

FLOATING A NEW TAKE ON THE RUSSIAN DECLENSION

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1. INTRODUCTION: RUSSIAN NOMINAL DECLENSION

Russian declension classes can be divided into pairs on the basis of cross-class syncretism:

Table 1: Nominal declension classes (after Corbett (1982))

#	CASE	O	C	I	A
		N(/M)	M	F	F(/M)
SG	NOM	božestv-ó	stól	bolj	čert-á
	ACC	ACC=GEN/[+ANIM], ACC=NOM/[-ANIM]		ACC=NOM	čert-ú
	GEN	božestv-á	stol-á	bolj-í	čert-í
	DAT	božestv-ú	stol-ú	bolj-í	čert-é
	LOC	božestv-é	stol-é	bolj-í	čert-é
	INS	božestv-óm	stol-óm	bolj-ju	čert-ój(u)
PL	NOM	božestv-á	stol-í	bolj-í	čert-í
	ACC	ACC=GEN for animates, ACC=NOM for inanimates			
	GEN	božéstv-Ø	stol-óv	bolj-ěj	čert-Ø
	DAT	božestv-ám	stol-ám	bolj-ám	čert-ám
	LOC	božestv-áx	stol-áx	bolj-áx	čert-áx
	INS	božestv-ámi	stol-ámi	bolj-ámi	čert-ámi
		‘deity’	‘table’	‘pain’	‘line’

Outside of the system (but see Privizentseva 2023):

- some masculine nouns in the *o*- and *a*-declensions: either **expressives** (diminutives and augmentatives) derived from masculine nouns **or animates**
- the closed class of 12 non-feminine nouns in *-ŷ-* (**heteroclite nouns**)
- the open class of **indeclinable nouns** (semantic gender assignment, inanimate ones are mostly neuter, see Chuprinko, Magomedova and Slioussar 2023)

Questions:

- What is a declension class?
- How are heteroclite nouns handled?
- **What makes a noun declinable or indeclinable?**

Proposal: it is phonological

2. INDECLINABLE NOUNS

A diacritic feature [\pm indeclinable] predicts no phonological generalizations about the shape of indeclinable nouns

- Most indeclinable loanwords do not fit into Russian declension classes by virtue of having an unusual final vowel
- There are no inanimate consonant-final indeclinable nouns

Some phonologically indeclinable nouns:

- (1) a. *kengurú* ‘kangaroo’, *šimpanzé* ‘chimpanzee’, *grizli* ‘grizzly’ animate
 b. *aven’ú* ‘avenue’, *pensné* ‘pince-nez’, *viski* ‘whisky’ inanimate

Others could have fitted, except for the gender clash:

- female-denoting C-final nouns (2): if ending in a palatalized consonant (2b) very marginally can decline as an *ĭ*-declension noun (extremely rare, the *ĭ*-declension rarely admits new members)
 - human-denoting *o*-final nouns (3): never decline, even when they are (near-)native (the same is true for *o*-final toponyms)
 - non-feminine *a*-final nouns (4) and neuter *o*-final nouns (5), though not all!
- (2) a. *madám* ‘Madame’, *miss* ‘Miss’, *mamaxén* ‘mumsy’ C-final female-denoting
b. *mamzéli* ‘miss (coll.)’, *Nikóli* ‘Nicole’
- (3) a. *májko* ‘maiko (an apprentice geisha)’
b. *kápo* ‘prisoner functionary in a Nazi camp’, *Lukašénko* ‘Lukashenko’
- (4) a. *Dumá* ‘Dumas’, *ára* ‘Ara (a macaw type)’, *máya* ‘Maya’ a-final non-feminine
b. *bra* ‘sconce’, *kinóa* ‘Quinoa’
c. *šva* ‘schwa’, *fuá-grá* ‘fois gras’
- (5) a. *kinó* ‘cinema’, *avokádo* ‘avocado’
b. *dezabiljé* ‘deshabillé’, *kófe* ‘coffee’, *rokokó* ‘Rococo’

Problem: why do nouns like (4)-(5) fail to decline?

There should be no semantic clash for human-denoting *a*-nouns (4a) or mass-denoting neuter nouns (5b):

- (6) a. *gromíla* ‘a thug’ male-denoting *a*-declension
b. *júnoša* ‘a youth’

And inanimate *a*-final loanwords can turn **declinable when they have become feminine** and phonologically adjusted (which is why the accusatives *fuagrú*, *shvu* and *kinvú* are all attested)

So why don't they always? What's the difference between a schwa and a sconce?

What happened to *schwa* to make it declinable?

