

# Mixed agreement in Russian: Gender, declension, and morphological ineffability

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## Abstract

In this paper, I argue that declension classes are not primitives (see Aronoff (1994), Alexiadou (2004), Kramer (2015), i.a.), they are decomposed into simpler features, and gender is one of these features (Harris 1991, Wiese 2004, Caha 2019). The argument is based on mixed gender agreement in Russian, when a grammatically masculine noun can trigger feminine agreement if its referent is female (Mučnik 1971, Pesetsky 2013). Mixed agreement is grammatical only in those forms where a regular nominal exponent is syncretic to an exponent of a declension class that includes feminine nouns. In other forms, conflicting masculine and feminine gender features lead to ineffability in morphology (cf. Schütze (2003), Asarina (2011), Coon & Keine (2020)). Ineffability arises because the Subset Principle (Halle 1997) that holds between features of a vocabulary item and a terminal at the point of Vocabulary Insertion is violated later in the derivation. This is in turn possible if Vocabulary Insertion that applies cyclically bottom-up (Bobaljik 2000) is interleaved with Lowering that alters structure below a triggering node (Embick & Noyer 2001). Finally, I show that Russian also has a number of cases where conflicting gender features in a noun phrase do not result in a realization failure (Iomdin 1980). The difference between these patterns is derived in a principled way and follows from the positions where conflicting features are introduced.

**Keywords:** declension class, gender, mixed agreement, morphological ineffability, feature conflicts, Russian

## 1 Introduction

In some languages the shape of nominal inflection is determined not only by features like number and case but also by a declension class of a noun. Declension class can be defined as a group of roots taking the same set of inflectional exponents (see Aronoff (1994)). A class membership often correlates with a gender feature but there is no one-to-one correspondence between them. For instance, Russian has 3 genders and 4 declension classes (see Karcevskij (1932), Corbett (1982), and Timberlake (2004)). Gender specifications cannot be fully deduced from declension class membership. All class III nouns are feminine but class II includes both feminine and masculine nouns. Similarly, gender is insufficient to predict class. While all neuter nouns belong to class IV, feminine nouns are distributed over classes II and IV. Apart from that, a class membership and a gender feature are viewed as relevant for different processes in a language: Class determines nominal inflection, while (attributive and predicative) agreement targets gender.

In this paper, I would like to address the question of how declension class is connected to gender, what generates correlation but no correspondence between them. The existing literature provides several possible answers. According to the first view, declension classes are formed from bundles of features, and one of them is gender (see Roca (1989), Harris (1991), Wiese (2004),

Wunderlich (2004), Caha (2019; 2020)). Gender can be accompanied by phonological or formal features of a lexeme. Inflectional exponents traditionally viewed as expressing declension class then in fact realize gender combined with other features of nominal roots. According to the second position, class exponents do not bear gender features and the relation between declension and gender is captured only indirectly, for instance, by implicational redundancy rules. Under this view, there are either separate features corresponding to declension classes (as in Corbett (1982; 1991), Ralli (2000) Alexiadou (2004), Kramer (2015), Gouskova & Bobaljik (2021)) or class is decomposed into features not related to gender (see Müller (2004), Alexiadou & Müller (2008)). Finally, some approaches give the major role in forming declensions to separate class features but allow individual exponents to refer to gender in a very limited number of cases (see Halle (1992; 1994), Aronoff (1994), Halle & Vaux (1998), Calabrese (2008), and Kučerová (2018)).

The choice between these views was so far based on conceptual arguments such as elegance of a resulting model. In this paper, I would like to present an empirical argument for the first position. The argument is based on novel data on mixed gender agreement in Russian.<sup>1</sup> I will show that mixed agreement is subject to case number restrictions: It is grammatical only in some cells of the paradigm. The restriction is due to the inability to insert nominal exponents in the presence of an additional [+fem] feature. It indicates that insertion of nominal inflection targets gender features. Since gender alone is insufficient to determine declension classes, I suggest that declensions arise from the combination of gender ([±fem]) and an idiosyncratic feature of a nominal root ([±α]).

I will argue that the inability to insert a nominal exponent in some forms is a case of morphological ineffability: The morphological component fails to realize a structure supplied from syntax. Under mixed gender agreement, a problem for realization comes from the conflict between the grammatical and the semantic gender that can be resolved only if a form is syncretic and underspecified for gender. This phenomenon thus contributes to an already substantial body of evidence showing that features with conflicting values can result in a realization failure (see Groos & van Riemsdijk (1981), Zaenen & Karttunen (1984), Schütze (2003), Citko (2005), Dalrymple et al. (2009), Asarina (2011), Bhatt & Walkow (2013), Bjorkman (2016), Hein & Murphy (2019), Coon & Keine (2020) among others).

At the same time, Vocabulary Insertion that is governed by the Subset Principle (Halle 1997) as it is widely assumed in Distributed Morphology (see Halle & Marantz (1993; 1994), Harley & Noyer (1999), Siddiqi (2010)) cannot fail due the presence of an additional feature independently of whether this new feature contradicts other features in the node. In case no vocabulary item matches all features in the node, insertion resorts to an exponent that matches a subset of the features. I would like to propose that ineffability is derived as follows. First, Vocabulary Insertion applies to  $n$ , where case, number, grammatical gender, and [±α] are gathered, and inserts nominal inflectional exponent. Second, semantic gender that is introduced higher in the nominal structure but by virtue of belonging to the noun must be also incorporated in its feature structure lowers into  $n$ . If the lowered feature is more marked, it overwrites existing features, e.g., [+fem] replaces [−fem]. If the inserted vocabulary item is specified for such features, the subset relation between its features and features of the node into which it was inserted does not hold anymore. This leads to a crash.

Thus, ineffability is due to the violation of the Subset Principle that does not only underlie

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<sup>1</sup>Russian data presented in the paper was confirmed by 5 native speakers. They live in Moscow, and their age ranges from 25 to 57 years old.

Vocabulary Insertion but is essentially a well-formedness constraint that must hold throughout the derivation; see, e.g., Arregi & Nevins (2012) for using inviolable constraints in Distributed Morphology. The Subset Principle can be violated if features of a node are changed after Vocabulary Insertion applied. This turns out to be possible in a model where Vocabulary Insertion that applies cyclically bottom-up co-exists with the Lowering operation that alters features in the node below the trigger node. In contrast to the standard model where all morphological structure rules precede Vocabulary Insertion (Halle & Marantz 1993), I suggest that Vocabulary Insertion can be interleaved with Lowering; for other instances of interleaving Vocabulary insertion with morphological operations see Noyer (1992), Halle (1997), and González-Poot & McGinnis (2006) on Fission, Chung (2009) on Fusion, see also Dobler et al. (2011), Piggott & Travis (2017) on interleaving between Vocabulary Insertion and head movement.

According to this analysis, a contradictory feature will not lead to a realization failure if it is introduced lower in the structure and is incorporated into a node before Vocabulary Insertion. I will show that such derivations are attested in Russian with class II animate masculine nouns that have a conflict between masculine features triggering agreement in syntax and feminine gender realized by morphology as well as with so-called common gender nouns.

I will start with case number restrictions on mixed gender agreement in Russian in section 2, provide an argument for gender features in the decomposition of declension classes and decompose declensions in Russian in section 3, turn to an analysis of morphological ineffability in section 4, and summarize in section 5.

## 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)). *Vrač* ‘doctor’ is one of such nouns. In (1a), it indicates a female individual and can trigger attributive agreement for its grammatical masculine gender or for its semantic feminine gender.<sup>2</sup> Example (1b) shows that both grammatical and semantic agreement are also possible on the predicate.<sup>3</sup>

- (1) a. Xoroš-**ij** / xoroš-**aja** vrač prinimaet zavtra.  
 good-M.SG.NOM good-F doctor[I.SG.NOM] receives tomorrow  
 ‘The good doctor is available tomorrow.’
- b. Vrač prišël / prišl-**a**.  
 doctor[I.SG.NOM] came.M came-F  
 ‘The doctor came.’

In (2), two probes agreeing with the same noun bear distinct gender values and give rise to the mixed agreement.

<sup>2</sup>In this paper, I use the scientific transliteration; see the discussion and comparison of different transliteration systems in (Timberlake 2004:24-27).

<sup>3</sup>For the sake of simplicity, only the parts of examples that are relevant for the discussion are fully glossed. Glosses also do not represent syncretisms between cases and declension classes.

- (2) Xoroš-**ij**            vrač                    prišl-**a**.  
 good-M.SG.NOM doctor[I.SG.NOM] came-F  
 ‘The good doctor came.’

The analyses of feminine agreement with grammatically masculine nouns 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  $\phi$ P (see Sauerland (2004)), on the D head (see Pereltsvaig (2006), Steriopolo & Wiltschko (2010), King (2015), Lyutikova (2015), Steriopolo (2019)), on the Num head (see Landau (2016)), on the noun (as in Smith (2015; 2017), Puškar (2017; 2018), Salzmänn (2020)), or on a nominal modifier directly (see Matushansky (2013), Caha (2019)). The higher position of the feminine gender adopted in some of these approaches is motivated by height restrictions. First, feminine semantic agreement is impossible with low classifying adjectives:

- (3) General’**n-yj**            / \*gerenal’**n-aja**            direktor                    opiat’ kričit.  
 general-M.SG.NOM    general-F.SG.NOM director[I.SG.NOM] again yells  
 ‘The executive director is again yelling.’

Second, while the switch from masculine agreement on lower modifiers to feminine agreement on higher probes is (somewhat marginally) allowed, the reverse switch from feminine to masculine agreement is ruled out; cf. (4a) vs. (4b).

- (4) a. ?Èt-**a**            nov-**yj**            vrač                    vsë            pereputal-**a**.  
 this-F.SG.NOM new-M.SG.NOM doctor[I.SG.NOM] everything mixed.up-F  
 ‘This new doctor mixed everything up.’  
 b. \*Èt-**ot**            nov-**aja**            vrač                    vsë            pereputal.  
 this-M.SG.NOM new-F.SG.NOM doctor[I.SG.NOM] everything mixed.up.M  
 ‘This new doctor mixed everything up.’

In what follows I will abstract away from the height restrictions (see references above for possible analyses) and will introduce a different type of restrictions on mixed gender agreement in Russian – the case number restrictions.

## 2.2 Case number restrictions

Russian has six basic cases and two numbers, i.e., there are twelve cells in the nominal paradigm. Only few of these forms allow for semantic feminine agreement with grammatically masculine nouns. As shown in examples above, feminine agreement is possible in the nominative singular form; see also example (5).

- (5) Xoroš-**aja**            vrač                    prišl-**a**.  
 good-F.SG.NOM doctor[I.SG.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 in (6) show ungrammaticality of feminine agreement with a singular noun in the accusative, genitive, dative, locative, and instrumental case forms.

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

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

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

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

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

The availability of feminine agreement in the nominative plural form cannot be tested: If the noun phrase is in the nominative position, ‘both’ (as some numerals) requires the genitive singular form of the noun; see (9).

- (9) *Ob-a* / \**ob-e* *vrach-a* *prishli*.  
 both-M[SG.NOM] both-F[SG.NOM] doctor-I.SG.GEN came  
 ‘Both doctors came.’

To sum up, feminine agreement is possible in the nominative singular and in the plural non-nominative forms.

These restrictions are mentioned in the literature (see Pereltsvaig (2006), Matushansky (2013), Gerasimova (2019)), and Pesetsky (2013) and King (2015) aim to account for them. According to the analysis by King (2015), feminine gender is introduced in the D head that is present in the nominative but absent in other cases. Thus, the ungrammaticality of feminine agreement in oblique cases is due to the lack of the projection that can bear feminine gender. The underlying assumption about the distribution of the DP layer is however not supported empirically. Furthermore, since semantic agreement is possible with oblique cases in the plural, this analysis does not derive the full set of data.

