Russian plural declension and inquorate genders

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Abstract. The goal of this paper is to provide an analysis of Russian plural declension classes against the background of two conflicting views on the morphosyntax of number and gender features: as two separate nodes or as a single bundle. I argue that the realization of case endings in the Russian plural declension is sensitive to the gender of the stem and demonstrate that, contrary to frequently held assumptions, not only is gender morphologically active in the plural despite full neutralization in syntax, but plural and singular stems can in fact differ in gender.

Keywords. gender; number; declension class; inquorate genders

1. Introduction. While Fuchs et al. (2015) and Scontras et al. (2018) argue that in Spanish nominal gender and number are given separate morphological representation, they also point out that this might not be the case in other languages. Thus, Bateman & Polinsky (2009) argue that Romanian gender is bundled with number:[1] gender agreement in the plural is not determined by the gender agreement in the singular. I argue that Russian, where agreement is expressed as a portmanteau morpheme simultaneously reflecting case, number, and gender, provides evidence for two positions of gender, on the noun itself and on number, and that unlike plural agreement, the Russian plural declension is linked to gender.

Section 2 discusses Russian singular declension and its relation to gender: following Corbett (1982), I argue that the gender of an inanimate Russian noun is predictable from its declension class. The hypothesis that Russian declension classes are a product of two binary features (Nesset 1994; Müller 2004a,b; Alexiadou & Müller 2008), one of which is gender (Privizentseva 2023), formalizes this connection.

Section 3 develops the same approach to Russian plural inflection and demonstrates that it is determined by the gender of the stem: not only the feature [±F] active in the singular, but also the feature [±M], which is not relevant for the singular declension exponence, but important in the plural. Exceptions to this generalization are analyzed as arising from gender change in the plural.

Section 4 summarizes the empirical outcome and assesses the consequences of this view for the morphosyntactic representation of number and gender, arguing that gender is a property not only of the noun but also of its number. It also discusses cases of Russian plural allomorphy that are not accounted for by the present analysis, and provides direction for future research.

2. The relation between declension classes and gender. The irreducible difference between declension class and gender (Aronoff 1992) is that the former is only relevant at the word-level

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[1] Besides feminine and masculine, Romanian has a third gender, which is syncretic with the masculine in the singular and with the feminine in the plural. Bateman & Polinsky (2009) argue that gender is computed separately in the two numbers; for alternatives, see Mallinson (1984), Farkas (1990), Croitor & Giurgea (2009), Giurgea (2014), Kramer (2015), Matushansky (2022), and Kramer & Sande (2023), among others.

(i.e., it determines the realization of inflection on the noun itself), while the latter affects the realization of inflection on other items, which arises there either as a result of agreement (1) or to permit coreference (2). In Russian, like in many other languages, nouns are classified by both declension class and by gender. In (1) and (2), the two appear to be the same; a difference in the nominative singular ending correlates with a difference in gender:[2]

(1) a. Et-**a** strann-**aja** knig**a** porazil-**a** nas. *a*-declension, feminine
this-F strange-F book.F impressed-F us-ACC
'This strange book impressed us.'

b. Etot-_ strann-**ɨj**_ roman_ porazil-_ nas. C-declension, masculine
this-M strange-M novel.M impressed-M us-ACC
'This strange novel impressed us.'

c. Et-**o** strann-**oe** proizvedeni**e** porazil-**o** nas. *o*-declension, neuter
this-N strange-N oeuvre.N impressed-N us-ACC
'This strange oeuvre impressed us.'

(2)

Gde	kniga, / roman, / proizvedenie,	kotor**uju** / kotor**yj**_ / kotor**oe**	ja	čital	–	On**a** / On / On**o**	_	na	stole.
	book	which$_{3FSG.ACC}$				3FSG			
where	novel	which$_{3MSG.ACC}$	I	read$_{PAST}$		3MSG		on	table
	oeuvre	which$_{3NSG.ACC}$				3NSG			

'Where is the book/novel/oeuvre that I was reading? – It is on the table.'

A mismatch between the realization of the nominal declension (in the nominative singular) and of agreement is exemplified in (3): the consonant-final noun in (3a) triggers feminine agreement, and the *o*-final noun in (3b) triggers masculine agreement. Morphologically, the former belongs to the ь-declension, and the latter, to the *o*-declension:[3]

(3) a. Et-**a** strann-**aja** povest^{j}-_ porazil-**a** nas. ь-declension, feminine
this-F strange-F novella impressed-F us-ACC
'This strange novella impressed us.'

b. Etot-_ strann-**ɨj**_ romaniš**k**o porazil-_ nas. *o*-declension, masculine
this-M strange-M novel.DIM impressed-M us-ACC
'This strange poor little novel impressed us.'

[2] The transcriptions below closely follow Russian orthography and do not indicate (a) palatalization before front vowels (/*Ci*/ → [*C^{j}i*], /*Ce*/ → [*C^{j}e*]), (b) various vowel reduction phenomena in unstressed syllables, or (c) voicing assimilation and final devoicing. Stress is marked by an acute accent on the vowel. The yers (abstract high lax unrounded vowels) are represented as /ь/ (front) and /ъ/ (back). The letters ч (IPA [t͡ɕ]), ш (IPA [ʂ]), ж (IPA [ʐ]), щ (IPA [ɕːɕ^{j}]), and ц (IPA [t͡s]) are traditionally rendered as *č*, *š*, *ž*, *šč*, and *c*.

[3] The ь-declension, exemplified in (3a), contains predominantly feminine nouns. The only exceptions are 11 neuter nouns and 1 masculine one with the endings of the ь-declension in all cases except instrumental and perhaps nominative. While they can be accounted for by the theory to be proposed, the demonstration of this fact would take us too far afield for this to be practical in the limits of this paper. The *o*-declension contains predominantly neuter nouns; all exceptions are either animate or diminutives from masculine nouns.

The relation between the declension class of a noun and its gender is nonarbitrary, as will be now shown, and this predictability paves the way to the hypothesis that the notion of a declension class is nonatomic. I begin (section 2.1) with an introduction into the phonology of the Russian surface [i], which can have more than one underlying sources. The decompositional approach to Russian declension classes is presented in section 2.2. Finally, section 2.3 presents evidence that one of the two features underlying syntactic gender, [±F], is crucially involved in the specification of Russian declensional exponence.

2.1. THE SOURCES OF THE SURFACE [I]. As any student or speaker of Russian knows, in addition to the familiar front high unrounded vowel [i], Russian also has its back counterpart, [ɨ]. The discussion of whether the distinction between [ɨ] and [i] is phonemic or allophonic goes back to the beginning of the 20th century, with the Leningrad school of phonology treating /ɨ/ and /i/ as distinct phonemes and the Moscow school regarding [ɨ] as an allophone of /i/. In what follows, I side with the Leningrad school, as well as with Halle (1994), Rubach (2000), and Matushansky (2002), and treat /ɨ/ as a distinct phoneme for ease of exposition, but, as will become clear eventually, nothing hinges on this and the data discussed in this paper are also fully compatible with the assumption (Padgett 2001, 2010; Iosad & Morén-Duolljá 2010) that Russian has only one high unrounded vowel [i].

The constraints determining the distribution of the surface [ɨ] and [i] in Russian allow only [i] after velars and palatalized consonants, and [ɨ] otherwise (4). Assuming [ɨ] as the underlying representation of the genitive singular morpheme in (4) and obligatory fronting after palatalized consonants (4b) and velars (4c), as in Halle (1994), predicts the correct surface forms:

(4) a. *vodá* 'water' + ɨ GEN → *vodɨ́* non-palatalized
b. *zemlʲá* 'land' + ɨ GEN → *zemlí* palatalized
c. *kníga* 'book' + ɨ GEN → *knígi* velar

An underlying /i/, on the other hand, mutates preceding velars and palatalizes all other preceding consonants (as long as they have a palatalized counterpart), as illustrated in (5) with the feminine diminutive suffix *-ic-*:[4]

(5) a. *vodá* 'water' + *-ic-* → *vodíca* [vʌdʲítsə] non-palatalized
b. *zemlʲá* 'land' + *-ic-* → *zemlíca* [zʲimlʲítsə] palatalized
c. *kníga* 'book' + *-ic-* → *knížica* [knʲížɨtsə] velar

Having thus established that the surface [i] and [ɨ] may correspond to the same underlying representation (/ɨ/), which can be distinguished from an underlying /i/ by the behavior of the preceding velars and non-palatalized stem-final consonants, we now turn to syncretism in Russian nominal declension.