Proposal: phonology-based declension classes and a consonantal or floating stem-final segment

3. THE FINAL SEGMENT OF DECLINABLE NOUNS

Proposal: the declension class is determined by the final segment of the stem:

- stems ending in a floating *a* belong to the *a*-declension
- stems ending in a floating *o* belong to the *o*-declension
- stems ending in a floating consonant belong to the *ĭ*-declension
- other consonant-final stems belong to the C-declension
- all others are indeclinable

Indeclinable stems all end in non-floating vowels

Inanimate nominal gender would remain derivable from the declension class (unless explicitly specified otherwise by semantics (and in a few cases, by a formal feature))

The issue that I will not address for now: accentuation

Things to do: **motivation** and **benefits**

3.1. The floating final segments in the *ĭ*-declension

Independent evidence exists that the *ĭ*-declension (and the *ĭ*-declension only) contains nouns with a floating final consonant

3.1.1. A floating nasal

The heteroclitite ten nouns in *-mja* with an [n] lost in the nominative singular and the nouns *dit'á* ‘child’ and *tel'á* ‘calf’ (both obsolete and with defective paradigms):

- (7) a. *vrém'a/vrémeni/vrem'ón* ‘time.NOM/GEN=DAT=LOC/INS’
 b. *sém'a/sémeni/semián* ‘seed.NOM/GEN=DAT=LOC/INS’
 c. *dit'á/dit'áti* ‘child.NOM/GEN=DAT=LOC’

Lightner 1965:59-62, 1967:1187, 1969:49-50, Kayne 1967, Melvold 1989:237, Halle 2004: the nouns in (7) have consonant-final roots and trigger allomorphy in the nominative singular: its exponent is null rather than the usual (front) yer:

- (8) a. /vremen/ + Ø → [vr'ém:ə]; /vremen/ + i → [vr'ém:iɪ];
 b. /dit-ent/ + Ø → [d'it'á]; /dit-ent/ + i → [d'it'áti] (obsolete)

The [eNV]/[jaC], [iNV]/[jaC] and [oNV]/[uC] alternations are attested in modern Russian: Historically, tautosyllabic VN sequences underwent nasalization (*iN, *eN → *ę (traditional spelling, actually probably [ĕ]), *oN, *aN → *ǫ ([ǫ̃])) in pre-Proto-Slavic (Kim 2018:1979) and were then denasalized becoming *a* and *u* (in East Slavic for sure)

- (9) active present participle suffix *-nšč-* (also the 3PL *-nt-*)
 a. *kúr-i-Ø-t* ‘smoke-PRES-TH-3SG’: *kúr*^[a]*áščij* ‘smoking.MSG’ front vowel before nasal: [a]
 b. *ved'i-ó-t* ‘sing-PRES-3SG’: *ved*^[u]*úščij* ‘singing.MSG’ back vowel before nasal: [u]

Historically also the 1SG ending: unmotivated presently for the 2nd conjugation:

- (10) a. *da[d]-š'i* ‘give-2SG’: *da[d]-m* ‘give-1SG’ (cf. *da[d]-i-m* ‘give-PRES-1PL’)
 b. *ved'i-ó-t* ‘sing-PRES-3SG’: *ved*^[u] ‘sing-1SG’
 c. *kúr-i-Ø-t* ‘smoke-TH-PRES-3SG’: *kur*^[u]*i-ú* ‘smoke-PRES-3SG’ no underlying back vowel

Also root-internally for some verbal roots, like the athematic verbal root *-mĭn-* ‘knead’:

- (11) a. *razo*^[mn]*l-o-t* ‘mash-PRES-3SG’ pre-vocalic
 b. *razm*^[a]*l-t'i* ‘mash-INF’ pre-consonantal
 c. *raz*^[min]*l-at'i* ‘mash.IMPFV.INF’ after tensing, pre-vocalic

Problem: tautosyllabic VN-sequences are normal in Modern Russian (e.g., *búnker* ‘bunker’, *régentša* ‘female regent’, *xánša* ‘female khan’)

Lightner-Halle: no VN/V alternation expected in non-derived environments (the VN-sequence is either root- or morpheme-internal) and the suffix *-š-* could begin with a yer (impossible to test)

My proposal: the relevant nasal is floating (the intermediate step is historical):

- [V_[-back]^NC] → [ĕC] → [aC]
- [V_[+back]^NC] → [ǫ̃C] → [uC]
- otherwise [V^N] → [VN]

A floating nasal in cases like (7)-(11) divorces the issue from other surface tautosyllabic VN instances