According to the analysis by Pesetsky (2013), feminine gender is introduced in a functional projection above the noun and some of its modifiers. Gender probes that are higher in the structure then target this gender instead of the one on the noun. This derives the possibility of semantic feminine agreement. Feminine agreement can be ungrammatical for one of the two reasons: inability to realize [+fem] on class I nouns or inability of a modifier to get the feminine feature. In the first case, the feminine feature appears on the noun because the case assigning heads V, N, and P probe for gender and then assign it to the noun together with case. In the singular, the feminine feature on class I nouns, to which nouns such as *vrač* ‘doctor’ belong, results in a realization failure. This explains the ungrammaticality of feminine agreement in (6). In the plural, the feminine gender does not lead to a crash (see (8)) because all nouns are assigned to class I so that inflection realizing [+fem] is available. As for the nominative singular, where feminine agreement is allowed as well (see (5)), the noun does not receive the feminine feature: The D head that assigns nominative does not probe for gender and does not assign it to the noun. In the second case, modifiers do not show feminine agreement because they cannot access the feminine feature. This causes ungrammaticality in (9), where *ob-a* ‘both-M’ is in the nominative and the nouns is marked for genitive. Pesetsky (2013) suggests that ‘both’ is merged lower than the feminine gender so it agrees with the noun and gets masculine. Next, it head-moves to D that has no gender to assign. Note that the incompatibility between feminine gender and class I declension cannot derive this example because the noun does not receive the feminine feature. It shows genitive that under Pesetsky’s approach is the intrinsic case that surfaces in the absence of a case assigner. This means that there is no higher head that assigns case and could introduce the feminine gender here.

This analysis shares with an account that I will develop the idea that the unacceptability of the feminine agreement on a modifier can arise due to a morphological conflict on a noun. However, in the analysis by Pesetsky (2013), morphological properties are insufficient to derive the full set of data, and additional factors such as properties of the D head are employed. I would like to contend that this analysis misses a generalization about the distribution of the feminine agreement. In fact, 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. Moreover, in Pesetsky (2013), incompatibility between the declension class of profession-denoting nouns that trigger mixed agreement and the feminine feature is assumed rather than derived.

Before moving to my account in sections 3 and 4, I would like to present two novel arguments

showing that ungrammaticality stems from the inability to realize nominal inflection in morphology.

## 2.3 Syncretism

The first argument comes from the shape of nominal inflection. As mentioned above, Russian has 4 declension classes and the class membership often correlates with the gender of a noun. In particular, class I includes only grammatically masculine nouns. Class II predominantly consists of feminine nouns but also includes a group of animate masculine nouns.<sup>4</sup> Class III has feminine nouns, and class IV (labeled as Ib by Timberlake (2004)) consists of neuter nouns. The relation between gender and declension in Russian is summarized in (10).

(10) Gender and declension in Russian

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

Table in (11) presents nominal inflectional exponents in Russian. The table does not show regular phonological alternations even though sometimes they significantly change the shape of exponents. For instance, the genitive plural suffix /ov/ is realized as /ej/ after palatalized consonants. Also, the exponents given in (11) are used by animate nouns. For them, accusative coincides with genitive in the singular class I and in the plural. Inanimate nouns take inflection identical to the nominative in these forms.<sup>5</sup>

(11) Nominal inflection in Russian

	SG				PL			
	I MASC	II FEM, MASC	III FEM	IV NEUTR	I MASC	II FEM, MASC	III FEM	IV NEUTR
NOM	∅	a	∅	o	i	i	i	a
ACC	a	u	∅	o	ov	∅	ov	∅
GEN	a	y	i	a	ov	∅	ov	∅
LOC	e	e	i	e	ax	ax	ax	ax
DAT	u	e	i	u	am	am	am	am
INS	om	oj	ju	om	ami	ami	ami	ami

<sup>4</sup>Class II also includes so-called common gender nouns that can trigger agreement in masculine or in feminine gender depending on the gender of their referent. I would like to defer the discussion of these nouns till section 4, where a more elaborate empirical picture as well as the analysis of these nouns will be presented.

<sup>5</sup>Russian has three groups of exceptions to data in (11). First, ten neuter nouns (*stremja* ‘stirrup’, *bremja* ‘burden’, etc.) take an 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 stems in all forms except for the nominative and accusative singular. Second, *put’* ‘way’ is masculine but it is traditionally viewed as belonging to class III. It also takes a syncretic class I and IV exponent /om/ in the instrumental. Third, there is a certain variability in the nominative and in the genitive plural forms: Some class I nouns take /a/ and /∅/, 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 /∅/ in the genitive plural. I will sketch an analysis of these three cases of exceptional inflection in fn. 11.

Profession-denoting nouns that trigger feminine agreement belong to class I, i.e., a declension class where all nouns are grammatically masculine. By going through declensional exponents of Russian nouns, I will show that mixed gender agreement is grammatical if and only if a class I exponent is syncretic to an exponent of a class that includes feminine nouns.

In the singular, /ø/ is used as the nominative exponent in classes I and III. Note that although all nouns in class III end in a soft consonant in the nominative singular, palatalization is not a nominative singular exponent but a property of class III roots. It appears before other inflectional as well as derivational suffixes; see, for instance, the locative plural suffix /ax/ or the diminutive /ka/.<sup>6</sup> Examples (12) and (13) show that these affixes retain the [ $\pm$ palatalized] feature of the final consonant of the root. In (12a) and (12b), locative /ax/ is attached to class II nouns ending in a non-palatalized and in a palatalized consonant respectively. In both cases, the locative suffix does not alter the characteristics of the final consonant. The palatalization of a consonant that is before a vowel is represented by *j*.

- (12) a. [–palatalized]: *pčel-a* ‘bee-II.SG.NOM’ → *pčël-ax* ‘bee-PL.LOC’  
 b. [+palatalized]: *kastrjul-ja* ‘pot-II.SG.NOM’ → *kastrjul-jax* ‘pot-PL.LOC’

In examples (13a) and (13b), diminutive /ka/ attaches to these two nouns and the (non-)palatalization of the final consonant is again preserved.<sup>7</sup> Palatalization of a consonant that is before another consonant is marked by an apostrophe.

- (13) a. [–palatalized]: *pčel-a* ‘bee-II.SG.NOM’ → *pčël-k-a* ‘bee-DIM-II.SG.NOM’  
 b. [+palatalized]: *kastrjul-ja* ‘pot-II.SG.NOM’ → *kastrjul’-k-a* ‘pot-DIM-II.SG.NOM’

Diminutive /ka/ is attached to class III nouns in (14), and the final consonant remains palatalized. Similarly, it is palatalized before the locative suffix; see (15). This demonstrates that [+palatalized] is a feature of a root: Should it be the nominative singular inflection, it would not occur before these suffixes.<sup>8</sup>

- (14) [+palatalized]: *postel’* ‘bed[III.SG.NOM]’ → *postel’-k-a* ‘bed-DIM-II.SG.NOM’  
 (15) [+palatalized]: *postel’* ‘bed[III.SG.NOM]’ → *postel-jax* ‘bed-PL.LOC’

As a result, the third class nominative singular inflection is /ø/, and it is syncretic to the corresponding exponent in class I. In the singular, exponents of the locative case are also segmentally identical in classes I and II. They however differ in accentual properties: The class II exponent is underlyingly stressed, while the class I exponent is not; see Melvold (1989), see also Zaliznjak (2010) for the same contrast between these two exponents in Old Russian<sup>9</sup> and Müller (2004) for analyzing them as distinct vocabulary entries on the basis of independent conceptual considerations. Note that the underlying stress on the class 2 exponent and its absence on the exponent of

<sup>6</sup>Further affixes showing the same effect are agentive /ant/, diminutive /ulja/, dative plural /am/, and instrumental plural /ami/.

<sup>7</sup>Diminutive /ka/ preserves palatalization of final *n* and *l* and de-palatalizes other consonants.

<sup>8</sup>To derive vowel-zero alternations in certain environments in Russian, it is sometimes assumed that the underlying form of class I and class III nominative singular inflection is a short vowel that is deleted later (see Lightner (1965), Pesetsky (1979)). Given that this vowel is never overtly realized in this case, and palatalization is a property of a root as argued above, there are no reasons to assume that vowels used as nominative singular inflection in classes I and III are different.



class I does not imply that the former affix is always stressed while the later never bears accent. It means that if these affixes are attached to roots with the same accentual characteristics, a resulting stress pattern will differ in some cases. Due to this suprasegmental differences, I conclude that the class I locative exponent is not syncretic to the exponent of class II.

Consequently, in the singular, the nominative is the only form where an exponent of class I is syncretic to an exponent from a declension class that contains feminine nouns, and this is also the only form where the mixed feminine agreement is grammatical.

In the plural, class I exponents are identical to class III exponents in the accusative and genitive cases. Inflection also does not differentiate between classes in the locative, dative, and instrumental cases. Thus, in the plural, class I inflection is syncretic to inflection of at least one class with feminine nouns in all non-nominative forms, and as shown in section 2.2, mixed agreement is grammatical in all these forms. As for the nominative plural form, exponents from classes I, II, and III are identical so that mixed agreement is expected to be possible here as well. These data are however not available due to some traits in the noun phrase syntax of Russian; see (9).

To sum up, all nouns that can trigger feminine agreement are grammatically masculine and belong to declension class I that includes only masculine nouns. Feminine agreement is restricted to forms where exponents of this class are syncretic to exponents of class III that has feminine nouns. Thus, grammaticality of feminine agreement on a modifier depends on nominal inflection. This dependency indicates that the restrictions are due to inflection on a noun.

## 2.4 Ellipsis

The conclusion from the previous section is further supported by nominal ellipsis data. As shown in the examples below, the case number restrictions do not hold if the noun is elided. Example (16) presents a minimal pair: In (16a), the noun is in the accusative singular form, and the mixed feminine agreement is ungrammatical. In (16b), the noun is elided and the feminine agreement is allowed.

- (16) a. Vse pacienty žalovalis' na nov-**ogo** / \*nov-**uju** vrač-a.  
 all patients complained on new-M.SG.ACC new-F.SG.ACC doctor-I.SG.ACC  
 'All patients complained about the new doctor.'
- b. Vse pacienty žalovalis' na nov-**ogo** / nov-**uju**.  
 all patients complained on new-M.SG.ACC new-F.SG.ACC  
 '{Context: The previous doctor was great, while} all patients complained about the new one.'

The examples in (17)-(20) present such minimal pairs for other contexts where feminine mixed agreement is not acceptable in the presence of the noun and demonstrate that feminine agreement is grammatical under ellipsis; see (17) for the genitive singular, (18) for the dative, (19) for the locative, (20) for the instrumental.

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<sup>9</sup>According to Zaliznjak (2010), stress in contemporary Russian nominal inflection is better described by assigning nouns to one of twelve stress models, not by deriving the stress position from the underlying accentuation of a root and an inflectional suffix. At the same time, roots and derivational affixes have underlying accentual properties, and stress in the derived forms is based on them. This makes such a system highly redundant.

- (17) a. Net tol'ko nov-**ogo** / \*nov-**oj** vrač-a.  
 No only new-M.SG.GEN new-F.SG.GEN doctor-I.SG.GEN  
 'Only the new doctor is absent.'
- b. Net tol'ko nov-**ogo** / nov-**oj**.  
 No only new-M.SG.GEN new-F.SG.GEN  
 '{Context: All doctors are gathered.} Only the new one is absent.'
- (18) a. Daša ne pojdēt k nov-**omu** / \*nov-**oj** vrač-u.  
 Dasha not will.go to new-M.SG.DAT new-F.SG.DAT doctor-I.SG.DAT  
 'Dasha won't go to the new doctor.'
- b. Daša ne pojdēt k nov-**omu** / nov-**oj**.  
 Dasha not will.go to new-M.SG.DAT new-F.SG.DAT  
 '{Context: Dasha only trusts her usual doctor.} Dasha won't go to the new one.'
- (19) a. O nov-**om** / \*nov-**oj** vrač-e my ničego ne znamem.  
 about new-M.SG.LOC new-F.SG.LOC doctor-I.SG.LOC we nothing not know  
 'We don't know anything about the new doctor.'
- b. O nov-**om** / nov-**oj** my ničego ne znamem.  
 about new-M.SG.LOC new-F.SG.LOC we nothing not know  
 '{Context: The previous doctor was great, but} we don't know anything about the new one.'
- (20) a. Oni xotjat obsudit' èto s nov-**ym** / \*nov-**oj** vrač-om.  
 they want discuss this with new-M.SG.INS new-F.SG.INS doctor-I.SG.INS  
 'They want to discuss this with the new doctor.'
- b. Oni xotjat obsudit' èto s nov-**ym** / nov-**oj**.  
 they want discuss this with new-M.SG.INS new-F.SG.INS  
 '{Context: The previous doctor did not help so that now} they want to discuss this with the new one.'