2.2. DECLENSION DECOMPOSITION. The number and naming of declension classes in Russian is subject to some controversy: the traditional third declension (feminine nouns ending in a palatalized consonant) is the only one that is always referred to in this way, the numbering of the first two being inconsistent across sources. To reduce confusion, I refer to all declension classes by their nominative singular surface form, with the third declension coded by its historical source,

[4] One environment where palatalization does not happen is the prefix-stem juncture; see Rubach (2000), Matushansky (2002), and Blumenfeld (2003) for details.

the front yer (ь). Nouns that end in [a] in the nominative singular (all of them feminine except those denoting human males) therefore belong to the *a*-declension, and I follow Karcevskij (1932), Corbett (1982), Nesset (1994), Doleschal (1996), Müller (2004a,b), Alexiadou & Müller (2008), Caha (2021), and Privizentseva (2023), among others, and divide non-feminine nouns into two declension classes: those ending in a consonant in the nominative singular (the C-declension; all masculine) and those ending in [o] (the *o*-declension).[5] While traditional Russian grammars (e.g., Vinogradov 1952; Isačenko 1965; Švedova 1980) treat the *o*- and C-declensions as one declension class, since they share all case endings except the nominative singular, Corbett (1982) provides evidence and argumentation that the two classes are needed. The small class of heteroclite nouns (footnote 3) is set aside for now.

number	case:	a	ь	o	C
	gender:	F	F	N	M
SG	NOM	čert-á	lʲubóvʲ	božestv-ó	stól
	ACC	čert-ú	ACC=NOM	ACC=GEN for animates, ACC=NOM for inanimates	
	GEN	čert-í	lʲubv-í	božestv-á	stol-á
	DAT	čert-é	lʲubv-í	božestv-ú	stol-ú
	LOC	čert-é	lʲubv-í	božestv-é	stol-é
	INS	čert-ój	lʲubóvʲ-ju	božestv-óm	stol-óm
PL	NOM	čert-í	lʲubv-í	božestv-á	stol-í
	ACC	ACC=GEN for animates, ACC=NOM for inanimates			
	GEN	čért-Ø	lʲubv-éj	božéstv-Ø	stol-óv
	DAT	čert-ám	lʲubvʲ-ám	božestv-ám	stol-ám
	LOC	čert-áx	lʲubvʲ-áx	božestv-áx	stol-áx
	INS	čert-ámi	lʲubvʲ-ámi	božestv-ámi	stol-ámi
		‘line’	‘love’	‘deity’	‘table’

Table 1. Nominal declension classes (after Corbett 1982)

Syncretism patterns provide potential evidence for grouping paradigm cells into natural classes defined by shared features. On the basis of the patterns in Table 1 (indicated by shading and by frames), Nesset (1994), Müller (2004a,b) and Alexiadou & Müller (2008) hypothesize that the four declension classes of Russian arise from the combination of two binary features as indicated in Table 2 (see Halle 1992 for a similar treatment of Latvian and Börjesson 2006 for Slovene).[6] I first provide morphological evidence for this decomposition and then show how it is linked to gender.

[5] Two declensions (the *o*-declension and the ь-declension) have limited productivity in Modern Russian; nearly all new nouns in them are derived. The remaining two (the C-declension and the *a*-declension) are fully productive, and there also exists a large and ever-growing class of indeclinable nouns, showing the same form in all cases and numbers, whose gender is determined on semantic and/or phonological grounds (Unbegaun 1947; Murphy 2000; Wang 2014; Baranova 2016; Chuprinko et al. 2023).

[6] Nesset (1994) defines the two features by the nominative singular ending (overt vs. non-overt) and by the choice of the genitive singular ending, [ɨ] or [a].

	+α	–α
–β	C-declension: *stol* ‘table.M’, *drózd* ‘thrush.M’	*ь*-declension: *lʲubóvʲ* ‘love.F’
+β	*o*-declension: *božestvó* ‘deity.N’	*a*-declension: *čertá* ‘line.F’

Table 2. Decomposition of Russian declension classes: [±α][±β]

As is easy to see, accusative case in Russian is subject to massive syncretism: in the *ь*-declension the nominative case is syncretic with the accusative in the C-declension, it is syncretic with the genitive for animate nouns and with the accusative for inanimate ones, and in the *o*-declension syncretism is governed by the feature [human]. The fact that animacy plays no role in the *ь*- and *a*-declensions suggests that they have something in common, and this is confirmed by the shared feature value [–α] in Table 2. Though the details are far from obvious at this point, this conclusion is supported by their shared exponence in the genitive singular (modulo accentuation; see Melvold 1989) and also in the nominative plural.[7]

As noted in section 2.1, the surface [ɨ] and [i] may correspond to the same underlying representation. The exponence of the genitive singular and the nominative plural as [ɨ] in the *a*-declension and as [i] in the *ь*-declension in Table 1 is fully compatible with the same underlying representation as /ɨ/ in both declension classes. The surface [i] is obligatory in the *ь*-declension because in the *ь*-declension, stem-final consonants are all palatalized (and I leave open the question of whether it is a suffix that must be used in this declension or a defining property of the *ь*-declension that can be linked to the feature [±β]).

Abstract formal features make it possible to formulate Vocabulary Insertion rules for syncretic cells in the terms of a shared feature. In the case of the genitive singular, two equally reasonable formalizations are possible, either (6a) or (6b):

(6) a. [GEN] ↔ *-i-* / __ [–α]
-a- otherwise
b. [GEN] ↔ *-a-* / __ [+α]
-i- otherwise

The grouping of the C- and the *ь*-declensions (±α, –β) comes from their identical exponence in the nominative singular; as (7) shows, both are consonant-final on the surface. While Lightner (1965), Pesetsky (1979), Halle (1994), Matushansky (2002) and Halle & Matushansky (2006), among others, argue for the underlying representation of this nominative singular ending as the back yer (-*ъ*-), to which they attribute the lowering of the stem yer (7), Yearley (1995) and Gouskova (2012) argue that this ending is phonologically null. For our purposes this makes no difference, and in both approaches, stem-final palatalization is assumed to be the property of the stem-final consonant rather than of the ending.

(7) a. /lʲubъvʲ+ъ/ or /lʲubъvʲ+Ø/ → lʲubóvʲ$_{\text{SG.NOM}}$ *ь*-declension
b. /dʲnʲ+ъ/ or /dʲn+Ø/ → dénʲ$_{\text{SG.NOM}}$ C-declension

However, since the nominative singular endings of the *a*-declension and the *ь*-declension differ, three rules are needed for Vocabulary Insertion, and the apparent syncretism could result not from a shared feature, but from default exponence, as in (8). This argument by itself is

[7] The nominative plural forms given in Table do not exhaust the range of available options for the C-declension, as discussed in sections 3.3, 4.1 and 4.2.

therefore rather weak, but Privizentseva (2023) provides potential further evidence for it from semantic agreement, arguing that it is the shared feature value [–β] that licenses semantic agreement for C-declension nouns.

(8) [NOM] ↔ *-a-* / __ [–α, +β]
-o- / __ [+α, +β]
-ъ- (or Ø) otherwise

The traditionally unified *o*- and C-declensions (+α, ±β) match in oblique cases (i.e., they differ only in the nominative singular), while the orthogonal set of the *a*- and the *o*-declensions (±α, –β) is motivated by the derivation of expressives; see section 2.3.

Further evidence for the decomposition in Table 2 comes from the allomorphy of the possessive suffix, which is also determined by the declension class: the suffix *-in-* is used with *a*-declension and *ь*-declension nouns (9), while *-ov-* forms possessives of C-declension and *o*-declension nouns (10). Possessive allomorphy is therefore sensitive to [±α], and the animate masculine *a*-noun in (9a) shows that this allomorphy seems to be governed by declension class rather than gender:[8]

(9) a. *kúrica* F ‘hen’ → *kúricɨn* ‘the hen’s’; *pápa* M ‘Dad’ → *pápin* ‘Dad’s’ a
b. *Raxíl*^{j} F ‘Rachel’ → *Raxílin* ‘Rachel’s’ ь

(10) a. *sólnce* ‘sun’ → *sólncev* ‘the sun’s’ o
b. *učítel*^{j} ‘teacher’ → *učítel*^{j}*ev* ‘the teacher’s’; *Iván* M ‘Ivan’ → *Ivánov* ‘Ivan’s’ C

Finally, Table 1 does not indicate the accentual properties of various morphemes. Accentuation (see Melvold 1989: 21; Garde 1998: 154, 181) is what distinguishes the accented dative and locative singular ending *-e* of the *a*-declension and the segmentally identical unaccented locative singular ending of the *o*- and *C*-declensions. This means that there is no syncretism across declension classes in the locative (beyond the general oblique syncretism in the *o*- and C-declensions).[9]

While Nesset (1994) and Alexiadou & Müller (2008) agree that the two features are formal and have no existence outside morphology, Caha (2021) and Privizentseva (2023) argue that the [±α] feature can be given independent motivation as [±feminine], and the next section presents evidence in favor of this view.

Summarizing, syncretic exponence across declension classes can be incidental (for instance, between the nominative singular and genitive plural of the *a*- and *ь*-declensions), result from default realization (as discussed for the nominative singular syncretism in (8)) or be due to a shared feature in the structural description of the underspecified Vocabulary Item (as in (6)). The

[8] As discussed in Koptjevskaja-Tamm & Shmelev (1994) and Babyonyshev (1997) (see also Corbett 1987), possessive formation is relatively productive for proper names of the *a*-declension (9a); all others ((9b)–(10)) are limited in different ways.

