-\text{fem}][-\alpha]$
NOM	$\emptyset$	a	$\emptyset$	o
ACC	a	u	$\emptyset$	o
GEN	a	i	i	a
LOC	e	é	i	e
DAT	u	e	i	u
INSTR	om	oj	ju	om

	I $[-\text{fem}][+\alpha]$	II $[\text{+fem}][-\alpha]$	III $[\text{+fem}][+\alpha]$	IV $[-\text{fem}][-\alpha]$
	i	i	i	a
	ov	$\emptyset$	ov	a
	ov	$\emptyset$	ov	$\emptyset$
	ax	ax	ax	ax
	am	am	am	am
	ami	ami	ami	ami

- This is the case in the nominative singular and in the accusative and genitive plural:

- Exponents are syncretic between I and III, i.e., they are specified for  $[\text{+}\alpha]$  but not for the gender feature.

- (30) a.  $/\emptyset/ \leftrightarrow [\text{nom}][\text{sg}][+\alpha]$ ;  
 b.  $/\text{ov}/ \leftrightarrow [\text{acc/gen}][\text{pl}][+\alpha]$ ;

- This is also the case in the locative, dative, and instrumental plural forms, where the vocabulary items don't differentiate between classes.

- (31) a.  $/\text{ax}/ \leftrightarrow [\text{loc}][\text{pl}]$ ;  
 b.  $/\text{am}/ \leftrightarrow [\text{dat}][\text{pl}]$ ;  
 c.  $/\text{ami}/ \leftrightarrow [\text{instr}][\text{pl}]$ ;

- Exponents are also syncretic in the nominative plural but there is no data showing whether this form resolves the gender feature conflict.

- The remaining exponents are specific for I or syncretic to IV that are both  $[-\text{fem}]$ .

- (32) a.  $/\text{u}/ \leftrightarrow [\text{dat}][\text{sg}][-\text{fem}]$ .  
 b.  $/\text{om}/ \leftrightarrow [\text{instr}][\text{sg}][-\text{fem}]$ .

### 4.3 Ineffability

- As noted by Asarina (2011), morphological realization that is based on the Subset Principle cannot fail due to the presence of too many features.
- The Subset Principle imposes two conditions on a selected vocabulary item:
  - Compatibility: A vocabulary item cannot have features that are not present on a syntactic node.
  - Specificity: A vocabulary item must match as many features as possible.
- When there is an additional feature on a node and there is no more specific item matching this new feature as well, the ‘old’ item is predicted to be inserted.
- However, morphological ineffability resulting from additional features appears to be a robust pattern cross-linguistically (see references above).
- Existing approaches usually use the idea that conflicting features are kept in different feature structures co-existing in one syntactic node.
  - VI succeeds only if the best item for both feature structures is the same (see, e.g., Asarina (2011), Citko (2005), Coon & Keine (2020)).
- The difference here is that while inflection expresses number, case, ‘class’, but only gender will appear in the second feature structure.
- The best pick for such two structures will be always different.

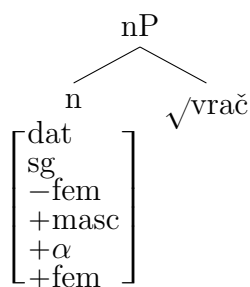
$$(33) \begin{bmatrix} \text{dat} \\ \text{sg} \\ -\text{fem} \\ +\text{masc} \\ +\alpha \end{bmatrix} [+fem]$$

#### Proposal

- All features appear in one feature structure.
- Vocabulary Insertion proceeds according to the Subset Principle.
- Additional condition holds between the inserted item and features in the node.

(34) **Consistency:** Vocabulary item has no features that contradict features on the syntactic node.

(35) Ineffability in morphology

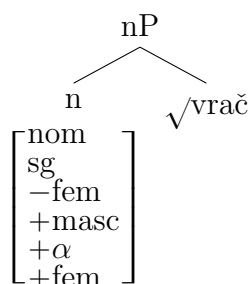


- ① Vocabulary insertion:  $\backslash u \backslash \leftrightarrow [\text{dat}][\text{sg}][-\text{fem}]$
- ② \*Consistency

The result is ineffable because **the inserted exponent has contradicting features.**

Due to **the ban on deletion of lexical material** it cannot be altered.

(36) Resolution by syncretism



- ① Vocabulary insertion:  $\backslash \emptyset \backslash \leftrightarrow [\text{nom}][\text{sg}][+\alpha]$
- ② *OK* Consistency

The result is grammatical because **the inserted exponent is underspecified for gender.**

## 5 Conclusion

### Summary of analysis

- The case number restrictions arise due to the conflict between the grammatical  $[-\text{fem}]$  and the semantic  $[\text{+fem}]$  gender features.
- Contradicting features block insertion of a vocabulary item specified for one of them and lead to ineffability in morphology.
- The conflict can be resolved by a syncretic underspecified exponent or by ellipsis under which Vocabulary insertion does not apply.