The examples in (21) show that ellipsis has no effect in cases where feminine agreement is grammatical in the presence of the noun. Example (21a) illustrates this for the nominative singular form, and (21b) – for the accusative plural.

- (21) a. Xoroš-**ij** / xoroš-**aja** (vrač) ne pridet.  
 good-M.SG.NOM good-F.SG.NOM doctor[I.SG.NOM] not will.come  
 '{Context: The bad doctor came, and} a good (doctor) will not come.'
- b. Pacienty žalujutja na ob-**o-ix** / ob-**e-ix** (vrač-**ej**).  
 patients complain on both-M-PL.ACC both-F-PL.ACC doctor-I.PL.ACC  
 '{This doctor must be very good, but} the patients complain about both (doctors).'

Thus, the case number restrictions do not apply if the noun is elided. 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.

## 3 Gender in declension

### 3.1 The argument

In this section, we move from the data to how they inform our understanding of declension class and its relation to gender. Existing approaches (also discussed in section 1) capture the correlation between class and gender in different ways. According to one view, gender is one of the features into which declension is decomposed so that insertion of a nominal exponent that is traditionally considered class inflection in fact targets gender among other features (see Roca (1989), Harris (1991), Wiese (2004), Wunderlich (2004), Caha (2019; 2020)). According to another view, declensions are either not decomposed or decomposed into features other than gender (see Corbett (1982; 1991), Ralli (2000), Alexiadou (2004), Müller (2004), Alexiadou & Müller (2008), Kramer (2015), Gouskova & Bobaljik (2021)). The relation between declension and gender can be derived by the implicational redundancy rules that supply class on the basis of gender or gender on the basis of class. Note that redundancy rules can be also used under the first view (see Roca (1989) and Harris (1991)). The difference between the approaches is in whether redundancy rules are the only tool connecting gender and declension and in whether other (formal or phonological) features are targeted by Vocabulary Insertion together with gender or instead of it. Finally, some approaches that primarily rely on separate class features and essentially belong to the second type allow gender to participate in class inflection but its usage is restricted to a few exponents (see Halle (1992; 1994), Aronoff (1994), Halle & Vaux (1998), Calabrese (2008), and Kučerová (2018)).

The two views make different predictions about what a change to gender features on a noun leads to. If exponents are specified for gender directly, altering a gender specification on a noun will immediately affect insertion of exponents in several forms but crucially the change might not encompass all cells of the paradigm. It will not apply to exponents that are used with nouns of different genders and are therefore underspecified for it. Case number restrictions on mixed gender agreement in Russian display such an effect.

Under mixed gender agreement, a grammatically masculine noun has a female referent and triggers feminine agreement. Feminine agreement clearly indicates the presence of a feminine gender feature in a noun phrase, and there is almost a consensus in the literature that this feature is introduced in extended projections of a noun so that it can act as a goal for probes on nominal modifiers; see Pereltsvaig (2006), Asarina (2009), Steriopolo & Wiltschko (2010), Pesetsky (2013), King (2015), Lyutikova (2015), Smith (2015; 2017), Steriopolo (2019). Thus, mixed agreement presents a case of a change in gender specifications of a noun – the feminine gender feature is added. The data in the previous section also show that mixed gender agreement gives rise to case number restrictions, i.e., it is acceptable only in some cells of a paradigm. Ungrammatical forms are due to the inability to insert an inflectional exponent, and grammatical forms are characterized by syncretism of exponents used with masculine class I nouns and feminine class III nouns. These exponents are underspecified for gender.

Thus, mixed gender agreement in Russian once again confirms a connection between declension and gender: Insertion of a nominal class exponent becomes impossible in the presence of an additional gender feature. Furthermore, case number restrictions on mixed gender agreement are what is predicted if class exponents are directly specified for gender: Altering gender features results in ineffability unless exponents are underspecified for gender. This is because Vocabulary Insertion fails to provide an exponent for a node that contains contradictory features (masculine

and feminine gender); see Groos & van Riemsdijk (1981), Zaenen & Karttunen (1984), Schütze (2003), Citko (2005), Dalrymple et al. (2009), Asarina (2011), Bhatt & Walkow (2013), Bjorkman (2016), Hein & Murphy (2019), Coon & Keine (2020) for other cases where conflicting features result in ineffability. Ineffability arising due to conflicting gender features and their resolution by a syncretic exponent underspecified for gender will be derived in section 4.

For now, let's turn to how the observed effect differs from predictions made by approaches where class exponents are not specified for gender or its use is radically restricted to a few exponents. The connection between gender and declension can be then viewed as accidental but this position is obviously falsified by case number restrictions because the change in gender features affects class inflection. Alternatively, there are implicational rules that connect declension and gender. If so, altering gender specification of a noun can potentially lead to a change in a class feature that is supplied by a rule and targeted by Vocabulary Insertion so that the change in gender can also result in differences in nominal inflection.

To identify how the change in inflection can look like, I will have a closer look at rules that are used to connect gender and declension (see Halle (1990), Halle & Marantz (1994), Halle (1992; 1994), Aronoff (1994), Halle & Vaux (1998), Kramer (2015), Kučerová (2018), Gouskova & Bobaljik (2021)). These rules are redundancy rules as they have been proposed in phonology (see, for instance, Jakobson & Halle (1956) and Chomsky & Halle (1968: 171)). They supply a new feature on the basis of features that are already present but cannot replace existing features or insert a second feature of a given type. At the same time, as rules of Vocabulary Insertion in Distributed Morphology (see Halle (1997)), they apply according to specificity: If a context for more than one rule is met, only the more specific rule applies. Thus, one noun will never have more than one class feature in a model, where class features are inserted by such feature-filling rules. I will exemplify these properties by redundancy rules that were suggested for Russian in Aronoff (1994).

Aronoff (1994) assumes a system with three classes. Class I includes both masculine and neuter nouns that in the system employed here belong to classes I and IV respectively. Classes II and III are the same as in this paper: Class II mainly has feminine nouns and some animate masculine nouns. Class III includes only feminine nouns. Realization rules are conditioned by features I, II, and III that directly match these classes. Differences in inflection of masculine and neuter nouns that arise in the nominative and in the accusative singular are captured by inclusion of both class and gender in specifications of these affixes. Differences between declensions in the plural are neglected: All plural nouns are viewed as belonging to a separate (fourth) declension class. Class and gender are connected by the three redundancy rules given in (22).

- (22) a. [N, Feminine] → [class II];  
b. [N] → [class I];  
c. [N, class III] → [Feminine].

The rule in (22a) applies to feminine nouns, while the rule in (22b) applies to all nouns. If a noun is feminine and does not have a class feature, contexts for both rules are met so that one might expect insertion of two declension class features. In fact, only the feature that is supplied by the more specific rule is inserted. It is the class II feature. This demonstrates that the rules in (22) are not used for insertion of two class features simultaneously. These rules also do not apply if a class feature is prespecified. For instance, class III nouns have a declension feature from the lexicon,

and the rule in (22b) does not apply to them even though the context for its application is formally met.

The inability to supply two class features or alter an existing specification is by no means unique to the approach by Aronoff (1994). It is a defining property of class-filling redundancy rules used to relate gender and declension; among others see Halle & Vaux (1998: 224) for an Elsewhere rule in Latin or Kramer (2015: 239) for such a rule in Spanish. This inability to insert two class features defines what effect a change in gender might have on inflection in this type of approaches. To keep my argument general, I will not make assumptions about which redundancy rules and prespecifications on nouns Russian has. By going through different scenarios, I will show that case number restrictions cannot be derived if gender and declension are connected by redundancy rules.

Suppose a noun is prespecified for a declension class feature. Then, redundancy rules are not able to insert a new class feature independently of whether the additional gender feature creates a context for this. This is because redundancy rules do not apply if a class feature is already present. Thus, the change in gender specification on a noun cannot influence inflection in this case.

In the next scenario, a noun is not prespecified for declension, but the new gender feature is not referenced by redundancy rules. Then, again, nominal exponents remain the same: A class feature will be inserted based on the usual gender, and this class feature will be targeted by Vocabulary Insertion.

Then, suppose that nouns are not prespecified for class, and the new gender is targeted by a redundancy rule. This means that the context is met for two rules. The application of both will however contradict the nature of the redundancy rules that do not introduce two class features. Independently of which of the two rules carries out insertion of a class feature, the result will differ from the pattern attested with the mixed gender agreement in Russian. If a class feature is inserted based on the usual gender feature, no change in inflection is predicted. If the class feature is inserted based on the new gender, inflection from another declension will be used throughout the paradigm. This does not provide a source for ineffability in any cells of the paradigm.

To sum up, in approaches that only employ feature-filling redundancy rules to capture the connection between gender and class, an additional gender feature either does not lead to a change in inflection or triggers insertion of different exponents in all forms. This differs from the case number restrictions arising in the presence of an additional gender feature in Russian, where the additional feature leads to ungrammaticality in some forms, but regular exponents are used in others. The later forms are characterized by syncretism between declension classes: The inserted exponent is also used by a class that includes nouns of a different gender.

Finally, for the sake of the argument, let's assume that contrary to the nature of redundancy rules two class features are inserted. Since inflection under mixed gender agreement is impossible unless classes I and III are syncretic, the inserted class features must be I and III. Note that existing approaches relying on implicational rules supply class II on the basis of the feminine gender, while class III is prespecified on nouns (see Aronoff (1994), Halle (1994)). This is based on the composition of Russian lexicon: Class II is significantly larger than class III. Nevertheless, let's say that class III is inserted due to the feminine feature and class I – due to the masculine feature. Then, morphological conflict will lead to the realization failure in forms where these classes require different inflection, and exponents syncretic between them must be unspecified for class altogether to resolve the conflict.

Complete absence of class features in syncretic forms makes it impossible to derive forms

where two (or more) declensions have the same inflection. For instance, a class I affix is identical to a class III affix and class II – to class IV in the accusative and genitive plural. Also, class I is the same as class IV and class II – as class III in the genitive singular. If identical inflection is analyzed as true syncretism rooted in features as it is required for the syncretism between classes I and III to account for case number restrictions, both the class I/III exponent and the class II/IV exponent must be unspecified for class. If so, the distribution between them cannot be derived. Thus, assumptions that are required to account for the resolution by syncretism under mixed gender agreement make it impossible to account for the distribution of nominal exponents in general.

This further indicates that approaches employing primitive class features are poorly equipped to capture transparadigmatic syncretism, i.e., syncretism between declension classes. For such approaches, one could assume that all instances of transparadigmatic syncretism are in fact accidental homonymy, but case number restrictions provide a clear evidence that this type of syncretism is not different from, e.g., case syncretism in its capacity to resolve feature conflicts and must be therefore reflected in feature specifications of vocabulary items (see Zaenen & Karttunen (1984), Ingria (1990), Dalrymple & Kaplan (2000), Asarina (2011), and also Pullum & Zwicky (1986) on ambiguity vs. neutrality).

I conclude that case number restrictions are predicted if Vocabulary Insertion targets gender features directly but not if gender and declension are unrelated or related by feature-filling redundancy rules. Mixed gender agreement in Russian provides an argument for gender being present in the decomposition of class.

### 3.2 Decomposition of declension classes in Russian

This section provides a decomposition of declension classes in Russian. Since gender participates in the decomposition, I will start with my assumptions about it.

I suggest that three genders in Russian are formed by two binary features:  $[\pm\text{fem}]$  and  $[\pm\text{masc}]$ . Grammatically feminine nouns have  $[\text{+fem}][\text{–masc}]$ , grammatically masculine nouns are  $[\text{–fem}][\text{+masc}]$ , and neuter nouns are specified as  $[\text{–fem}][\text{–masc}]$ .

(23) Gender features in Russian

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

Out of the two gender features only  $[\pm\text{fem}]$  is targeted by declension class exponents. As shown in the introduction, gender alone is not enough to fully determine declension class, i.e., it must be accompanied by other features. I would like to propose that declension arises from the combination of a gender feature and an idiosyncratic feature of a nominal root that is indicated as  $[\pm\alpha]$ .<sup>10</sup> The table in (24) provides specifications of declension classes in Russian. Class I with masculine nouns and class IV with neuter nouns share the  $[\text{–fem}]$  feature. Classes II and III include feminine nouns, and both have  $[\text{+fem}]$ . Classes I and III share  $[\text{+}\alpha]$ . Classes II and IV have  $[\text{–}\alpha]$ .