The nominative singular ending can be the same for the entire *ř*-declension and maybe also coincide with the C-declension

Unification with the C-declension and the need to lower the root yer in *bol'* 'pain' argues for a back yer
Stem-final palatalization cannot be the property of the endings

3.1.2. A floating rhotic?

The two animate *ř*-declension nouns with an [r] lost in the nominative singular:

- (12) a. *mat*/*máteri*/*materiám* 'mother.SG.NOM/{SG.GEN/PL.NOM}/PL/INS'
b. *doč*/*dóčeri*/*dočeriám* 'daughter.SG.NOM/{SG.GEN/PL.NOM}/PL/INS'

The floating consonant is deleted in the coda (i.e., in the nominative singular) and retained elsewhere:

- (13) a. */mateʳ/ + Y* → */mati/* (where Y is the nominative singular ending: a yer or a zero)
b. */mateʳ/ + /i/* → */materi/*

The realization of the second stem vowel depends on the realization of the floating [r]: if [r] is not realized, the vowel can be argued to be deleted before the vowel of the case ending (general hiatus resolution)

Derivation is with the full stem when category-changing (*dočérnij*, *udočerít*, *materít'sja*, *materínskij*) and without when diminutive (*dóčka*, *dóčenka*, *mátuška*); diminutive formation applies pretty high

The only evidence for floating root-final segments in nouns comes from the *ř*-declension

Remaining issue: where does stem-final palatalization (the *ř*) in the *ř*-declension come from?

3.2. Other uses of floating segments

So far, I have no independent evidence that the stem-final vowels of the *o*- and *a*-declensions are floating

However, an appeal to floating vs. non-floating vowels may explain glide-insertion failure with some verbal thematic suffixes (e.g., *-a-* vs. *-aj-*, *-e-* vs. *-ej-*, *-nu-*):

- (14) a. *žážd-a-l-a* thirst-TH-PAST-FSG
b. *žážd-Ø-e-t* thirst-TH-PRES-3SG
- (15) a. *čit-a-l-a* read-TH-PAST-3SG
b. *čit-aj-e-t* read-TH-PRES-FSG

Jakobson 1948, Lightner 1965, Melvold 1989, etc.:

- different underlying representations of thematic suffixes: *-a-* in (14) and *-aj-* in (15) (also *-e-* vs. *-ej-*, and *-nu-*)
- in (14b) the thematic vowel is deleted before another vowel
- in (15a) the glide is deleted before a consonant

Garde 1972, Itkin 2007, among others: glide insertion in (15) and its failure in (14)

Garde 1972: independent evidence for glide insertion, but no explanation for its failure

A difference between a floating thematic vowel (deleted before another vowel) and a full one (triggering glide insertion) would account for these facts

Difference between nouns (not allowing glide-insertion in declension) and verbs is not derivable, but while there can be indeclinable nouns, there are no inconjugable verbs

3.3. Summary: the benefits of floating vowels

The difference between declinable and indeclinable nouns becomes a matter of phonology, no diacritic is needed: **indeclinable nouns are those whose stem ends in a full vowel**

This proposal explains both indeclinable nouns and their transformation into declinable stems including potentially stems ending in vowels other than [o] and [a], see

Inflection class becomes a phonological matter (cf. Spaelti 2004, Emonds and Spaelti 2005 for Latin, Bermúdez-Otero 2006, 2013 for Spanish)

The decomposition of the Russian declension classes into two binary sub-features (see Nesset 1994, Alexiadou and Müller 2008, Caha 2021 and Privizentseva 2023) becomes motivated:

Table 2: Full decomposition of Russian declension classes: [±F][±V]

	-F	+F
-V	C-declension: <i>stol</i> ‘table.M’, <i>dróžd</i> ‘thrush.M’	ĭ-declension: <i>bolĭ</i> ‘pain.F’
+V	o-declension: <i>božestvó</i> ‘deity.N’	a-declension: <i>čertá</i> ‘line.F’

Potential: glide-insertion and its failure in the verbal domain

Additional benefits: **floating final vowels allow unification of the two [+F] declensions**

4. EXPONENCE AND REALIZATION

Recall: the declension class is determined by the final segment of the stem:

- stems ending in a floating *a* belong to the *a*-declension
- stems ending in a floating *o* belong to the *o*-declension
- stems ending in a floating consonant (or is it a floating segment?) belong to the ĭ-declension (and I have some evidence for this from *dočĭ* ‘daughter’, *vrémĭa* ‘time’)
- C-final stems belong to the C-declension
- all others are indeclinable