[9] As pointed out by an anonymous reviewer, the locative ending is realized as *-i-* after non-monosyllabic nouns ending in [ij]. Since this allomorph appears with nouns of the *a*-declension (*armij-a/armi-i* ‘army-NOM/LOC’), C-declension (*radij-Ø/radi-i* ‘radium-NOM/LOC’), and *o*-declension (*zdani-e/zdani-i* ‘building-NOM/LOC’) and is clearly conditioned by the phonology of the stem (including the position of the stress – only one noun with final stress exhibits this ending, *zabɨtʲjó/zabɨtʲjí* ‘unconsciousness-NOM/LOC’), I conclude that this allomorphy is phonological in nature, though not just a variant spelling of *-e-*, contra Trager (1953).

assumption that the four declension class features can be replaced by two abstract features underlying them does not only increase the empirical coverage by accounting for syncretic patterns, but also, as will now be shown, further simplifies the system if one of these abstract features can be identified with the independently motivated gender feature.

2.3. THE FEMININE REVERSAL: [±A] AS [∓FEMININE]. As discussed in Corbett (1982, 1991), Russian gender is partially semantic for animates (nouns denoting females by virtue of their meaning are feminine, nouns denoting males are masculine) and otherwise predictable from the declension class:

(11) declension → formal gender
  a. inanimate nouns of the C-declension are masculine
  b. inanimate nouns of the *a*- and *ь*-declensions are feminine
  c. inanimate nouns of the *o*-declension are neuter[10]

I follow Privizentseva (2023) and assume that the three Russian genders involve the combination of two binary features, [±F] and [±M], with the feminine gender encoded as [+F][–M], the neuter as [–F][–M], and the masculine as [–F][+M], with the combination [+F][+M] leading to a conflict and therefore unattested. Thus masculine C-declension nouns and neuter *o*-declension nouns share the feature [–F], while nouns of the *a*-declension and the *ь*-declension are [+F] (setting semantically gendered animate *a*-declension nouns aside). One of the two declension features can therefore be given independent motivation:

	–F	+F
–β	C-declension: *stol* ‘table.M’, *drózd* ‘thrush.M’	*ь*-declension: *lʲubóvʲ* ‘love.F’
+β	*o*-declension: *božestvó* ‘deity.N’	*a*-declension: *čertá* ‘line.F’

Table 3. Gender-based decomposition of Russian declension classes: [±F][±β]

Privizentseva (2023) draws further support for this view from the augmentative suffix *-išč-* (the IPA *-iɕʲɕʲ-*). When combined with a masculine base, this suffix derives masculine nouns that take the nominative singular ending *-o-* (spelled *e* after the underlyingly palatalized [ɕʲɕʲ] and neutralized with *i* as elsewhere in unstressed syllables), i.e., *o*-declension nouns (12). Conversely, from a feminine base the same suffix derives feminine nouns of the *a*-declension (13). The diminutive suffixes *-išk-* and *-ušk-* exhibit similar behavior (see Zaliznjak 1977: 74; Doleschal 1996: 121; Hippisley 1996; Garde 1998: 165; Steriopolo et al. 2021), as shown in (14–17):[11]

(12) a. *skandál* ‘scandal$_{M}$’ → *skandál-išče* ‘scandal-AUG.NOM$_{M}$’ [–F] nouns
  b. *seló* ‘village$_{N}$’ → *sel-íšče* ‘village-AUG.NOM$_{N}$’

[10] Jakobson (1939) notes that while the C-declension unambiguously points to the masculine gender, derived stems of the *o*-declension may correspond to a neuter or to a masculine noun, contrasting the neuter *toporíšče* ‘axe handle’ with the masculine *topóríšče* ‘big axe’ derived with the augmentative suffix to be discussed below.

[11] Savchuk (2011), Sitchinava (2011) and Magomedova & Slioussar (2023), among others, note that *o*-declension diminutives and augmentatives can also agree as neuters, complicating the picture even further, and Privizentseva (2023) points out that a colloquial variant of *-išč-* produces regular neuter nouns irrespective of the declension and gender of the base. The diminutive suffix *-išk-*, on the other hand, when combined with inanimate masculine nouns, can also derive masculine nouns of the *a*-declension, *domíška* (see (16a)), which is not a possible option for *-išč-*. I hypothesize that the difference has to do with the more general alignment of the feminine with smaller size (cf. Jurafsky 1996).

(13) a. *síla* ‘strength $_{F}$’ → *síl-išča* ‘strength-AUG.F.NOM’ [+F] nouns
b. *gr^{j}áz^{j}* ‘dirt $_{F}$’ → *gr^{j}az-íšča* ‘dirt-AUG.F.NOM’

(14) a. *xleb* ‘bread $_{M}$’ → *xléb-uško* ‘bread-DIM.NOM $_{M}$’ [–F] nouns
b. *góre* ‘sorrow $_{N}$’ → *gór^{j}-uško* ‘sorrow-DIM.NOM $_{N}$’

(15) a. *síla* ‘strength $_{F}$’ → *síl-uška* ‘strength-DIM.NOM $_{F}$’ [+F] nouns
b. *ból^{j}* ‘pain $_{N}$’ → *ból^{j}-uška* ‘pain-DIM.NOM $_{F}$’

(16) a. *dóm* ‘house $_{M}$’ (C-declension) → *dom-íško* (M, *o*-declension) [–F] nouns
b. *pal^{j}tó* ‘coat $_{N}$’ (indeclinable) → *pal^{j}t-íško* (N, *o*-declension)
c. *plát^{j}je* ‘dress $_{N}$’ (*o*-declension) → *plát^{j}j-íško* (N, *o*-declension)

(17) a. *slúžba* ‘service’ (F, *a*-declension) → *slúžb-iška* (F, *a*-declension) [+F] nouns
b. *šinél^{j}* ‘overcoat’ (F, *ь*-declension) → *šinél-iška* (F, *a*-declension)

To explain these facts, Privizentseva (2023) proposes that the suffix *-išč-* is underspecified for gender features, but set as [+β]. As a result, feminine bases ([+F][–M]) yield the *a*-declension ([+F][+β]) and non-feminine bases yield the *o*-declension ([–F][+β]).[12] The same would be true for the diminutive *-išk-* and *-ušk-*. A class of systematic exceptions from the otherwise general gender-declension correspondence rules in (11) is thus naturally accounted for.[13]

3. Plural declension. Gender distinctions are often claimed to be lost in the plural in Russian, as are the declension classes (see Durnovo 1922: 239; Stankiewicz 1968: 39; Timberlake 2004: 130; Wiese 2004: 352; Pertsova 2015: 231, among others). As Table 1 shows, while this is definitely true for the dative, locative and instrumental plural cases, the realization of the nominative and genitive plural (as well as of the accusative plural, which is syncretic with one of these two) is not as uniform. Focusing on the nominative and genitive (Table 4), Russian plural declension is clearly seen to crosscut the singular declension class,[14] even though many combinations in Table 4 are unproductive (shaded) and some are limited to a handful of nouns (number indicated in parentheses).[15]

[12] Privizentseva (2023) regards [±β] ([±α] in her terms) as a purely formal feature but does not discuss the fact that the morphosyntactic status of the two declension features is not the same: [±β] is never transmitted in derivation. Since no Russian suffix preserves the declension class of the base, [±β] is most likely grounded in phonology. I leave this topic for future research.

[13] Animate nouns, which are governed by semantic gender assignment rules, provide three types of gender-declension mismatches: C-declension masculine role/profession nouns, such as *vrač* ‘medical doctor’ (Corbett 1979, 1983, 1991, 2006; Rothstein 1980; Nikunlassi 2000; Pesetsky 2013; Lyutikova 2015; Magomedova & Slioussar 2021; Privizentseva 2023), which can trigger feminine agreement, but only in the nominative case, *ь*- and *o*-declension title nouns like *veličestvo* ‘majesty’ (Matushansky 2015), and common gender nouns like *sirota* ‘orphan’ and *sud^{j}ja* ‘judge’ (Zaliznjak 1967b: 67–69; Iomdin 1980; Nesset 2001; Privizentseva 2023). As my focus here is on grammatical gender, I set these aside.

[14] Setting apart the heteroclite nouns discussed in footnote 3, all exceptions from the default correlation between gender and conjugation class are animate and therefore are not discussed here beyond noting that they do not introduce any declension patterns distinct from inanimate nouns.

[15] Table does not take into consideration nouns derived with the suppletive suffix *-ьnъk-* (surface [^{j}onok]), taking the plural form *-ьnt-* (surface [^{j}at]), on which see below) and augmented plurals in *-es-* or in *-ьj-*. While the first two take the zero allomorph in the genitive plural, augmented plurals in *-ьj-* also allow *-ov-*, and while all of them require the nominative plural allomorph *-a-*, its accentuation points to a more complex structure than that of a regular plural (see Matushansky 2024a for details).