<sup>10</sup>Caha (2020) argues that features like  $[\pm\alpha]$  as well as primitive declension class features I/II/III/etc. cannot be part of the grammar. Such features are arbitrary and language-specific. Therefore, they cannot be in Universal Grammar; their presence weakens grammatical theory. I see no reason why formal features like  $[\pm\alpha]$  or primitive class

## (24) Class feature specifications in Russian

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

Exponents that appear only with nouns of one class (e.g., the class III instrumental exponent /ju/) have a full class specification, while exponents syncretic between declensions are underspecified for features that differentiate between these classes. For instance, the instrumental exponent /om/ is used with class I as well as class IV nouns that differ in their values of feature  $[\alpha]$ . This means that that /om/ is underspecified for  $[\pm\alpha]$ . Exponents syncretic between classes II and III are also underspecified for  $[\pm\alpha]$ . Suffixes shared by nouns from classes I and III or classes II and IV are specified for  $[\pm\alpha]$  but do not have a  $[\pm\text{fem}]$  feature. Note that although the features participating in decomposition are different, the natural classes produced this way match those suggested by Müller (2004) and Alexiadou & Müller (2008). They are argued to be best suited for capturing transparadigmatic syncretism in Russian because the least possible number of exponents is required.<sup>11</sup>

Recall that nouns triggering mixed gender agreement belong to class I. According to this decomposition of declension classes, class I nouns realize  $[-\text{fem}]$  by its inflection. This is in line with the grammatical masculine  $[-\text{fem}][+\text{masc}]$  gender of such nouns but contradicts their semantic feminine gender ( $[\text{+fem}][-\text{masc}]$ ). As a result, nouns like *vrač* ‘doctor’ have conflicting values of  $[\text{fem}]$  feature. This makes the derivation ineffable unless an exponent regularly used in a given form is underspecified for gender and consequently syncretic between classes I and III.

Note also that class II that is decomposed into  $[\text{+fem}]$  and  $[-\alpha]$  includes a small group of

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features cannot be part of Universal Grammar. First, they are arbitrary because semantic or phonological properties of lexemes do not fully determine the distribution of these features. This is perfectly natural for grammatical features, cf. grammatical gender that also has no clear correlate and is arbitrary in the same way. Second, these features are language-specific because they determine nominal inflection in specific languages. Neither nouns in, for instance, class I nor inflection of this class in one language share properties with class I nouns or their inflection in another language. This is again not surprising given that nouns in class I do not share anything but their membership in this class, and the correspondence between grammatical features and their phonological realization is known to be arbitrary as least since Saussure’s “Course in General Linguistics”. I conclude that formal features like  $[\pm\alpha]$  or I/II/etc. can be in UG. Their shape and number must be established by typological research. A task of native speakers is to identify how many of them are present in their language and how they correspond to observed inflection patterns. In this way, these features acquire their language-specific use.

<sup>11</sup>Here, I will show how the exceptional cases presented in fn. 5 can be handled under this analysis of declension classes. First, 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 the /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 the augment in other forms. Second, contrary to traditional approaches I assume 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 roots. Third, a 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.

nouns that denote male individuals and trigger masculine agreement in syntax. I would like to suggest that this is an instance of deponency, a phenomenon known due the group of Latin verbs that show passive morphology but are active in syntax. Generally, deponency is defined as a mismatch between syntactic properties and morphological realization; see Embick (2000), Stump (2007), Müller (2013). Class II masculine nouns are deponent because they are masculine ([+masc][−fem]) syntactically but they realize a contradicting [+fem] feature morphologically. Thus, nouns have contradicting [−fem] and [+fem] features, exactly as profession-denoting class I nouns that give raise to mixed agreement. Masculine class II nouns are however not subject to case number restrictions; realization of their inflection is not dependent on the transparadigmatic syncretism and underspecification of exponents. The difference between two cases is due to the position of conflicting features in the structure and will follow from the analysis of morphological ineffability developed later in section 4.

### 3.3 Further evidence: Augmentative *išč*

The decomposition of Russian declensions in (24) is further supported by the interaction between class and gender in nouns with the augmentative suffix *išč*. If the affix is attached to a noun, the class of a derived noun is dependent on the original gender of the noun (see Švedova (1980: 213), Timberlake (2004: 146)). In (25), the suffix appears on feminine (i.e., [+fem]) nouns that belong to different declension classes: (25a) shows a noun from class II, and a noun in (25b) belongs to class III. In both cases, the derived noun is feminine, and it bears class II inflection.

- (25) a. *knig-a* (FEM, class II) ‘book’ → *kníž-išč-a* (FEM, class II)  
 b. *graz’* (FEM, class III) ‘mud’ → *gr’az’-išč-a* (FEM, class II)

In (26), *išč* attaches to non-feminine (i.e., [−fem]) nouns. The noun in (26a) is originally masculine and belongs to class I; the noun in (26b) is neuter and belongs to class IV. In both cases the noun with suffix *išč* is neuter and takes inflection of class IV nouns.

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

If *išč* is specified for [− $\alpha$ ] but has no gender feature, the declension of the derived noun follows directly from the combination of this formal feature and a gender of the original noun: [− $\alpha$ ] and [+fem] in (25) produce a feature specification of class II, [− $\alpha$ ] and [−fem] in (26) give a feature specification of class IV.<sup>12</sup>

To sum up, in this section I have discussed which effect a change in gender specifications of a noun can have on its inflection and shown that the pattern predicted by approaches where inflection targets gender directly is the one that is empirically attested under mixed gender agreement in Russian. Next, I have presented a decomposition of declensions in Russian under which classes are build from two binary features: gender [ $\pm$ fem] and formal feature [ $\pm\alpha$ ]. In the following section, I will turn to morphological realization and show how conflicting features can lead to

<sup>12</sup>In colloquial Russian, attachment of the suffix *išč* to feminine nouns can be also produce class IV neuter nouns; cf. *knig-a* → *kníž-išč-e*, *gr’az’* → *gr’az’-išč-e*. I suggest that in this case the suffix is also specified for gender [−fem][+masc] so that derived nouns are fully determined by features of the suffix, and the gender of the original noun plays no role.



ineffability and how the conflicts can be resolved by a syncretic exponent.

## 4 Ineffability in morphology

### 4.1 Subset Principle

I adopt the framework of Distributed Morphology, according to which structures produced in syntax undergo morphological realization in a post-syntactic component (see Halle & Marantz (1993; 1994), Harley & Noyer (1999), Siddiqi (2010)). In the course of this, Vocabulary Insertion matches bundles of features in terminal nodes to Vocabulary items. Vocabulary Insertion applies according to the Subset Principle proposed by Halle (1997); see (27). The Subset Principle requires that features of a vocabulary item match as many features present in a syntactic terminal as possible and that a vocabulary item does not introduce new features. Thus, features of the vocabulary item must either be identical to features on the terminal or be their subset.

(27) Subset Principle (Halle 1997:128)

The phonological exponent of a vocabulary item is inserted into a morpheme in the terminal string if the item matches all or a subset of the grammatical features specified in the terminal morpheme. Insertion does not take place if the vocabulary item contains features not present in the morpheme. Where several vocabulary items meet the conditions for insertion, the item matching the greatest number of features specified in the terminal morpheme must be chosen.

Vocabulary Insertion that is based on the Subset Principle cannot fail because of the presence of an additional feature. To illustrate this, consider the following case: Node  $N_1$  has features  $[+\alpha][-\beta]$ . Vocabulary Insertion finds item  $I_1$  with specification  $[+\alpha][-\beta]$ , that is, the vocabulary item matches all features on the node. Node  $N_2$  differs from  $N_1$  in that it also has feature  $[f]$ . The type and the value of  $[f]$  play no role. It can be  $[-\alpha]$ ,  $[+\beta]$ , or a new feature  $[\pm\gamma]$ . If there is vocabulary item  $I_2$  specified as  $[+\alpha][-\beta][f]$ , it will be inserted into  $N_2$  in accordance with the Subset Principle. If there is no such item,  $I_1$  will be chosen: Features of this vocabulary item are a subset of features on  $N_2$ , and the selected item is most specific for a given context. Thus, if there is a new feature on a node, and there is no more specific item that would match this new feature too, the ‘old’ vocabulary item will be inserted. Independently of the identity of a new feature, Vocabulary Insertion succeeds.

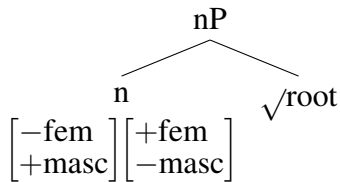
At the same time, morphological ineffability that is due to the inability to provide an exponent for a node with conflicting features and that gets resolved by a syncretic exponent is attested for various phenomena cross-linguistically; see, e.g., Groos & van Riemsdijk (1981) on matching in free relatives, Taraldsen (1981) on topicalization, Zaenen & Karttunen (1984), Dalrymple et al. (2009), Asarina (2011) on right node raising, Schütze (2003), Bhatt & Walkow (2013), Bjorkman (2016), Coon & Keine (2020) on predicative agreement with multiple targets, Citko (2005), Hein & Murphy (2019) on ATB-movement. This poses a dilemma: On the one hand, data show that ungrammaticality in some forms stems from the failure in morphological realization. On the other hand, the model of morphology does not provide a reason for a crash.<sup>13</sup> Most of the approaches

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<sup>13</sup>Being interpretive in nature, Distributed Morphology encounters the same problem in the analysis of paradigm

that model how conflicting features lead to ineffability share two ideas. First, conflicting features cannot co-exist within a single feature structure. They have to be stored in two separate structures that in turn can co-exist on one node, as shown in (28) for conflicting gender features.

(28) Conflicting gender features



Second, Vocabulary Insertion applies to each feature structure separately. A derivation converges only if outputs happen to be phonologically identical and fails otherwise. Outputs are the same if the inserted vocabulary item is underspecified for conflicting features and is hence syncretic between at least two cells in a paradigm. Analyses differ in their hypotheses about what is a formal reason for the crash. For instance, Asarina (2011) postulates that distinct insertion rules cannot spell out material on a single node. Bjorkman (2016) suggests that two different vocabulary items on one node are morphologically uninterpretable. Coon & Keine (2020) propose that ineffability arises because morphology must pick one of the two selected items but it cannot do so. Essentially, all of these approaches impose a well-formedness constraint on the result of Vocabulary Insertion.

Cases of morphological ineffability with mixed gender agreement in Russian differ in that a noun does not have two full feature structures. It has two conflicting gender specifications but only one number feature and only one case feature. Encountering a similar issue, Asarina (2011) proposes that all features except for conflicting ones must be copied from one feature structure and inserted into another.

Such a duplication of features is not required under the approach developed by Hein & Murphy (2019). They propose an operation of intersection. It applies to two feature structures and produces one structure. If original structures have features with conflicting values, the value for this feature will be absent in the unified feature structure:  $[+\text{fem}] \cap [-\text{fem}] \Rightarrow [\text{fem}]$ . Vocabulary Insertion of an item that is specified for this feature then introduces a new feature and thereby violates the Subset Principle. The analysis was developed for the ATB-movement in Polish and given vocabulary items provided for Polish interrogative pronouns by Hein & Murphy (2019), it correctly derives the data. However, more generally the analysis runs into problems if there is a default maximally underspecified vocabulary item because it can be always inserted without introducing new features.

In what follows, I will present the analysis of morphological ineffability. As in most of existing approaches, under this analysis ineffability arises because of an inviolable well-formedness constraint on morphological realization, but unlike in previous approaches, here it is not a conceptually novel constraint postulated specifically for configurations with conflicting features, it is the Subset Principle.

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gaps; see Halle (1973), Baerman (2011).

## 4.2 Interleaving Lowering and Vocabulary Insertion

I would like to suggest that a derivation is ineffable if the subset relation between features of a vocabulary item and a terminal that holds when Vocabulary Insertion applies is destroyed later in the derivation. This is possible if Vocabulary Insertion can be interleaved with Lowering. The analysis is based on two major assumptions.

First, the Subset Principle is re-qualified from a procedural restriction on Vocabulary Insertion into a constraint that holds after a vocabulary item is inserted; see Arregi & Nevins (2012) for other examples of employing inviolable constraints in Distributed Morphology.