### Implications for declension class

1. Declension is **decomposed into gender and a formal feature of a root** (here,  $[\pm\alpha]$ ).
2. Inflectional exponents have **direct access** to gender features.
3. Nominal declensions in Russian have the following feature specifications:

(37) Declension in Russian

I	$[-\text{fem}][+\alpha]$
II	$[\text{+fem}][-\alpha]$
III	$[\text{+fem}][+\alpha]$
IV	$[-\text{fem}][-\alpha]$

### Implications for morphological component

- Conflicting features do not appear in the different features structures.
- The ineffability follows from the **consistency condition** that prohibits contradictory features.
- The problem of the default exponent does not arise because this condition applies after VI.

### Implications for mixed agreement

1. Semantic feminine gender is present in the extended projections of the noun.  
 $\leftrightarrow$  An argument **against introducing semantic gender only on a modifier** (see Matushansky (2013), Caha (2019))
2. Semantic gender appears on the same node as grammatical gender and other nominal features.
  - Recall that there are height restrictions on semantic feminine agreement:
    - (i) It is ungrammatical with low classifying adjectives;
    - (ii) The switch from the semantic agreement back to the grammatical masculine is ruled out.
  - Some approaches derive this restrictions from the height at which the feminine feature is introduced (see, e.g., Asarina (2009), Steriopolo & Wiltschko (2010), Pesetsky (2013), King (2015), Steriopolo (2018)), while others build on the Agree operation itself (see Smith (2015, 2017), Puškar (2017, 2018), Salzmann (2018), i.a.).  
 $\leftrightarrow$  Appearance of semantic and grammatical gender on the same node somewhat **undermines approaches that derive height restrictions from the position** where the feminine feature is introduced

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# Appendix

## A: Palatalization of class III roots

- Although all nouns in class III end in the soft consonant in the nominate singular, palatalization is not an exponent but a property of class III roots. It appears before other suffixes.
- Examples in (38) show that locative *ax* retain [ $\pm$ palatalized] feature of the final consonant of the root. The palatalization of a consonant that is before vowel is represented by *j*.
- Examples in (39) show that diminutive *-ka* preserves palatalization of final *n* and *l* (and it de-palatalizes other consonants). The palatalization of a consonant that is before other consonant is represented by an apostrophe.

- (38) a. Class II, [−palatalized]: *pčel-a* ‘bee-NOM’ → *pčěl-ax* ‘bee-LOC.PL’  
b. Class II, [+palatalized]: *kastrjul-ja* ‘pot-NOM’ → *kastrjul-jax* ‘pot-LOC.PL’
- (39) a. Class II, [−palatalized]: *pčel-a* ‘bee-NOM’ → *pčěl-k-a* ‘bee-DIM-NOM’  
b. Class II, [+palatalized]: *kastrjul-ja* ‘pot-NOM’ → *kastrjul'-k-a* ‘pot-DIM-NOM’

- Both affixes also preserve palatalization of class III roots.

- (40) Class III, [+palatalized]: *postel'* ‘bed’ → *postel'-jax* ‘bed-LOC.PL’  
(41) Class III, [+palatalized]: *postel'* ‘bed’ → *postel'-k-a* ‘bed-DIM-NOM’

## B: Exceptions

- Exceptions can be divided into three groups:
  1. Ten neuter nouns (*stremja* ‘stirrup’, *bremja* ‘burden’ etc.) take an exceptional exponent /a/ in the nominative and accusative singular, class III exponent /i/ in the genitive, locative, and dative singular, and class IV exponents in other forms. These nouns also augment /Vn/ to their stem in all forms except for the nominative and accusative singular.
  2. *Put'* ‘way’ is masculine but it is traditionally viewed as belonging to class III. It also takes synthetic class I and IV exponent /om/ in the instrumental.
  3. There is certain variability in the nominative and in the genitive plural forms: Some class I nouns take /a/ and /ø/, while some class IV nouns use /i/ and /ov/ in the nominative and in the genitive correspondingly; a few class II nouns ending in a palatalized consonant show /ov/ instead of /ø/ in the genitive plural.
- Possible approach:
  1. Following Caha (2019, 270-273), I assume that neuter nouns such as *stremja* ‘stirrup’ and *bremja* ‘burden’ belong to class IV but have two different exponents: exponent /a/ in the nominative and accusative, exponent /i/ in the genitive, locative, and dative. Nominative and accusative also lack /Vn/ augment that is added to roots of these nouns in other forms. I assume that this is because /a/ is a special exponent that is contextually specified as being used with these ten nouns, and it realizes case and number as well as features responsible for insertion of an augment in other forms.
  2. Contrary to traditional approaches I suggest that noun *put'* ‘way’ belongs to class I. The difference between *put'* and regular class I nouns can be reduced to one exponent /i/ that appears in the genitive, dative, and locative singular. This as well as the use of /i/ with neuter nouns discussed above can be derived by introducing an exponent that is used in the context of these eleven roots.

3. Variation in nominative and genitive plural forms can be captured by Readjustment Rules that overwrite original feature specifications and allow to use inflection from other declensions. Such rules can refer to semantic or phonological properties of roots; see Timberlake (2004) identifying some groups of exceptions by their semantics and Pertsova (2015) showing the influence of phonological factors.