As Table 4 shows, the declension class and gender of a noun cannot predict its plural declension. All declensions can have *-i-* in the nominative plural (on the nominative plural *-i-*, as in the last row of Table 4; see section 3.2), and a zero or *-ej-* in the genitive plural, and since the gender of an inanimate noun is derivable from its declension class (Corbett 1982), these endings also do not appear to be restricted by gender. Thus, while for most nouns the type of plural declension is correlated with their declension class, both the number and systematicity of exceptions require an explanation. Thus, for instance, while the null genitive plural ending is only found in two (archaic) words of the *ь*-declension and is highly uncharacteristic of the C-declension, the class of C-nouns of the *hussar*-type is large and open (see section 3.3). Also, although the nominative plural *-a-* and the genitive plural *-ov-* are restricted to non-feminine nouns (Jakobson 1984 [1958]: III-§7), their co-occurence is quite restricted (though see section 4.3).

NOM↓	GEN→	ZERO	*-ej-*	*-ov-*
	a	*luná/lúni/lún* ‘moon’	*dólʲa/dóli/doléj* ‘part’	*vájšja/vájšji/vájšjev* ‘Vaishya’ (3)
-i- (+back)	*C*	*gusár/gusári/gusár* ‘hussar’	*kónʲ/kóni/konéj* ‘horse’	*stól/stoli/stolóv* ‘table’
	o	*véko/véki/vék* ‘eyelid’ (6)		*očkó/očkí/očkóv* ‘point’ (2)
	ь	*pʲadénʲ/pʲadéni/pʲadénʲ* ‘inch’ (2)	*lánʲ/láni/lánej* ‘doe’	
-a-	*C*		*jákorʲ/jakorʲá/jakoréj* ‘anchor’	*róg/rogá/rogóv* ‘horn’
	o	*slóvo/slová/slóv* ‘word’	*póle/polʲá/poléj* ‘field’ (3)	plátʲje/plátʲja/plátʲjev ‘dress’
-e-	*C*	*cigán/cigáne/cigán* ‘Roma’		
-i- (–back)	*C*		*čʲórt/čérti/čertéj* ‘devil’ (2)	
	o		*úxo/úši/ušéj* ‘ear’ (5)	

Table 4. Russian plural declension classes

I now argue that the vast majority of these exceptions can be explained by an appeal to the cross-linguistic phenomenon of *inquorate genders* (Ivić 1963 and/via Corbett 1991: 170–174; Riente 2002; Kihm 2005; Acquaviva 2008, among others): small gender subclasses where the singular belongs to one gender and the plural to another:[16]

(18) a. Lak: *q̄aṯa* ‘house’ (gender III in the SG, gender IV in the PL) (Corbett 1991)
b. French: *délice* ‘delight’, *amour* ‘love’, *orgue* ‘organ’ (M in the SG, F in the PL)
c. Serbo-Croatian: *oko* ‘eye.N.SG’ (declension I) vs. *oči* ‘eyes.F.PL’ (declension III)

(19) a. *uovo* ‘egg.M.SG’ vs. *uova* ‘egg.F.PL’ Italian (Riente 2002)
b. *eco* ‘echo.F.SG’ vs. *echi* ‘echo.M.PL’

(20) a. *balneum* ‘bath.N.SG’ → *balneae*.F.PL or *balnea*.N.PL ‘bathhouses’ Latin
b. *iocus* ‘joke, jest.M.SG’ → *ioca*.N.PL or *ioci*.M.PL ‘jokes, fun’
c. *frēnum* ‘bridle, curb.N.SG’ → *frēnī*.M.PL ‘bridles, curbs’

[16] While the interpretation of many putative inquorate plurals involves a meaning change suggestive of the formation of a collective noun, in such pairs as (18c) or (19a) this is not the case, and these inquorate plurals can be used in all contexts where a plural would be expected.

Setting aside for now the various morphosyntactic accounts of the inquorate gender phenomenon, such as Lecarme (2002), Acquaviva (2008, 2009) and Nilsson (2016), what is important for our purposes is the fact that gender change in the plural is an attested phenomenon.[17]

3.1. THE GENITIVE PLURAL ALLOMORPHY AS A FUNCTION OF GENDER AND PALATALIZATION. As Table 4 shows, the genitive plural ending can be realized as surface zero, *-ej-* or *-ov-*. In this subsection, I discuss the role of the gender features in the choice between the four options. I first show (section 3.3.1) that while in the two [–F] declensions the genitive plural *-ej-* is only used after a palatalized stem-final consonant, the difference in exponence between the two [–F] declensions (*-ov-* vs. *-ej-* in the C-declension, zero vs. *-ej-* in the *o*-declension) can be attributed to [±M]. I then discuss the use of the zero allomorph in the *ь*-declension (section 3.1.2), arguing that it does not seem to involve gender change.

3.1.1. INQUORATE NOUNS OF THE *O*-DECLENSION. Diminutives set aside, only 12 *o*-nouns take the nominative plural in *-i-*: the five nouns in (21), the three deverbal nouns in [lo] (22) that permit both nominative plural allomorphs, in *-i-* and in *-a-*, and the four underived nouns in (23). The three nouns in (24), often also included in this list (e.g., Dvoryankova 2023), are diminutives historically and might still be. While one of these nouns is masculine (22b), all others are neuter.

(21) a. *óko/óči/očéj* 'eye (archaic).N.SG.NOM/PL.NOM/PL.GEN',
úxo/úši/ušéj 'ear.N.SG.NOM/PL.NOM/PL.GEN'
b. *koléno*/*koléni*/*kolénej* 'knee.N.SG.NOM/PL.NOM/PL.GEN',
plečó/pléči/plečéj 'shoulder.N.SG.NOM/PL.NOM/PL.GEN',
mudó/múdi/mudéj 'bollock.N.SG.NOM/PL.NOM/PL.GEN' (archaic; other plural forms are also attested)

(22) a. *žválo* 'mandible.N.SG.NOM' (PL.NOM *žválꙑ* or *žvála*, PL.GEN *žvál*)
b. *prilipálo* 'clingfish.M.SG.NOM' (PL.NOM *prilipálꙑ* or *prilipála*, PL.GEN *prilipál*)
c. *sverlílo* 'ship timber beetle.N.SG.NOM' (PL.NOM *sverlílꙑ* or *sverlíla*, PL.GEN *sverlíl*)

(23) a. *véko/véki/vék* 'eyelid.N.SG.NOM/PL.NOM/PL.GEN'
b. *ĺíko/ĺíki/ĺík* 'bast.N.SG.NOM/PL.NOM/PL.GEN'
c. *jábloko*/*jábloki*/*jáblok* 'apple.N.SG.NOM/PL.NOM/PL.GEN'
d. *brʲúxo*/*brʲúxi*/*brʲúx* 'belly.N.SG.NOM/PL.NOM/PL.GEN'

(24) a. *očkó/očkí/očkóv* '(sports) point.N.SG.NOM/PL.NOM/PL.GEN'
b. *uškó/uškí/uškóv* 'eye (of a needle, etc.).N.SG.NOM/PL.NOM/PL.GEN'
c. *drévko/drévki/drévkov* 'staff.N.SG.NOM/PL.NOM/PL.GEN'

As is easy to see, the genitive plural forms of these exceptions are not the same. Setting aside the five nouns in (21), which are discussed in section 3.2, the variation in (22) is straightforwardly handled by the hypothesis that gender change can be subject to speaker variation. Given that all other deverbal nouns in [lo] (open class) are not subject to this optionality, I

[17] The change can also be purely morphological, as in Hebrew, where a masculine noun, such as *xalom* 'dream', can take the feminine plural suffix *-ot* (*xalom**ot*** 'dream.M.PL'), or vice versa (*dvora/dvor**im*** 'bee.F.SG/PL'); further details can be found in Glinert (1989: 454–455) and Faust (2015).

hypothesize that the plural gender change in (22) is made possible by the idiosyncratic meanings of the three nouns involved.[18]

If the three nouns in (22) can become feminine in the plural, the nominative plural *-i-* and the zero genitive plural allomorphs are explained, as these exponents are the default ones for *a*-declension nouns (and the only ones possible with a non-palatalized stem-final consonant; see Table 4). The same analysis (albeit without optionality) can be extended to the four nouns in (23), but the broader range of data discussed in section 4.3 suggests that the cause there is different.

Genitive plural allomorphy in the remaining cases is more complicated. The *-ej-* allomorph is conditioned by the palatalization of the preceding consonant, and thus is only expected with the very few nouns that have a underlyingly palatalized stem-final consonant[19] and with the five nouns in (21) that are characterized by unexpected palatalization in the entire plural paradigm (see section 3.2). While the most frequent genitive plural allomorph for the *o*-declension is the surface zero, the *-ov-* allomorph, otherwise characteristic of masculine nouns, is optionally or obligatorily used in some subclasses of derived *o*-declension nouns, exemplified in (24). I propose that these nouns turn masculine in the plural, which explains not only the genitive plural in *-ov-*, but also the nominative plural in *-i-*. Other nouns that unexpectedly take the genitive plural *-ov-* and the nominative plural *-a-*, i.e., some expressives (diminutives and augmentatives) and some plurals containing the suffix *-ьj-*, are discussed in section 4.3.