(29) Subset Principle (revised)

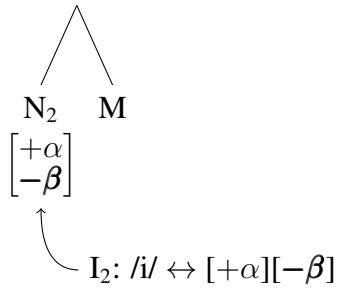
For a vocabulary item with feature set  $F_1$  inserted in a terminal with feature set  $F_2$ ,  $F_1 \subseteq F_2$ , and there is no vocabulary item with feature set  $F_3$  so that  $F_1 \subset F_3 \subseteq F_2$ .

Second, Vocabulary Insertion is interleaved with Lowering. According to the standard view morphology consists out of multiple modules so that the whole structure or its sizable part (e.g., a phase as understood in Chomsky (2000), Chomsky (2001)) is subject to rules from one block (e.g. morphological structure rules), and only after operations from this block have applied to the top-most node, operations from the next block (e.g., Vocabulary Insertion) can start applying. They are processing the structure anew, starting again from the bottom (see Halle & Marantz (1993), Arregi & Nevins (2012)). As a consequence, all Lowering operations apply before Vocabulary Insertion can start applying. Here, I would like to at least partially depart from this modular architecture within morphology and suggest that morphology is a single module that processes a structure supplied by syntax from bottom to top. Morphological operations are still ordered so that, for instance, Impoverishment of a feature on a node applies before Vocabulary Insertion into this node but Vocabulary Insertion into the bottom node does not have to wait till Impoverishment has applied to the top node; cf. Noyer (1992), Halle (1997), and González-Poot & McGinnis (2006) on interleaving Vocabulary Insertion and Fission, Chung (2009) on Vocabulary Insertion and Fusion, and also Dobler et al. (2011) and Piggott & Travis (2017) on Vocabulary insertion and head movement. In result, Lowering can counterfeed Vocabulary Insertion. Lowering is a head-to-head downward movement that alters the structure lower in the tree (see Embick & Noyer (2001)). Vocabulary Insertion, on the contrary, applies bottom-up (see Bobaljik (2000), Myler (2017)). Under this approach, Lowering can target nodes to which Vocabulary Insertion has already applied. If Lowering is followed by Fusion that unifies two sister nodes into one (see Halle & Marantz (1993) and also Kramer (2016a) for examples of Fusion applying after Lowering), this allows to change features of a node after Vocabulary Insertion has applied to it.

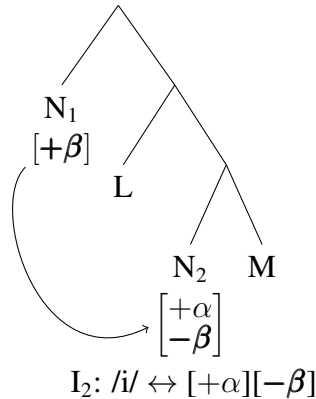
Consider the following derivation. In the first step given in (30), node  $N_2$  undergoes Vocabulary Insertion, and vocabulary item  $I_2$  is inserted. Features of  $I_2$  fully match features of the terminal. After this, morphological computation continues, and encounters node  $N_1$ . It has to lower to  $N_2$ , as shown in (31). After Lowering,  $N_1$  and  $N_2$  undergo Fusion. I assume that in the course of Fusion a feature set of one node is incorporated into a feature set of another. If original sets have same features with contradictory values, they cannot be both in the resulting feature set, but the more marked feature overwrites the less marked one; cf. a ban against conflicting features in a well-formed feature sets in (Stump 2001:41). For binary gender features, I assume that a feature with a positive value is more marked than a feature with a negative value, i.e.,  $[+\beta]$  overwrites  $[-\beta]$ ; cf. Noyer (1992), Nevins (2007), as well as Weisser (2018) on markedness with binary features. The

resulting structure is provided in (32). Here, the Subset Principle is violated because the inserted vocabulary item is specified for  $[-\beta]$  that is not present in the node. Vocabulary Insertion applies to the terminals only once so that the inserted exponent cannot be altered at this stage; see Embick (2010: 23). The violation of the Subset Principle leads to a crash.

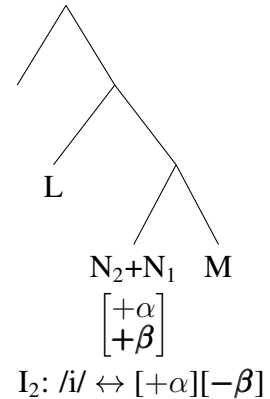
(30) Vocabulary Insertion



(31) Lowering

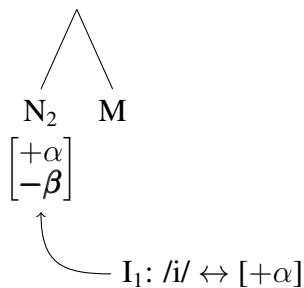


(32) Subset principle – \*

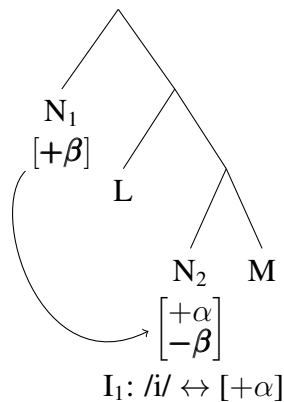


A similar derivation does not lead to ineffability if there is no vocabulary item fully matching the features of  $N_2$ , and vocabulary item  $I_1$  underspecified for  $[\pm\beta]$  is inserted; see (33). In this case, a change in the value of  $[\beta]$  does not result in the violation of the Subset Principle; see (35). A feature conflict is resolved by a syncretic underspecified exponent.

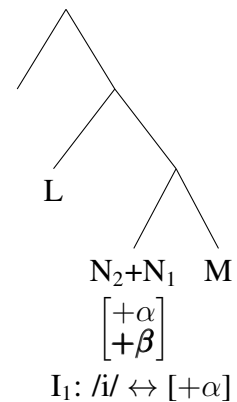
(33) Vocabulary Insertion



(34) Lowering



(35) Subset principle – OK



While this model allows Lowering to counterfeed Vocabulary Insertion, it is clearly not the case for all instances of Lowering. First, in some cases Lowering is not always followed by Fusion; see McFadden (2004) on Lowering in largely agglutinative Finno-Urgic languages. Second, current application of Lowering is peculiar in that a targeted node is already specified for features introduced by Lowering and Fusion. I would like to suggest that if the node is not yet specified for features that will be introduced by Lowering, a feature set on the node might be viewed as incomplete, and Vocabulary Insertion will be postponed until the feature set on a node is full. As a result, application of Vocabulary Insertion before Lowering is limited to configurations when lowering features are already present on a node, albeit with different values.

### 4.3 Case number restrictions derived

In this section, I will show how the analysis applies to the case number restrictions on mixed gender agreement in Russian. Recall that if a grammatically masculine nouns trigger feminine agreement, morphology fails to realize inflection of the noun unless an exponent regularly used in a given form is underspecified for gender and thereby syncretic between classes I and III. Table in (36) (repeated here from (11)) shows nominal inflection in Russian. Exponents that can be used under mixed gender agreement are singled out. Dashed frames are used with the nominative plural exponents because the analysis predicts for them to resolve conflicting genders, but this cannot be tested empirically.

(36) Nominal inflection in Russian

	SG				PL			
	I [-fem] [+α]	II [+fem] [-α]	III [+fem] [+α]	IV [-fem] [-α]	I [-fem] [+α]	II [+fem] [-α]	III [+fem] [+α]	IV [-fem] [-α]
NOM	∅	a	∅	o	i	i	i	a
ACC	a	u	∅	o	ov	∅	ov	∅
GEN	a	y	i	a	ov	∅	ov	∅
LOC	e	e	i	e	ax	ax	ax	ax
DAT	u	e	i	u	am	am	am	am
INS	om	oj	ju	om	ami	ami	ami	ami

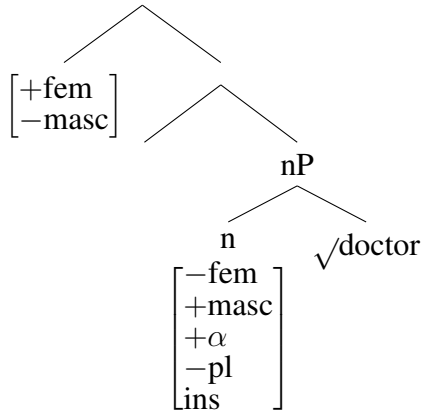
Nominal inflection in Russian cumulatively realizes case, number, class (i.e., gender and  $[\pm\alpha]$ ), and sometimes animacy. These features are often assumed to originate in different projections. For instance, grammatical gender is on the  $n$  head (see Kramer (2015; 2016b)), number is in the Num head (see Ritter (1991)), and case originates outside a noun phrase. In Russian, all these features are realized by a single exponent, and assuming that Vocabulary Insertion targets terminals (see Halle & Marantz (1993), Halle (1997)), this means that they have to be gathered on one node. Nouns in Russian stay low in the nominal projections: They follow modifiers such as numerals, adjectives, and demonstratives in a regular case. Thus, features realized by nominal inflection must be also low in the noun phrase structure. I suggest that they are on the  $n$  head. It is inherently valued by some nominal features (e.g. gender) and has unvalued probes for others (e.g., number and case).<sup>14</sup>

On the basis of the ban on feminine agreement with low classifying adjectives and the unidirectional switch from the masculine to the feminine agreement with other modifiers, semantic feminine gender is often introduced in a higher nominal projection (see Sauerland (2004), Pereltsvaig (2006), Asarina (2009), Steriopoło & Wiltschko (2010), Pesetsky (2013), King (2015), Lyutikova (2015), and Steriopoło (2019)). Since the  $n$  head is already specified for grammatical gender, unlike other nominal features that originate in higher projections, semantic gender does not appear on the  $n$  head by means of Agree, and as a result, it will lower to  $n$  in the morphological component. The structure in (37) presents a relevant part of a noun phrase as it is transferred to morphology from syntax. Here and throughout, I do not include animacy in derivations because all discussed

<sup>14</sup>Alternatively, all nominal features originate on the  $n$  head, and higher nominal projections have unchecked probes; see Privizentseva (2021). This approach facilitates the analysis of nominal concord because nominal modifiers can cyclically agree with the noun.

nouns are animate. For the sake of simplicity, I also abstract away from the decomposition of case features; see Müller (2004), Wiese (2004), or Caha (2019) for some options.

(37) Noun phrase structure



In (37), the *n* head is specified for the grammatical gender  $[-fem][+masc]$  and formal feature  $[\pm\alpha]$ . These features are idiosyncratically associated with nominal roots, but roots themselves are acategorial and featureless (see Marantz (1997), Acquaviva (2009)) so that *n* cannot acquire these feature via Agree with a root. Generally, how to ensure a correct pairing between roots and their idiosyncratic features without endowing roots with features is a long-standing question in Distributed Morphology. The relation between roots and such features is usually conceived of as licensing, but unless analyzed as Agree, licensing remains a vague, undefined concept. I would like to suggest that a correct distribution of features on *n* is derived by two mechanisms. First, since syntax does not refer to  $[\pm\alpha]$ , this feature can be introduced in morphology by a rule as in (38) that inserts positively valued feature in the presence of some roots and the negatively valued feature in the presence of the others, similarly to an analysis of declension class features by Embick (2010) and Kramer (2015). Second, gender features are required in syntax for agreement so they cannot be inserted postsyntactically. I suggest that the connection between roots and genders follows from selection in syntax. Depending on the gender features, *n* heads have different selectional restrictions. For instance, the *n* head with  $[-fem][+masc]$  selects for  $\sqrt{\text{doctor}}$ , among other roots. This approach requires to differentiate roots in syntax, as argued by Harley (2014) for independent reasons.

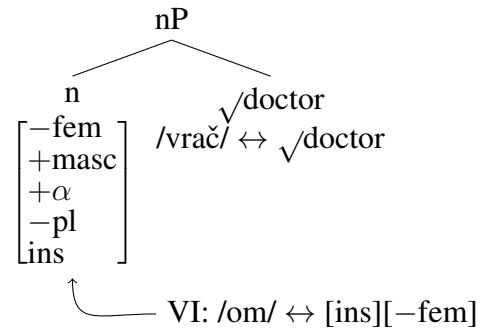
(38)  $n \rightarrow n_{[+\alpha]} / [ \_ \{ \sqrt{\text{doctor}}, \sqrt{\text{table}} \dots \} ]$

Everything is in place to derive case number restrictions on mixed gender agreement in Russian. Let us consider the instrumental singular form. Morphology processes the structure bottom-up and starts with supplying vocabulary item  $/vra\check{c}/$  for the root  $\sqrt{\text{doctor}}$ . After this, derivation proceeds to the next higher node – *n*. It bears case [ins], number  $[-pl]$ , grammatical gender  $[-fem][+masc]$  and  $[\pm\alpha]$ . Russian has three instrumental singular exponents that are given in (39). The vocabulary item in (39a) is syncretic between classes I and IV so it has  $[-fem]$  feature but is underspecified for  $[\pm\alpha]$ . The vocabulary item in (39b) realizes inflection of class II nouns and has a full feature specification:  $[+fem][-\alpha]$ . Similarly, the vocabulary item in (39c) is used only with class III nouns and has  $[+fem][+\alpha]$ . Out of these vocabulary items, only the one in (39a) can be inserted

without a violation of the Subset Principle. Other exponents are specified for [+fem] that the *n* head does not have at this stage. Vocabulary Insertion is illustrated in (40).

- (39) a. /om/ ↔ [ins][−fem];  
 b. /oj/ ↔ [ins][+fem][−α];  
 c. /ju/ ↔ [ins][+fem][+α].

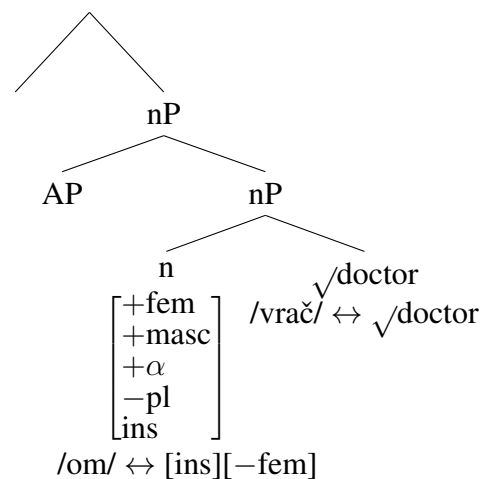
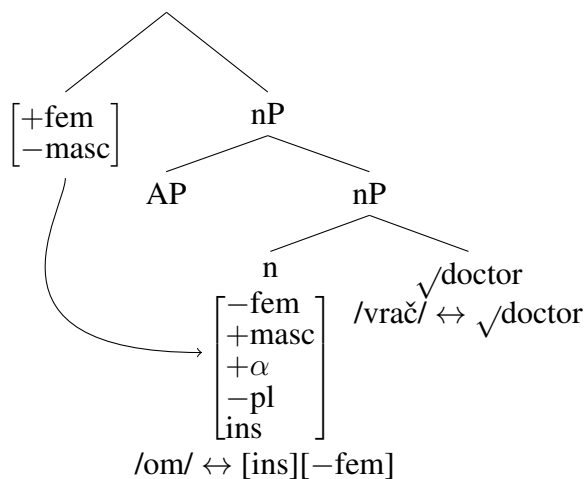
(40) Vocabulary Insertion into *n*



If the noun does not have semantic gender features, nominal inflection is essentially derived at this point. However, if a noun triggers semantic feminine agreement, there are feminine features higher in the structure. Belonging to features of the noun, semantic gender has to lower to the *n* head and be incorporated into its feature structure; see (41). When two nodes fuse, the new more marked feature [+fem] overwrites the less marked [−fem] feature on *n* as well as the less marked [−masc] that lowers as part of the semantic gender gets overwritten by a more marked [+masc] already present in the *n* head. The resulting structure is given in (42). After Lowering and Fusion, features on *n* are changed so that features of the inserted vocabulary item are not in the subset relation to them anymore: the vocabulary item is specified for [−fem] that is now absent in the node. The violation of the Subset Principle and inability to exchange the already inserted exponent leads to the realization failure.

(41) Lowering of feminine gender

(42) After Fusion, Subset Principle – \*

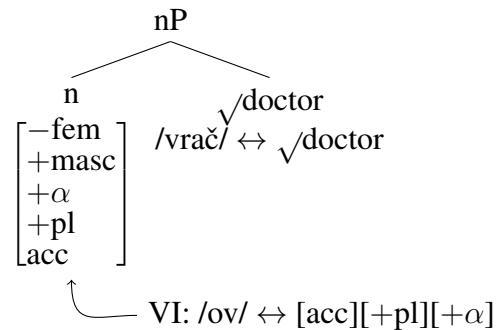


Thus, the morphological component fails to realize the instrumental singular inflection on the grammatically masculine class I noun in the presence of the semantic feminine gender. Given that this feminine feature enables feminine agreement in syntax, this derives restrictions on semantic feminine agreement with masculine profession-denoting nouns in the instrumental singular as well as in other forms where inflection is specified for gender.

A derivation with semantic gender feature that does not result in ineffability is illustrated in (44)-(46) on the basis of the accusative plural. There are two inflectional exponents in this form: /ov/ syncretic between class I and III and /ø/ syncretic between II and IV. Both affixes are specified for  $[\pm\alpha]$  and underspecified for  $[\pm\text{fem}]$ ; see (43). As shown in (44), vocabulary item /ov/ with feature  $[\pm\alpha]$  is chosen to realize inflection of the masculine class I noun.

- (43) a. /ov/  $\leftrightarrow$  [acc][+pl][+ $\alpha$ ];  
 b. /ø/  $\leftrightarrow$  [acc][+pl][− $\alpha$ ].

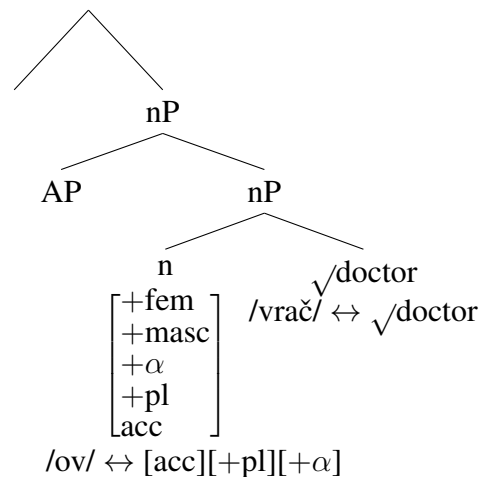
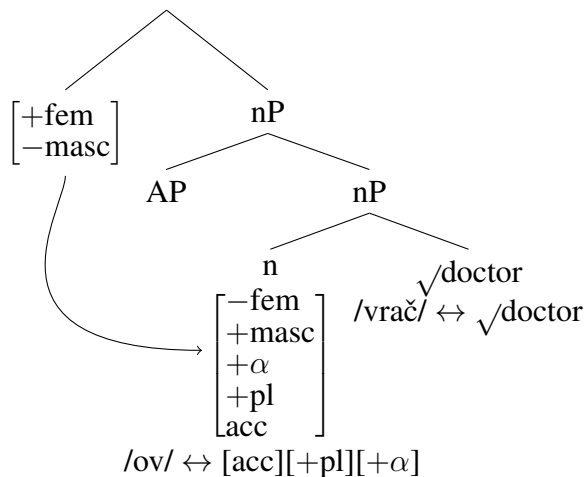
(44) Vocabulary Insertion into *n*



As in the previous derivation, if the noun has feminine gender higher in the structure, it must lower to *n* and fuse with its feature structure; see (45). Again, the new  $[\pm\text{fem}]$  feature replaces the less marked feature  $[-\text{fem}]$ , but unlike in the previous case, the vocabulary item is not specified for gender here so that the change in gender features cannot lead to the violation of the Subset Principle; see (46). Thus, the vocabulary item inserted earlier is legitimate, and morphological realization succeeds.

(45) Lowering of feminine gender

(46) After Fusion, Subset Principle – OK



As shown in section 2.4, conflicting features can be also resolved by ellipsis. In this case, a noun and its inflection are not realized (see Merchant (2001), van Craenenbroeck & Merchant (2013), and Saab (2019) on nominal ellipsis) so that the Subset Principle is vacuously satisfied independently of the presence of the semantic gender or a specification of a vocabulary item that is inserted.

To sum up, morphological ineffability occurs if the more marked feature is incorporated into



a feature structure of a terminal after Vocabulary Insertion has applied to it, and the inserted vocabulary item is specified for a feature that is altered. In the next subsection, I will consider a configuration where conflicting gender features in the Russian noun phrase do not lead to ineffability because the change in features on *n* feeds Vocabulary Insertion.

#### 4.4 Feature conflicts without case number restrictions

According to the decomposition of declension classes in Russian, class II realizes feature [+fem]. At the same time, this class contains a small group of masculine nouns such as *muščina* ‘man’, *deduška* ‘grandfather’, *djadja* ‘uncle’, and *junoša* ‘young man’. Example (47) shows that noun *muščina* ‘man’ takes class II exponents, and example (48) shows that it triggers masculine agreement. Unlike profession-denoting class I nouns, masculine class II nouns do not allow for mixed agreement so that there is no evidence for the presence of [+fem] in syntax.

(47)    muščin-a            muščin-u            muščin-oj            muščin  
           man-II.SG.NOM    man-II.SG.ACC    man-II.SG.INS    man[II.PL.GEN]

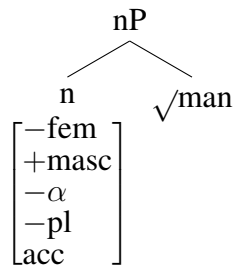
(48)    **Ét-ot**            star-**yj**            mužin-**a**            prišël    pozdno.  
           this-M.SG.NOM old-M.SG.NOM man-II.SG.NOM came.M late  
           ‘This old man came late.’

In section 3.2, I suggest that this is an instance of deponency: Morphological realization of these nouns does not match their syntactic behavior. They show the presence of the masculine features in syntax but realize the opposite feminine feature in morphology. I would like to suggest that these nouns indeed have [–fem][+masc] in syntax, and [+fem] is inserted in morphology. Insertion of the feminine feature is due to a morphological rule that introduces this feature in the presence of certain roots; see (49). After insertion, the feature must be incorporated into the feature structure on the *n* head, where it overwrites the less marked [–fem] feature. As semantically feminine class I nouns, masculine class II nouns have conflicting gender features, and the more marked feature overwrites the less marked one, but this case differs from the derivations in the previous section in that conditions for a change of gender on *n* are created by a node below the *n* head. This ensures that the resolution of conflicting features that leads to a change in gender takes place before Vocabulary Insertion applies to the *n* head. Consequently, a vocabulary item that matches the altered feature set will be selected.

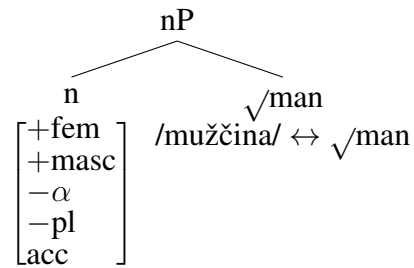
(49)     $n \rightarrow n_{[+fem]} / [ \_ \{ \surd_{\text{man}}, \surd_{\text{grandfather}} \dots \} ]$

The derivation of masculine class II nouns is shown in (50)-(52). The structure in (50) shows a noun phrase as it is transferred from syntax to morphology. The *n* head has masculine gender features. The structure is processed bottom-up: First, Vocabulary Insertion applies to the root. Next, [+fem] is inserted into the *n* head in accordance with the rule in (49); see (51). It overwrites the less marked [–fem] feature.

(50) Noun phrase

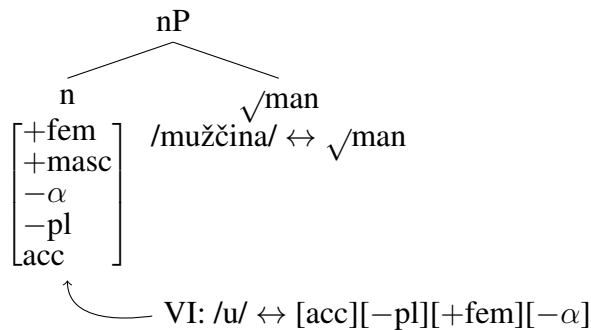


(51) Overwriting by [+fem]



Finally, Vocabulary Insertion applies to the *n* head (see (52)), and the inserted vocabulary item is specific for class II nouns and has both [+fem] and [-α]. Features on *n* are not changed after this, and morphological realization succeeds.