3.1.2.GENITIVE PLURAL ALLOMORPHY IN [+F] DECLENSIONS. Three borrowed semantically masculine *a*-declension nouns take the masculine *-ov-* allomorph of the genitive plural:

(25) a. *vájšja/vájšji/vájšjev* 'Vaishya.SG.NOM/PL.NOM/PL.GEN'
b. *kšátrija/kšátrii/kšátrijev* (also *kšátrij*) 'Kshatriya.SG.NOM/PL.NOM/PL.GEN'
c. *párija/párii/páriev* (also *párij*) 'pariah.SG.NOM/PL.NOM/PL.GEN'

This idiosyncrasy can be due neither to their semantics, as other semantically masculine *a*-nouns can only take the other two genitive plural allomorphs (26), nor to their phonology, as shown by the alternative genitive plural forms *kšátrij* and *párij*. In the spirit of the preceding discussion, I propose that the three nouns in (25) change their formal gender to masculine in the plural.

(26) a. *gromíla/gromíli/gromíl* 'thug.NOM.SG/NOM.PL/GEN.PL'
b. *júnoša/júnoši/júnošej* 'a youth.NOM.SG/NOM.PL/GEN.PL'

Unexpected plural inflection need not, however, be associated with gender change, as I will now show. While all *ь*-declension nouns take the nominative plural allomorph *-i-* (surface [i]), two *ь*-nouns (27), both denoting ancient linear measures, are exceptional in that in the genitive plural they may optionally take the zero allomorph rather than the *-ej-* allomorph characteristic of the *ь*-declension. Note that while in (27a) the stem-final consonant surfaces as [nʲ] with both

[18] Singular gender change also cannot be discounted, since the ending is unstressed; see Bethin (2012a) for similar cases.

[19] There are four such nouns. One, *góre* 'grief', is a mass noun and has no plural. The *-ej-* allomorph is required in two of them (*póle* 'field', *poléj*; *móre* 'sea', *moréj*) and optional in one (*véče* '*veche*, a people's assembly in Medieval Rus', *véč* or *véčej*). Their nominative plural exponent is uniformly the default *-a-* of the *o*-declension.

allomorphs (i.e., remains palatalized with both of them), in (27b) it is depalatalized (surfaces as [n]) with the zero genitive plural allomorph (and only in this form):[20]

(27) a. *pʲadénʲ* 'inch', genitive plural *pʲadénʲ* or *pʲadenéj*, instrumental plural *pʲadenʲámi*
b. *sáženʲ* 'sazhen', genitive plural *sážen* or *saženéj*, instrumental plural *saženʲámi*

Whereas in the *o*-declension the choice between the zero and the *-ej-* genitive plural allomorphs is determined by the palatalization of the stem-final consonant, (27) shows that in the *ь*-declension it is not the deciding factor. The same is true for the *a*-declension, where some nouns with palatalized stem-final consonants choose the zero allomorph and others choose the *-ej-* allomorph:[21]

(28) a. *dólʲa/dóli/doléj* 'part.SG.NOM/PL.NOM/PL.GEN'
b. *nedélʲa/nedéli/nedélʲ* 'week.SG.NOM/PL.NOM/PL.GEN'

I propose that *a*-declension and *ь*-declension nouns are not distinguished in the plural, and the distribution of the zero vs. *-ej-* allomorphs is determined not by surface palatalization but by some other underlying distinction. The unexpected loss of stem-final palatalization in the genitive plural in (27b), but not in (27a), provides further evidence for this view, since depalatalization of the final /nʲ/ also occurs in the *a*-declension (29), which allows all three options:

(29) a. *kúznʲa/kúzni/kúznej* 'smithy.SG.NOM/PL.GEN'
b. *kúxnʲa/kúxni/kúxonʲ* 'kitchen.SG.NOM/PL.NOM/PL.GEN'
c. *koféjnʲa/koféjni/koféjen* 'coffee shop.SG.NOM/PL.NOM/PL.GEN'

While the discussion of tendencies towards the regularization of genitive plural allomorphs in Comrie et al. (1996: 130–131), and Pertsova (2015: 248ff.) suggests that stress is an important factor in determining the realization of the genitive plural of feminine nouns, I leave the phonological factor responsible for the options in (27) and (28) as a topic for future research.[22] What is crucial, however, is that two declensions with the same shared gender feature, [+F], pattern the same in the genitive plural, strongly suggesting that regular plural declension is determined by the gender of the singular rather than by its declension class.

3.2. NON-FEMININE NOUNS WITH THE NOMINATIVE PLURAL ENDING *-I-*. As discussed in section 2.1, the phoneme /ɨ/ ([+high][+back][–round]) is realized as [i] after palatalized consonants and

[20] Since Jakobson (1939), the choice between the zero genitive plural allomorph and its *-ov-* and *-ej-* counterparts has been argued to stem from homophony avoidance: the zero genitive plural allomorph is avoided in the C- and *ь*-declensions, where it is segmentally identical to the nominative singular. The two nouns in (27) represent the only counterexamples to this generalization in the *ь*-declension; the many counterexamples in the C-declension are discussed in section 4.1.

[21] While the genitive plural allomorph *-ej-* is infrequent in the *a*-declension, it may appear after some palatalized stem-final consonants and appears to be diachronically replacing the zero allomorph after palatalized stem-final sonorants preceded by a closed syllable (Garde 1998: 151–152; Timberlake 2004: 142; see also Pertsova 2015: 248–249). Garde (1998: 152) and Pertsova (2015: 248ff.) also note the effect of final stress on the overtness of the genitive plural suffix.

[22] One possible hypothesis is that the stem-final palatalized sonorant in these two declensions may correspond to two different underlying representations: a palatalized sonorant ([nʲ]) and a nasal-glide sequence ([nj]), which give rise to the same surface representation ([nʲ]). Such a distinction might provide a partial explanation for the effects in (27) and (28), but reasons of space preclude me from pursuing this idea here.

as [ɨ] after unpalatalized ones. Its [–back] counterpart, the underlying phoneme /i/, on the other hand, triggers mutation of velars and palatalization of all other consonants. This means that the distinction between the default nominative plural ending *-ɨ-* (first row of Table 4) and the exceptional nominative plural ending *-i-* (last row of Table 4) can only be established on the basis of nouns that exhibit palatalization contrasts between the singular and the plural. For seven nouns, three of which are exemplified in the (near-)minimal pairs below, the stem-final consonant either is palatalized in the plural but not in the singular ((30)–(31)), or undergoes velar mutation in the plural (32): while (a) examples are exceptional, (b) examples exhibit the default.

(30) a. *soséd* [sʌsʲéd]/*sosédi* [sʌsʲédʲi] 'neighbor.SG.NOM/PL.NOM' palatalization
b. *domoséd* [dəmʌsʲéd]/*domosédɨ* [dəmʌsʲédɨ] 'homebody.SG.NOM/PL.NOM'

(31) a. *koléno* [kʌlʲénə]/*koléni* [kʌlʲénʲi] 'knee.SG.NOM/PL.NOM' palatalization
b. *člén* [t͡ɕlʲén]/*členɨ* [t͡ɕlʲénɨ] 'member.SG.NOM/PL.NOM'

(32) a. *óko* [ókə]/*óči* [ót͡ɕi] 'eye.SG.NOM/PL.NOM' velar mutation
b. *stok* [stok]/*stóki* [stókʲi] 'drain.SG.NOM/PL.NOM'

The full list of these exceptions consists of two masculine C-nouns (33a) and five neuter *o*-nouns (33b-c).[23] While all the neuter nouns in this list denote naturally paired body parts, other naturally paired neuter body parts, such as *véko/véki* 'eyelid(s)' or *bedró/bʲódra* 'thigh(s)', do not show such behavior. The animate masculine nouns in (33a) do not fall under this generalization at all.