(52) Vocabulary Insertion into *n*



To sum up, the difference between gender conflicts that can lead to ineffability in morphology and those that do not follows from the timing of Vocabulary Insertion and a change of features in the *n* head. Given the bottom-up organization of morphology, this in turn follows from positions where conflicting features are introduced.

This is further confirmed by another small group of nouns with exceptional behavior: the so-called common gender nouns (see Švedova (1980: 464-466)). Common gender nouns belong to class II and differ from regular nouns of this class in that agreement with such nouns is determined by gender of their referent. As shown by Iomdin (1980), common gender nouns are not a homogeneous class. Depending on their properties, they can be divided into three types.

The first type includes nouns that syntactically do not have a default gender. These nouns trigger feminine agreement if they denote a female individual (see (53a)) and masculine agreement if the referent is male (see (53b)). A mismatch between the gender of the referent and agreement in syntax is ruled out. Irrespective of masculine or feminine agreement, such nouns are inflected for exponents of class II (see (54)), that is, they realize feature [+fem] by their inflection.

- (53) a. Ja znal **ét-ogo** nesčastn-**ogo** sirot-**u**.  
 I knew this-M.SG.ACC poor-M.SG.ACC orphan-II.SG.ACC  
 'I knew this poor (male/\*female) orphan.'
- b. Ja znal **ét-u** nesčastn-**uju** sirot-**u**.  
 I knew this-F.SG.ACC poor-F.SG.ACC orphan-II.SG.ACC

‘I knew this poor (female/\*male) orphan.’

- (54) sirot-a                      sirot-u                      sirot-oj                      sirot  
 orphan-II.SG.NOM      orphan-II.SG.ACC      orphan-II.SG.INS      orphan[II.PL.GEN]

I would like to suggest that these nouns have no grammatical gender on *n* in syntax. Instead, the *n* head has unvalued gender probes that agree with a semantic gender higher in the structure. Feature [+fem] that is realized by nominal inflection is introduced by a rule in (49). If the semantic gender is masculine, then the more marked [+fem] inserted in morphology overwrites it. If semantic gender is feminine, then gender inserted in morphology just coincides with it. Insertion of the second gender feature is triggered by the root that is lower than *n*, and it feeds Vocabulary Insertion of a nominal exponent.

The second type consists of nouns with default masculine gender. Such nouns can trigger masculine agreement independently of gender of a denoted individual (see (55a)), and feminine agreement is optionally possible only if the referent is female; see (55b). Used inflectional exponents belong to class II (see (56)), and this does not depend on agreement or gender of the referent.

- (55) a. Naš-**ego**              byvš-**ego**              starost-**u**              zovut Maša / Vanja.  
 our-M.SG.ACC former-M.SG.ACC prefect-II.SG.ACC call Masha / Vanja  
 Our former prefect is called Masha (female name) / Vanja (male name).  
 b. Naš-**u**              byvš-**uju**              starost-**u**              zovut Maša / \*Vanja.  
 our-F.SG.ACC former-F.SG.ACC prefect-II.SG.ACC call Masha / \*Vanja  
 Our former prefect is called Masha (female name) / \*Vanja (male name).

- (56) starost-a                      starost-u                      starost-oj                      starost  
 prefect-II.SG.NOM      prefect-II.SG.ACC      prefect-II.SG.INS      prefect[II.PL.GEN]

These nouns have masculine gender features ([−fem][+masc]) on the *n* head. Feminine gender features ([+fem][−masc]) if present are in a higher nominal projection. Despite masculine gender in syntax, these nouns realize [+fem] by their class II inflection. As in the previous case, feature [+fem] is inserted by a rule that applies in the presence of certain roots. The added [+fem] feature overwrites less marked [−fem] on the *n* head, and Vocabulary Insertion applies next. Semantic feminine gender lowers later in morphological derivation, but this does not change features on *n* because it already has marked gender features.

The third type of common gender nouns has nouns with default feminine gender. This is also the gender realized by nominal inflection; see (57). These nouns allow for feminine agreement regardless of gender that a referent has; see (58a). If the denoted individual is masculine, nouns can optionally trigger masculine agreement; see (58b).

- (57) zanud-a                      zanud-u                      zanud-oj                      zanud  
 bore-II.SG.NOM      bore-II.SG.ACC      bore-II.SG.INS      bore[II.PL.GEN]

- (58) a. Brat / sestra Peti – izvestn-**aja**              zanud-**a**.  
 brother / sister Petja’s known-F.SG.NOM bore-II.SG.NOM  
 Petja’s brother / Petja’s sister is a known bore.  
 b. Brat / \*sestra Peti – izvestn-**yj**              zanud-**a**.  
 brother / \*sister Petja’s known-M.SG.NOM bore-II.SG.NOM  
 Petja’s brother / \*Petja’s sister is a known bore.

In this case, the *n* head has grammatical feminine gender, and this gender is realized by the nominal inflection. Masculine gender is introduced in a higher nominal projection. Vocabulary Insertion applies to *n* before morphology reaches the node with semantic gender. Consequently, Lowering and Fusion counterfeed Vocabulary Insertion, as with semantically feminine class I nouns. However, this does not lead to ineffability because lowered [–fem] feature is less marked than [+fem] already present on the *n* head. Lowered [+masc] overwrites [–masc] on *n*, but this feature does not participate in the decomposition of class, and nominal exponents are not specified for it.

## 5 Conclusion

This paper presents a study of case number restrictions on the mixed gender agreement in Russian. These restrictions arise because of the conflict between the grammatical [–fem] and the semantic [+fem] gender features. Contradicting features make it impossible to use a vocabulary item that is specified for one of them, and this leads to ineffability in morphology. The conflict can be resolved by a syncretic underspecified exponent or by ellipsis of a noun.

The data and their analysis have three major consequences for grammatical theory. First, sets of inflectional exponents identified as declension classes are decomposed into more primitive features and gender is one of these features. For Russian, I suggest that four declension classes are built from two binary features: [±fem] and [±α]. Second, ineffability in morphology follows from the Subset Principle that is re-qualified into a well-formedness constraint that holds throughout the derivation. Third, Vocabulary Insertion and Lowering can be interleaved.

## References

- Acquaviva, Paolo (2009): Roots and lexicality in Distributed Morphology. In: A. Galani, D. Redinger & N. Yeo, eds., *York papers in linguistics – Special issue York-Essex morphology meeting May 2009*. pp. 1–21.
- Alexiadou, Artemis (2004): Inflection class, gender and DP-internal structure. In: G. Müller, L. Gunkel & G. Zifonun, eds., *Explorations in Nominal Inflection*. Mouton, Berlin, pp. 21–50.
- Alexiadou, Artemis & Gereon Müller (2008): Class features as probes. In: A. Bachrach & A. Nevins, eds., *Inflectional identity*. Oxford University Press, Oxford, pp. 101–155.
- Aronoff, Mark (1994): *Morphology by Itself: Stems and Inflectional Classes*. Vol. 22 of *Linguistic Inquiry Monograph*, Massachusetts Institute of Technology Press, Cambridge, Massachusetts.
- Arregi, Karlos & Andrew Nevins (2012): *Basque Auxiliaries and the Structure of Spellout*. Studies in Natural Language and Linguistic Theory, Springer, Dordrecht.
- Asarina, Alya (2009): Gender and adjective agreement in Russian. A paper presented at the 4<sup>th</sup> Annual Meeting of the Slavic Linguistic Society, Zadar, Croatia.
- Asarina, Alya (2011): Case in Uyghur and Beyond. PhD thesis, MIT.
- Baerman, Matthew (2011): Defectiveness and homophony avoidance, *Journal of Linguistics* 47(1), 1–29.
- Bhatt, Rajesh & Martin Walkow (2013): Locating agreement in grammar: an argument from agreement in conjunctions, *Natural Language & Linguistic Theory* 31(4), 951–1013.

- Bjorkman, Bronwyn M. (2016): Go get, come see: Motion verbs, morphological restrictions, and syncretism, *Natural Language & Linguistic Theory* 34(1), 53–91.
- Bobaljik, Jonathan David (2000): The Ins and Outs of contextual allomorphy. In: *University of Maryland working papers in linguistics*. pp. 35–71.
- Caha, Pavel (2019): *Case competition in Nanosyntax: A study of numerals in Ossetic and Russian*. Language Science Press, Berlin.
- Caha, Pavel (2020): Modeling declensions without declension features. The case of Russian. ms. Masarykova Univerzita.
- Calabrese, Andrea (2008): On Absolute and Contextual Syncretism: Remarks on the Structure of Paradigms and on how to derive it. In: A. Nevins & A. Bachrach, eds., *Inflectional Identity*. Oxford University Press, New York, pp. 156–205.
- Chomsky, Noam (2000): Minimalist Inquiries: The Framework. In: R. Martin, D. Michaels & J. Uriagereka, eds., *Step by Step*. MIT Press, Cambridge, MA, pp. 89–155.
- Chomsky, Noam (2001): Derivation by Phase. In: M. Kenstowicz, ed., *Ken Hale. A Life in Language*. MIT Press, Cambridge, MA, pp. 1–52.
- Chomsky, Noam & Morris Halle (1968): *Sound Pattern of English*. Harper & Row, New York, Evanston, London.
- Chung, Inkie (2009): Suppletive verbal morphology in Korean and the mechanism of vocabulary insertion, *Journal of Linguistics* 45(3), 533–567.
- Citko, Barbara (2005): On the Nature of Merge: External Merge, Internal Merge, and Parallel Merge, *Linguistic Inquiry* 36(4), 475–496.
- Coon, Jessica & Stefan Keine (2020): Feature Gluttony, *Linguistic Inquiry* 2(1), 1–82.
- Corbett, Greville G. (1982): Gender in Russian: An account of gender specification and its relationship to declension, *Russian linguistics* 6, 197–232.
- Corbett, Greville G. (1991): *Gender*. Cambridge Textbooks in Linguistics, Cambridge University Press.
- Crockett, Dina B. (1976): *Agreement in Contemporary Standard Russian*. Slavica Publishers.
- Dalrymple, Mary & Ronald M. Kaplan (2000): Feature Indeterminacy and Feature Resolution, *Language* 76(4), 759–798.
- Dalrymple, Mary, Tracy Holloway King & Louisa Sadler (2009): Indeterminacy by underspecification, *Journal of Linguistics* 45(1), 31–68.
- Dobler, Eva, Heather Newell, Maire Noonan, Glyne Piggott, Mina Sugimura, Lisa Travis & Tobin Skinner (2011): Narrow syntactic movement after spell-out. Ms. McGill University.
- Embick, David (2000): Features, Syntax, and Categories in the Latin Perfect, *Linguistic Inquiry* 31(2), 185–230.
- Embick, David (2010): *Localism versus Globalism in Morphology and Phonology*. MIT Press, Cambridge, London.
- Embick, David & Rolf Noyer (2001): Movement Operations after Syntax, *Linguistic Inquiry* 32(4), 555–595.
- Gerasimova, Anastasiya A. (2019): Variovanie soglasovatel'nyx xarakteristik v ruskoj umennoj gruppe. Master's thesis, Moscow State University.
- González-Poot, Antonio & Martha McGinnis (2006): Local versus long-distance fission in Distributed Morphology. In: C. Gurski, ed., *Proceedings of the 2005 Annual Conference of the Canadian Linguistic Association*. p. 1–20.
- Gouskova, Maria & Jonathan David Bobaljik (2021): Russian baby diminutives: Heading toward

- an analysis. Ms. New York University and Harvard.
- Graudina, Ljudmina Karlovna, Viktor Aleksandrovič Ickovič & Lija Pavlovna Katlinskaja (1976): *Grammatičeskaja pravil'nost' russoj reči: Opyt častotno-stilističeskogo slovarja variantov*. Nauka, Moskva.
- Groos, Anneke & Henk van Riemsdijk (1981): Matching effects in free relatives: A parameter of core grammar. In: L. Brandi, A. Belletti & L. Rizzi, eds., *Theory of markedness in generative grammar*. Scuola Normale Superiore, Pisa.
- Halle, Morris (1973): Prolegomena to a Theory of Word Formation, *Linguistic Inquiry* 4(1), 3–16.
- Halle, Morris (1990): An Approach to Morphology. In: J. Carter, R.-M. Déchaine, B. Philip & T. Sherer, eds., *Proceedings of North East Linguistics Society 20*. Vol. 1, GLSA Publications, Amherst, p. 150–184.
- Halle, Morris (1992): The Latvian Declension. In: G. Booij & J. van Marle, eds., *Yearbook of Morphology 1991*. Kluwer, Dordrecht, pp. 33–47.
- Halle, Morris (1994): The Russian Declension: An Illustration of the Theory of Distributed Morphology. In: J. Cole & C. Kisseberth, eds., *Perspectives in Phonology*. CSLI Publications, Stanford, pp. 29–60.
- Halle, Morris (1997): Distributed Morphology: Impoverishment and Fission. In: B. Bruening, Y. Kang & M. McGinnis, eds., *PF: Papers at the Interface*. MITWPIL, Cambridge, MA, pp. 425–449.
- Halle, Morris & Alec Marantz (1993): Distributed Morphology and the Pieces of Inflection. In: K. Hale & S. J. Keyser, eds., *The View from Building 20: Essays in Linguistics in Honor of Sylvain Bromberger*. MIT Press, Cambridge, MA, p. 111–176.
- Halle, Morris & Alec Marantz (1994): Some Key Features of Distributed Morphology. In: A. Carnie, H. Harley & T. Bures, eds., *MIT Working Papers in Linguistics: Papers on Phonology and Morphology*. Vol. 21, MITWPL, Cambridge, pp. 275–288.
- Halle, Morris & Bert Vaux (1998): Theoretical aspects of Indo-European nominal morphology: The nominal declensions of Latin and Armenian. In: J. Jasanoff, H. C. Melchert & L. Olivier, eds., *Mír Curad. Studies in Honor of Calvert Watkins*. Sonderdruck, Innsbruck, p. 223–240.
- Harley, Heidi (2014): On the identity of roots, *Theoretical Linguistics* 40(3-4), 225–276.
- Harley, Heidi & Rolf Noyer (1999): State-of-the-article: Distributed Morphology, *Glott International* (3), 3–9.
- Harris, James W. (1991): The Exponence of Gender in Spanish, *Linguistic Inquiry* 22(1), 27–62.
- Hein, Johannes & Andrew Murphy (2019): Case matching and syncretism in ATB-dependencies, *Studia Linguistica* n/a(n/a).
- Ingria, Robert J. P. (1990): The Limits of Unification. In: *28th Annual Meeting of the Association for Computational Linguistics*. Association for Computational Linguistics, Pittsburgh, Pennsylvania, USA, pp. 194–204.
- Iomdin, Leonid Lejbovič (1980): O russkix suščestvitel'nyx tak nazываемogo obščego roda, *Izvestija AN SSSR* 39(5), 456–461.
- Jakobson, Roman & Morris Halle (1956): *Phonology and Phonetics*. Mouton & Co., Printers, The Hague, Leiden, pp. 1–51.
- Karcevskij, Serge (1932): Sur la structure du substantif russe. In: *Charisteria. Guilelmo Mathesio Quinquagenario. A Discipulis et Circuli linguistici Pragensis Sodalibus oblata*. Cercle Linguistique de Prague, Prague, pp. 65–73.
- King, Katherine E. (2015): Mixed Gender Agreement in Russian DPs. Master's thesis, University

- of Washington.
- Kramer, Ruth (2015): *The Morphosyntax of Gender*. Oxford University Press, Oxford.
- Kramer, Ruth (2016a): A Split Analysis of Plurality: Number in Amharic, *Linguistic Inquiry* 47(3), 527–559.
- Kramer, Ruth (2016b): The location of gender features in the syntax, *Language and Linguistics Compass* 10(11), 661–677.
- Kučerová, Ivona (2018):  $\phi$ -Features at the Syntax-Semantics Interface: Evidence from Nominal Inflection, *Linguistic Inquiry* 49(4), 813–845.
- Landau, Idan (2016): DP-internal semantic agreement: A configurational analysis, *Natural Language & Linguistic Theory* 34(3), 975–1020.
- Lightner, Theodore M. (1965): *Segmental Phonology of Modern Standard Russian*. Doctoral thesis, Massachusetts Institute of Technology, Cambridge, MA.
- Lyutikova, Ekaterina A. (2015): Soglasovanie, priznaki i struktura imennoj gruppy v ruskom jazyke, *Russkij jazyk v nauchnom osveshchenii* 30, 44–74.
- Marantz, Alec (1997): No Escape from Syntax: Don't Try Morphological Analysis in the Privacy of your own lexicon, *University of Pennsylvania Working Papers in Linguistics* 4(2), 201–225.
- Matushansky, Ora (2013): Gender Confusion. In: L. L.-S. Cheng & N. Corver, eds., *Diagnosing Syntax*. Oxford University Press, Oxford, pp. 271–294.
- McFadden, Thomas (2004): The position of morphological case in the derivation: A study on the syntax-morphology interface. PhD thesis, University of Pennsylvania.
- Melvold, Janis Leanne (1989): Structure and stress in the phonology of Russian. PhD thesis, MIT.
- Merchant, Jason (2001): *The syntax of silence: Sluicing, islands, and the theory of ellipsis*. Oxford University Press, Oxford.
- Müller, Gereon (2004): On Decomposing Inflection Class Features: Syncretism in Russian Noun Inflection. In: G. Müller, L. Gunkel & G. Zifonun, eds., *Explorations in Nominal Inflection*. Mouton, Berlin, pp. 189–227.
- Müller, Gereon (2013): Approaches to Deponency, *Language and Linguistics Compass* 7(6), 351–369.
- Mučnik, Iosif Pavlovič (1971): *Grammatičeskije kategorii glagola i imeki v ruskom literaturnom jazyke*. Nauka, Moskva.
- Myler, Neil (2017): Exceptions to the Mirror Principle and morphophonological 'Action at a distance'. In: H. Newell, M. Noonan, G. Piggott & L. Travis, eds., *The structure of words at the interfaces*. Oxford University Press, Oxford, pp. 100–125.
- Nevins, Andrew (2007): The representation of third person and its consequences for person-case effects, *Natural Language & Linguistic Theory* 25(2), 273–313.
- Noyer, Ralf (1992): Features, Positions and Affixes in Autonomous Morphological Structure. Doctoral thesis, Massachusetts Institute of Technology, Cambridge, MA.
- Panov, Mixail Viktorovič, ed. (1968): *Morfologija sovremennogo russkogo literaturnogo jazyka (Russkij jazyk i sovetskoje obščestvo: Sociologo-lingvističeskoje issledovanije: III)*. Nauka, Moskva.
- Pereltsvaig, Asya (2006): Small Nominals, *Natural Language & Linguistic Theory* 24(2), 433.
- Pesetsky, David (1979): Russian Morphology and Lexical Theory. Ms. Massachusetts Institute of Technology.
- Pesetsky, David (2013): *Russian Case Morphology and the Syntactic Categories*. The MIT Press, Cambridge, Massachusetts.

- Piggott, Glyne & Lisa deMena Travis (2017): Wordhood and word-internal domains. In: H. Newell, M. Noonan, G. Piggott & L. d. Travis, eds., *The Structure of Words at the Interfaces*. Oxford University Press, New York, pp. 41–74.
- Privizentseva, Mariia (2021): Nominal ellipsis reveals concord in Moksha Mordvin. Ms. Leipzig University.
- Pullum, Geoffrey K. & Arnold M. Zwicky (1986): Phonological Resolution of Syntactic Feature Conflict, *Language* 62(4), 751–773.
- Puškar, Zorica (2017): Hybrid agreement: modelling variation, hierarchy effects and phi-feature mismatches. PhD thesis, Universität Leipzig.
- Puškar, Zorica (2018): Interactions of Gender and Number Agreement: Evidence from Bosnian/Croatian/Serbian, *Syntax* 21(3), 275–318.
- Ralli, Angela (2000): A feature-based analysis of Greek nominal inflection, *Glossologia* (10–12), 201–227.
- Ritter, Elizabeth (1991): Two functional categories in Noun Phrases: Evidence from modern Hebrew. In: S. Rothstein, ed., *Perspectives on phrase structure: Heads and licensing*. Academic Press, San Diego, CA, p. 37–62.
- Roca, I. M. (1989): The organization of grammatical gender, *Transactions of the Philological Society* 87(1), 1–32.
- Saab, Andrés (2019): Nominal ellipsis. In: J. van Craenenbroeck & T. Temmerman, eds., *The Oxford Handbook of Ellipsis*. Oxford University Press, Oxford, pp. 526–561.
- Salzmann, Martin (2020): The NP vs. DP debate. Why previous arguments are inconclusive and what a good argument could look like. Evidence from agreement with hybrid nouns., *Glossa: a journal of general linguistics* 5(1).
- Sauerland, Uli (2004): A comprehensive semantics for agreement. Paper presented at Phi-Workshop, McGill University, Montreal.
- Schütze, Carson T. (2003): Syncretism and double agreement with Icelandic nominative objects. In: L.-O. Delsing, C. Falk, G. Josefsson & H. A. Sigurðsson, eds., *Festschrift for Christer Platzack*. Department of Scandinavian Languages, Lund, pp. 295–303.
- Siddiqi, Daniel (2010): Distributed Morphology, *Language and Linguistics Compass* 4(7), 524–542.
- Skoblikova, Elena Sergeevna (1971): *Solgasovanije i uprevlenie v russkom jazyke*. Prosveščeniye, Moskva.
- Smith, Peter W. (2015): Feature Mismatches: Consequences for syntax, morphology and semantics.. PhD thesis, University of Connecticut.
- Smith, Peter W. (2017): Possible and Impossible Agreement Mismatches. Ms. Goethe-Universität, Frankfurt.
- Steriopolo, Olga (2019): Mixed gender agreement in the case of Russian hybrid nouns, *Questions and Answers in Linguistics* 5(2), 91–105.
- Steriopolo, Olga & Martina Wiltschko (2010): Distributed gender hypothesis. In: G. Zybatow, P. Dudchuk, S. Minor & E. Pshehotskaya, eds., *Studies in Slavic Linguistics: Proceedings of the Formal Description of Slavic Languages 7.5*. Peter Lang, Bern, pp. 155–172.
- Stump, Gregory (2001): *Inflectional Morphology*. Cambridge University Press, Cambridge.
- Stump, Gregory (2007): A non-canonical pattern of deponency and its implications. In: M. Baerman, G. G. Corbett, D. Brown & A. Hippisley, eds., *Deponency and Morphological Mismatches*. Oxford University Press (for The British Academy), Oxford, p. 71–95.



- Taraldsen, Knut Tarald (1981): Case-conflict in Norwegian topicalization. In: V. Burke & J. Pustejovsky, eds., *Proceedings of North East Linguistics Society 11*. Vol. I, GLSA Publications, Amherst, p. 377–398.
- Timberlake, Alan, ed. (2004): *A reference grammar of Russian*. Cambridge University Press, Cambridge.
- van Craenenbroeck, Jeroen & Jason Merchant (2013): Ellipsis phenomena. In: M. den Dikken, ed., *The Cambridge Handbook of Generative Syntax*. Cambridge Handbooks in Language and Linguistics, Cambridge University Press, pp. 701–745.
- Švedova, Natalija Jurievna (1980): Podčinitel'nye svjazi slov i slovosočetačija. In: N. J. Švedova, ed., *Russkaja grammatika, II: sintaksis*. Nauka, Moskva, pp. 13–82.
- Weisser, Philipp (2018): Markedness. Ms. Leipzig University.
- Wiese, Bernd (2004): Categories and Paradigms. On Underspecification in Russian Declension. In: G. Müller, L. Gunkel & G. Zifonun, eds., *Explorations in Nominal Inflection*. Mouton, Berlin, pp. 321–372.
- Wunderlich, Dieter (2004): Is There Any Need for the Concept of Directional Syncretism?. In: G. Müller, L. Gunkel & G. Zifonun, eds., *Explorations in Nominal Inflection*. Mouton, Berlin, pp. 373–396.
- Zaenen, Annie & Lauri Karttunen (1984): Morphological non-distinctiveness and coordination. In: G. Alvarez, B. Brodie & T. McCoy, eds., *Proceedings of the First Eastern States Conference on Linguistics*. Cascadilla Press, Somerville, MA.
- Zaliznjak, Andrej Anatolevič, ed. (2010): *Trudy po akcentologii. T.I. Jazyki slavjanskix kul'tur*, Moskva.