(33) a. *čʲórt/čérti/čertéj* 'devil.SG.NOM/PL.NOM/PL.GEN',
soséd/sosédi/sosédej 'neighbor.SG.NOM/PL.NOM/PL.GEN'
b. *koléno*/*koléni*/*kolénej* 'knee.SG.NOM/PL.NOM/PL.GEN',
plečó/pléči/plečéj 'shoulder.SG.NOM/PL.NOM/PL.GEN' (palatalization undetectable since there is no palatalization contrast for [t͡ɕ] in Russian),
mudó/múdi/mudéj 'bollock.SG.NOM/PL.NOM/PL.GEN' (obscene, archaic; other plural forms are also attested)
c. *óko/óči/očéj* 'eye.SG.NOM/PL.NOM/PL.GEN',
úxo/úši/ušéj 'ear.SG.NOM/PL.NOM/PL.GEN'

As can be further seen from (33), all of these nouns take the genitive plural allomorph *-ej-*, which is conditioned by a palatalized stem-final consonant. As (34) shows, this consonant remains palatalized or mutated in the entire plural paradigm (just like it does in the *ь*-declension):

(34) a. *čertʲámi* 'devil.PL.INS', *sosédʲami* 'neighbor.PL.INS'
b. *kolénʲami* 'devil.PL.INS', *plečámi* 'shoulder.PL.INS', *mudʲámi* 'bollocks.PL.INS'
c. *očámi* 'eye.PL.INS', *ušámi* 'ear.PL.INS'

The combination of the nominative plural in a surface [i] and the genitive plural in *-ej-* is attested in three declensions (cf. *lánʲ* 'doe' for the *ь*-declension, *dólʲa* 'part', for the *a*-declension, and *kónʲ* 'horse' for the C-declension in Table 4). For all three declensions, this combination

[23] The archaic obscene noun *mudó* 'bollock' has two variants of the nominative plural (Dal' 2001 [1863–1866]; Vasmer 1986): the *i*-plural in (33c) and the *e*-plural (*mudé*), discussed in section 4.1. In addition, it has a number of dialectal plural forms (*mudá*, *mudʲá*, *mudɨ́*, *mudʲó*).

depends on an underlyingly palatalized stem-final consonant, which is fully compatible with /ɨ/ as the underlying representation of the nominative plural ending in these cases. However, the nominative plural in the surface [ɨ] is non-existent for the *o*-declension (with a few exceptions, see sections 3.3.1 and 4.3), and the palatalization of the stem-final consonant is exceedingly rare (see footnote 19).

It is easy to show that gender change by itself is not enough to derive this class of exceptions, as it would not explain stem-final palatalization in the plural (which is the cause for the surface [i] rather than [ɨ] in the nominative plural and the genitive plural in *-ej-*). As systematically palatalized stem-final consonants are the hallmark of the *ь*-declension, could the palatalization/mutation of the final consonant for plurals in (33) result from the change to the *ь*-declension class? And if so, how can this change be achieved?

Two problems arise with the hypothesis itself. Firstly, in the framework argued for in section 2, the transition from the *o*-declension ([–F][+β] in Table 3) to the *ь*-declension ([+F][–β] in Table 3) involves a simultaneous change in both features, i.e., a change from [–F] to [+F] and a change from [+β] to [–β]. While gender change in the plural is independently motivated, no such argument can be constructed for [±β]. In fact, since the feature [±β] is purely morphological, it is not clear what can provide independent motivation for its change in the plural.

Secondly, neither gender nor declension class change are expected to change the accentuation of the stem. This expectation is fulfilled, in fact, for five of these nouns: accented stems in (35a) retain stress on the same (stem-final) syllable in the singular and in the plural, whereas unaccented stems in (35b) exhibit initial stress in the singular and in the nominative plural (i.e., with suffixes known to be themselves unaccented; see Melvold 1989) and post-stem stress with plural oblique endings (which are all accented). The behavior of the two post-accenting stems in (35c), on the other hand, is altogether unexpected, since they behave as unaccented in the plural.[24]

(35) a. *koléno/koléni/kolénej* 'knee.SG.NOM/PL.NOM/PL.GEN', accented
soséd/sosédi/sosédej 'neighbor.SG.NOM/PL.NOM/PL.GEN'

b. *óko/óči/očéj* 'eye.SG.NOM/PL.NOM/PL.GEN', unaccented
úxo/úši/ušéj 'ear.SG.NOM/PL.NOM/PL.GEN',
čʲórt/čérti/čertéj 'devil.SG.NOM/PL.NOM/PL.GEN'

c. *plečó/pléči/plečéj* 'shoulder.SG.NOM/PL.NOM/PL.GEN', post-accenting
mudó/múdi/mudéj 'bollock.SG.NOM/PL.NOM/PL.GEN'

The change in accentuation cannot be attributed to a change in a feature, be it [±F], [±M] or [±β], given that accented, unaccented and post-accenting stems are represented in all declension classes and all genders (see Halle 1973, 1975, 1997).

I propose that both the unexpected stem-final palatalization and stress change in the plural follow from a plural augment similar to those in (36). The lack of the accentual pattern in (35c) elsewhere in Russian nominal declension supports the intuition that derivation is involved.

[24] Zaliznjak (2010) lists *plečó* 'shoulder' as the only noun in this accentual class, *mudó* 'bollock' being excluded from the dictionary along with the rest of the obscene vocabulary.

(36) a. *nébo/neb**es**á/neb**és*** ‘sky.SG.NOM/PL.NOM/PL.GEN’ plural augment *-es-*
b. *muž/mužj**já**/mužéj* ‘husband.SG.NOM/PL.NOM/PL.GEN’ plural augment *-ьj-*

While the suffixes in (36) are overt, the hypothetical plural augment in (35) is suprasegmental, i.e., phonologically null but influencing palatalization and stress. Assuming that it introduces a floating [–back] feature would yield the observed changes in the stem-final consonants, and it may, like any other affix, introduce an accent.[25] While I do not attempt to derive the resultant stress patterns here, I note that the three stress patterns in the plurals in (35) can also be unified as the alternation between stem-final stress with unaccented endings (i.e., the nominative plural ending in (35)) and post-stem stress with accented ones (i.e., plural oblique endings in (35)). In Matushansky (2024b), I treat the same pattern in Russian short-form adjectives in terms of an abstract vocalic suffix deleted before the vocalic inflection, and the same approach would be applicable here.

A further advantage of introducing an additional suffix is that it can also be taken to enable gender change. While the simple addition of a suprasegmental suffix can explain the declension of masculine nouns in (33a) by analogy with *kónʲ* ‘horse’ in Table 4, it is insufficient for the neuter nouns in (33b-c): all *o*-declension nouns with a palatalized stem-final consonant take the nominative plural allomorph *-a*. Gender change is therefore necessary too, and the hypothesis ascribing the unexpected stem-final palatalization in the plurals in (35) to a separate suffix also provides us with a mechanism for this change.

Indeed, a suffix can reasonably be expected to have both gender and declension class. Taking the hint from the cognate Serbo-Croatian noun in (18c), I propose that the segmentally null plural augment in (33) is in fact feminine ([+F]), which would allow the treatment of these seven nouns along the same lines as feminine plurals discussed in section 3.1.2 without the need to determine the value of their [±β] feature.[26] The seven inquorate nouns in (33) therefore provide evidence for the representation of the plural as a separate node, which in turn suggests that plural declensional endings realize case in the context of a plural rather than as a case-number bundle.

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[25] Independent evidence that such a suffix is possible in Russian comes from such null-derived deadjectival nouns of the *ь*-declension as *žestʲ* ‘harsh stuff’ (from the root *-žest-* ‘rigid, cruel’) or *krutʲ* ‘cool’ (from the root *-krut-* ‘cool’). It seems unlikely that this derivational suffix is identical to that in (33).

[26] While in Italian and in Serbo-Croatian the gender change is reflected in syntax, in Russian it is not, since gender distinctions are neutralized in the plural. An anonymous reviewer inquires whether the hypothesized gender change is reflected by the gender of the cardinal *one* in partitives (‘one of my eyes’). The answer is no (i), but interestingly, it is also no for Serbo-Croatian (ii-a), where the hypothesized gender change is reflected in plural agreement (ii-b):

(i) odno/*odna iz tvoix očej Russian
one.NSG/FSG from your.PL.GEN eyes.PL.GEN

(ii) a. jedno/*jedna od mojih očiju (Serbo-Croatian, Marijana Marelj, p.c.)
one.NSG/FSG of my.PL.GEN eyes.PL.GEN
b. t-e velik-e oč-i
DEM-F.PL big-F.PL eye-PL.NOM

Russian and Serbo-Croatian inquorate nouns appear to differ in this respect from both Romanian and Italian inquorate nouns discussed by Acquaviva (2008: 136–148), though his test cases are different. I leave this issue for future research.

As a discussion of the nature of this suffix (and of plural augments in general) is a task far beyond the scope of this paper, I now turn to the remaining class of inflectionally irregular plurals, those of the C-declension.

3.3. INQUORATE NOUNS OF THE C-DECLENSION. C-declension nouns, as seen in Table 4, are special in two ways: firstly, they can combine with all three genitive plural allomorphs, and secondly, they take all four nominative plural endings available in Russian. While nominative plural endings characteristic only of the C-declension nouns, *-e-* and the accentually dominant *-a-*, will not be linked to gender change (see sections 4.1 and 4.2), and the *-i-* ending has been reduced to *-ɨ-* (section 3.2), the C-declension contains several subclasses of nouns that become feminine in the plural without any palatalization.

The inquorate nouns of the C-declension can be detected by their genitive plural form. As noted by Jakobson (1957), the distribution of the two overt genitive plural allomorphs, *-ov-* and *-ej-*, in the C-declension is determined by the stem-final consonant: the *-ej-* allomorph appears only after palatalized consonants and the shibilants *š*, *č*, *šč* and *ž* (which are all underlyingly palatalized), while *-ov-* is only used after non-palatalized consonants and *j* (for various analyses of this fact, see Coats 1974; Halle 1994; Bailyn & Nevins 2008; Halle & Nevins 2009; Pertsova 2015, among others). The choice between an overt genitive plural allomorph and its zero counterpart has been ascribed to homophony avoidance (Jakobson 1939, 1957; Pertsova 2015; Munteanu 2021, among others), to the thematic vowel determining the realization of the suffix (Halle 1994; Bailyn & Nevins 2008; Halle & Nevins 2009), or to root size (Caha 2021). My proposal (gender change enabled by the plural suffix) is closest to the last two analyses, since I also do not rely on paradigms but rather hypothesize an abstract structural distinction between different nouns that can be independently motivated by inquorate genders.

Three types of C-declension nouns atypically take the zero genitive plural (Garde 1998: 174–176; Timberlake 2004: 138–139).[27] The first type contains social-cluster nouns, such as ethnonyms of historically local peoples (37), social-role nouns in *-ʲanin-* (38), and loanwords denoting military roles (39). The second type consists of certain fruits and vegetables (40), and the third of habitually paired items (41). While Timberlake (2004: 138–139) notes that these nouns denote entities more often encountered in quantities larger than one, it is not clear how this generalization can explain these facts.

(37) a. *turkmén* 'Turkman.SG.NOM/PL.GEN'
b. *burʲát* 'Buryat.SG.NOM/PL.GEN'

(38) a. *graždanín* 'citizen' → *gráždan* 'citizens.PL.GEN'
b. *krestʲjánin* 'peasant' → *krestʲján* 'peasant.PL.GEN'

(39) a. *gusár* 'hussar.SG.NOM/PL.GEN'
b. *soldát* 'soldier.SG.NOM/PL.GEN'

[27] Measure nouns, such as *kilográmm* 'kilogram', are also often included in this list. While Bethin (1984) explains their lack of a genitive plural suffix by local markedness, Ionin & Matushansky (2006: 196) argue that they take no ending only when combining with cardinals, i.e., in the adnumerative form (Mel'čuk 1985: 430–437) rather than in the genitive plural one.

(40) a. *baklažán* ‘eggplant.SG.NOM/PL.GEN’
b. *apeľsín* ‘orange.SG.NOM/PL.GEN’

(41) a. *sapóg* ‘boot.SG.NOM/PL.GEN’
b. *čulók* ‘stocking’, genitive plural *čulók* or *čulkóv*

Extending my analysis to these groups, I propose that their plural suffix is also feminine, with the choice of the zero genitive plural exponent reflecting the default for *a*-declension nouns ending in a non-palatalized consonant. The lexical-semantic generalizations underlying these groups can be appealed to as the conditioning factor for the choice of this plural suffix.

4. Conclusion and further issues. While the *ь*-declension class contains no (detectable) inquorate nouns,[28] the *a*-, the *o*- and the C-declensions do. A number of *a*- and *o*-declension nouns take the unexpected genitive plural in *-ov*-, some *o*-declension nouns combine with the unexpected nominative plural in *-i*-, whereas large classes of C-declension nouns appear with the zero genitive plural allomorph. Finally, seven [–F] nouns with unexpected palatalization or mutation of the stem-final consonant in the plural require the nominative plural in the surface [i] and the genitive plural in *-ej*-. Because in at least the last case (section 3.2) gender change is accompanied by a change in stress and palatalization, which I take to indicate the presence of a suprasegmental suffix, I propose that a separate number head is present in plurals (though most likely not in singulars) and that gender change in general can be attributed to the gender of the exceptionally selected plural suffix realizing this head.

I conclude therefore that number is distinct from gender (and case) even in a language where they appear to be realized by the same morpheme, but in an unexpected way: while nominal gender is independent of number, plural can be specified for its own gender.[29] Furthermore, the hypothesis that the plural forms its separate node is not new: Beard (1997) cites the proliferation of plural declensions as the reason for treating number in Russian as a derivational rather than inflectional category, while Kihm (2005) adopts this take for all plurals and Acquaviva (2008), for inquorate genders only. If, however, number is a separate suffix, its ability to have its own gender, whether inherent or inherited from the stem, is not surprising.

Given that plural gender change is motivated independently and that at least one of the two plural augments in (36) can be taken to also instantiate the number node (see Matushansky 2024a on the augment *-ьj*-, but also section 4.3 below), the hope arises of reducing the large number of plural declension classes in Table 4 to maximum four: three for each gender and perhaps one more for C-nouns with a nominative plural in *-a*- (section 4.2 below). Russian nominal declension therefore provides evidence for the separation of gender and number nodes in nouns, for the projection of the plural as a separate node with its own gender and also for separating number from case.

[28] The plural behavior of the exceptional heteroclite nouns in footnote 3 is fully consistent with their gender.

[29] An anonymous reviewer asks whether a single position, filled by one gender in the singular and by another in the plural would not be enough. Firstly, this approach would regard gender as a property of a functional head rather than the noun, with inquorate genders treated as the norm rather than as exceptions. Secondly, an extra mechanism would be required to compute gender from the combination of the stem and the number. Finally, I am aware of no evidence for the presence of a separate number or gender node in the singular in Russian (singulatives in *-in*- being completely regular with respect to declension; see section 4.1 for some discussion).

In the remaining subsections, I describe cases that do not fit into the paradigm described so far and evidence against some of my assumptions.

4.1. THE SOCIAL-CLUSTER NOMINATIVE PLURAL ALLOMORPH *-E-*. The nominative plural ending *-e-* is only used in the variant plural of the archaic obscene noun *mudó* 'bollock' (fn. 23), where it is stressed, and with a subset of social-cluster nouns (Timberlake 2004: 137; Garde 1998: 174, 176).[30] In most of the latter the singular forms contain the productive suffixal complex *-ʲanin-* (42), in turn based on the singularizer *-in-* ((43a); see also Geist & Kagan 2023), but there are a few lexical exceptions (43b-c):[31]

(42) a. *graždanín* 'citizen' → *gráždane* 'citizens'
b. *krestjánin* 'peasant' → *krestjáne* 'peasants'

(43) a. *bárin* 'lord', *bojárin* 'boyar lord' → *báre*, *bojáre*
b. *cɨgán* 'Gypsy' → *cɨgáne*
c. *xazár* 'Khazar', *bulgár* 'Bulgarian', *molokán* 'Molokan (an Orthodox sect)' (archaic forms of *xazárin* 'Khazar', *bolgárin* 'Bulgarian', *molokánin* 'Molokan')

Since all nouns with the nominative plural *-e-* take the zero genitive plural allomorph, they can straightforwardly be unified with the social-cluster nouns discussed in section 3.3. I propose that *e*-plurals are derived by the same gender change. Assuming that *-e-* is an allomorph of *-ɨ-*, lexically conditioned by the ethnonymic suffix *-ʲan-* and by the few roots in (43), entails that the plural suffix involved is transparent for allomorphy, as expected from a segmentally null suffix.

4.2. THE NEUTER PLURAL ENDING THAT IS NOT NEUTER. Another remaining puzzle is the unexpected *a*-plural in the C-declension (Zaliznjak 1967a; Comrie et al. 1996: 127–129): while in other Slavic languages the nominative plural in *-a-* is restricted to neuter nouns, in Russian C-declension nouns can form their nominative plural with both *-ɨ-* (44a) and *-a-* (44b), with the choice often subject to variation (45), sometimes linked to register (45a):

(44) a. *díktor/díktorɨ/díktorov* 'announcer.SG.NOM/PL.NOM/PL.GEN'
b. *dóktor/doktorá/doktoróv* 'doctor.SG.NOM/PL.NOM/PL.GEN'

(45) a. *míčman* 'midshipman', pl. *míčmanɨ*, prof. *mičmaná*
b. *pólʲus* 'pole', pl. *pólʲusɨ* or *polʲusá*

Contrary to all cases discussed above, several reasons can be adduced to *not* assume gender change for masculine *a*-plurals.

The first piece of evidence against treating masculine *a*-plurals as plural neuters comes from the genitive plural allomorph that they take: *-ej-* for a palatalized stem-final consonant, and *-ov-*

[30] The vowel [e] is also present in the plural functional adjectives *te* 'those', *vse* 'all.PL' and *óbe* 'both.F.PL'. In these adjectives, [e] appears in all oblique cases, but in a different status. For the former two (cf. the oblique *tem* 'that.PL.DAT', *vsem* 'all.PL.DAT'), Halle & Matushansky (2006) treat [e] as an atypical functional variant of the plural theme. The last case, *óbe* 'both.F.PL.NOM', is a unique case of gender marking in the plural: [e] precedes the usual adjectival theme *-ɨ-* in oblique cases, cf. *obéim* 'both.F.PL.DAT', contrasting with the masculine *óba* 'both.M.PL.NOM', *obóim* 'both.M.PL.DAT'. Neither can be assimilated to the nominal plural *-e-*.

[31] The suffix *-in-* can exceptionally be associated with the regular plural *-ɨ-* (e.g., *tatárin*/*tatárɨ* 'Tartar.SG/PL', cf. Garde 1998: 176) or combine with it (e.g., *osetín/osetínɨ* 'Ossetian.SG/PL', cf. *Osétija* 'Ossetia').

for a non-palatalized one (46). Since the genitive plural *-ov-* allomorph is characteristic of masculine C-nouns, masculine *a*-plurals should be masculine.

(46) a. *profésso**r**/professorá/professoróv* 'professor.SG.NOM/PL.NOM/PL.GEN'
b. *flígel**ʲ**/fligel**ʲ**á/fligeléj* '(house) wing.SG.NOM/PL.NOM/PL.GEN'

Secondly, the pattern in (46) is highly productive (Zaliznjak 1967a): not counting compounds or *pluralia tantum* nouns, Zaliznjak (2010) lists approximately 300 nouns that show it, and the number keeps growing. Since new additions to this class are conditioned by stress patterns (see Worth 1983 for the accentual profile of stems likely to enter this group) rather than by lexical semantics, the link to a plural-triggered change in gender is unlikely (though see section 4.3).

Third, unlike the neuter nominative plural *-a-*, the masculine nominative plural *-a-* is always stressed (Coats 1976; Zaliznjak 1985; Timberlake 2004: 136; Munteanu 2021), which means that it is accentually dominant: even with accented stems, diagnosed by the stem-medial stress in the singular, stress appears after the stem in the plural in *-a-* (47). Note that, contrary to various proposals connecting overt genitive plural allomorphs to homophony avoidance, this stress shift does not enable the zero genitive plural allomorph:

(47) a. *profésso**r**/profé**ss**ora/professorá* 'professor.SG.NOM/GEN.SG/PL.GEN'
b. *flígel**ʲ**/flígel**ʲ**a/fligel**ʲ**á* '(house) wing.SG.NOM/GEN.SG/PL.GEN'

While I do not try to propose an analysis here, I conclude that C-nouns with the nominative plural in *-a-* should not be regarded as undergoing gender shift in the plural.

4.3. POTENTIAL COUNTEREXAMPLES. A serious challenge for the gender-based plural system described above comes from diminutives. While most underived neuters in Russian take the ending *-a-* in the nominative plural (for exceptions, see sections 3.1.1 and 3.2), such is not the case for neuter diminutives in [k], which all require *-i-* (48):

(48) a. *pis**ʲ**mó/pís**ʲ**ma* 'letter$_{N.SG/PL}$' (*a*-ending) → *pis**ʲ**míško/pis**ʲ**míški* 'letter$_{N.DIM.SG/PL}$' (default *i*-ending)
b. *ózero/oz**ʲ**óra* 'lake$_{N.SG/PL}$' → *ozerkó/ozerkí* 'lake$_{N.DIM.SG/PL}$'
c. *kolesó/kol**ʲ**ósa* 'wheel$_{N.SG/PL}$' → *kol**ʲ**ósiko/kol**ʲ**ósiki* 'wheel$_{N.DIM.SG/PL}$'
d. *póle/pol**ʲ**á* 'field$_{N.SG/PL}$' → *pól**ʲ**uško/pól**ʲ**uški* 'field$_{N.DIM.SG/PL}$'

In fact, setting aside the inquorate neuters in (21) and (22), all other neuters with the nominative plural in *-i-* end in a velar (in (23), repeated below). The opposite is not true: not all velar-final stems have nominative plurals in *-i-* (surface [i]). While there are only three *x*-final *o*-declension nouns, two of them have the nominative plural in *-a* (cf. (23d) vs. (49a)), as does the only *g*-final one (49b). Finally, even among *k*-final *o*-declension stems there are two (50) with the nominative plural in *-a-*.

(23) a. *véko/véki/vék* 'eyelid.SG.NOM/PL.NOM/PL.GEN'
b. *ĺíko/ĺíki/ĺík* 'bast.SG.NOM/PL.NOM/PL.GEN'
c. *jábloko/jábloki/jáblok* 'apple.SG.NOM/PL.NOM/PL.GEN'
d. *br**ʲ**úxo/br**ʲ**úxi/br**ʲ**úx* 'belly.SG/PL'

(49) a. *líxo/líxa* ‘trouble’, *éḱxo/éḱxa* ‘echo’
b. *ígo/íga* ‘yoke.SG/PL’, *blágo/blágá* ‘welfare.SG/PL’

(50) a. *óblako*/*oblaká* ‘cloud.SG/PL’ (also the diminutive *óblačko*/*oblačká* ‘cloud.SG/PL’)
b. *vójsko*/*vojská* ‘army.SG/PL’

These facts suggest that unlike (23), which should probably be regarded as a case of gender change to the feminine, the nominative plural in *-ɨ-* of *k*-final *o*-declension nouns requires a different explanation. In this context, it is puzzling that some *k*-final neuters allow the genitive plural in *-ov-*, which has so far been associated with the masculine. While in the historical diminutives in (24) this masculine genitive plural allomorph coincides with the masculine nominative plural *-ɨ-*, in (51) this is not the case:

(51) a. *óblako*/*oblaká*/*oblakóv* ‘cloud.SG.NOM/PL.NOM/PL.GEN’
b. *óblačko*/*oblačká*/*oblačkóv* ‘cloud.DIM.SG.NOM/PL.NOM/PL.GEN’

While I can provide no explanation for this effect, its potentially phonological nature is supported by the fact that the genitive plural in *-ov-* is also allowed in *o*-declension nouns derived with the diminutive suffix *-ьc-* (52) and the collective suffix *-ьj-* (53), and required in nouns derived with the augment *-ьj-* (54a), including almost all *pluralia tantum* in *-ьj-*, as in (54b), the only exception being *ugódʲja* ‘useful land.PL’:

(52) a. *bolótce*/*bolótca*/*bolótcev* ‘bog.DIM.SG.NOM/PL.NOM/PL.GEN’ *-ov-*
b. *dolótce*/*dolótca*/*dolótcev* or *dolótec* ‘bog.DIM.SG.NOM/PL.NOM/PL.GEN’ zero/*-ov-*
c. *sukónce*/*sukónca*/*sukónec* ‘cloth.DIM.SG.NOM/PL.NOM/PL.GEN’ zero

(53) a. *žnivʲjó/žnívʲja/žnívʲjev* ‘stubble field.SG.NOM/PL.NOM/PL.GEN’ *-ov-*
b. *ústʲje*/*ústʲja*/*ústʲjev* or *ústij* ‘river mouth.SG.NOM/PL.NOM/PL.GEN’ zero/*-ov-*
c. *soústʲje*/*soústʲja*/*soústij* ‘secondary river mouth.SG.NOM/PL.NOM/PL.GEN’ zero

(54) a. *dérevo/derévʲja/derévʲjev* ‘tree.SG.NOM/PL.NOM/PL.GEN’ *-ov-*
b. *loxmótʲja/loxmótʲjev* ‘rags.PL.NOM/PL.GEN’ *-ov-*

These cases would seem to represent a counterexample to the generalization obligatorily linking the genitive plural ending *-ov-* to the nominative plural ending *-ɨ-*. However, the orthographic “a” in these cases can in principle also correspond to a phonological [ɨ] (cf. Bethin 2012a,b): Russian has vowel reduction in unstressed syllables, and after palatalized consonants all vowels except /u/ are neutralized to [ɨ] (see Halle 1959, 1965; Crosswhite 1999, 2000; Iosad 2012; Enguehard 2018, among others), though the status of the shibilants (*š*, *ž* and *c*) is not altogether clear (Kalenchuk 2021). I leave the investigation of this hypothesis for future research.

An appeal to gender change can, however, account for the nominative plural *-a-* in combination with the genitive plural ending *-ov-* for the neuter nouns in (51), as well as for the unique semi-suppletive noun in (55):

(55) *súdno/sudá/sudóv* ‘marine vessel.SG.NOM/PL.NOM/PL.GEN’

As noted in Švedova (1980: 493) and Vinogradov (1986: 130), among others (see also Dvoryankova 2023), the only *k*-final nouns with the nominative plural in *-a-* are those that have post-stem stress in the plural. A change to the masculine gender in the plural could also bring about the dominant accented nominative plural suffix *-á-* discussed in section 4.2. The difference

between (50b), which takes the zero genitive plural allomorph, and (50a) and (55), which take the genitive plural ending *-ov-*, would then be explained: (50b) remains neuter in the plural and takes the usual neuter plural allomorphs (the plural nominative *-a-* and the genitive plural zero), whereas (50a) and (55), while masculine in the plural, take the alternative masculine plural declension, with the accentually dominant plural endings: *-a-* (nominative) and *-ov-* (genitive), as in (46).

While this proposal does not account for the unexpected non-neuter nominative-genitive plural combination in (52)–(54), the possibility arises that it might exist as sort of an underspecified option between the masculine ([+M][–F]) and the neuter ([–M][–F]) for the plurals that are underspecified for gender, with the dominant accentuation pattern due to the change from [+M][–F] to [–F]. I leave this hypothesis for further investigation.

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