Indeclinable stems all end in non-floating vowels

Case endings of the *a*- and ĭ-declensions can be derived from the same underlying forms

Assumption: ĭ-declension nouns end in a front yer in the singular (and usually also in the plural)

Table 3: [+F] declension classes

#	CASE	UR	ĭ	Y = ĭ OR [-BACK]	A	
SG	NOM	Ø	bolĭ	Y + Ø → [-back]	čert- <u>á</u>	$a + \emptyset \rightarrow a$
	ACC	^m	bolĭ	Y + ^N → ĭ*	čert- <u>ú</u>	$a + \sup{N} = u$
	GEN	ⁱ	bolĭ- <u>í</u>	Y + ⁱ → ⁱ	čert- <u>í</u>	$a + \sup{i} \rightarrow \sup{i}$
	DAT	ⁱ	bolĭ- <u>í</u>	Y + ⁱ → ⁱ	čert- <u>é</u>	$a + \sup{i} \rightarrow e$
	LOC	ⁱ	bolĭ- <u>í</u>	Y + ⁱ → ⁱ	čert- <u>é</u>	$a + \sup{i} \rightarrow e$
	INS	^j [+round]	bolĭ-ju	Y + ^j [+round] → ju	čert- <u>ój</u>	$a + \sup{j}[\text{+round}] \rightarrow oj$

Each of these realizations can be supported by independently attested processes

4.1. Nominative case

To ensure that the nominative case behaves appropriately, final floating vowels and consonants should be realized

Assuming that the nominative case marker is null, $a + \emptyset \rightarrow a$

If floating vowels are the same as yers, their realization at the right edge would be governed by the same principles as yers' in frameworks that do not assume a yer in the nominative singular of C-nouns (cf. Scheer 2005, 2019)

The hypothesis that the nominative singular is a yer would run into problems with the floating nasals and rhotics

Hypothesis: *ĩ*-declension nouns have a floating final consonant and their singular suffix is *-ĩ* (the front yer, same as the floating vowel ¹)

Assuming that a yer is a melody not associated to its timing slot (Hyman 1985: 58–59, Rubach 1986), its timing slot can be coopted to realize the floating final consonant of an *ĩ*-declension noun:



This means that the floating melody can no longer be realized *even if final yers normally are*

Most likely, the melody of a front yer without a timing slot (henceforth, Y) is just palatalization of the preceding consonant

4.1.1. Final palatalization in the *ĩ*-declension

Anyone dealing with the *ĩ*-declension has to represent its final palatalization:

- if by a front yer: why no yer-lowering in oblique cases
- if by a floating feature: a novel type of a morpheme

The stem-final palatalization of *ĩ*-declension nouns cannot be a feature of the stem:

- (17) a. *sel'dj* 'herring' → *sel'ódočka* 'herring-DIM-DIM'
 b. *kist'* 'brush' → *kístočka* 'brush-DIM-DIM'

The hypothesis that *-ĩ* is SG is compatible with these facts (unlike treating it as an *n*)
 But the *r*-final roots will have to be palatalized underlyingly

4.1.2. Yer lowering in the *ĩ*-declension

Yer lowering in cases like *ľubóv'j* 'love' and *lož'j* 'lie' is brought about by phonotactics
 The *ĩ*-declension nominative singular actually does not trigger yer lowering (17)!

The realization of the root-internal yer can be forced by phonotactics, cf. *r*-final verbal roots:

- (18) *mr'j-ó-t/m'ór-l-a* 'die-PRES-3SG/PAST-FSG'

Of course, an alternative explanation is that yer lowering does not happen because the ending is zero throughout (cf. *m'a*-nouns), there is no front yer there either and no floating consonant. But why then would all *ĩ*-declension nouns have a palatalized final consonant?

4.2. Accusative case

Two potential issues: surface identity to the nominative in the *ĭ*-declension and the realization as *-u-* in the *a*-declension

Hypothesis: the exponent of the accusative case is the feature [nasal] (encoded as ^N)

4.2.1. “Zero” accusative in the *ĭ*-declension

In other instances of the putative underlying V^N sequence V_[-back]^N → [ja], even for yers:

- (19) a. *vrém'a/vremeni* ‘time.NOM/GEN’ underlying *-e-*
b. *kúr-i-Ø-t* ‘smoke-PRES-TH-3SG’: *kúr*^[aščij] ‘smoking.MSG’ underlying *-i-*
c. *razo.^[mn]-ó-t* ‘mash-PRES-3SG’/*razm^[d]-l-a* ‘mash-PAST-FSG’ underlying front yer

Why is the accusative ending not *-ja-*, as in (19c)?

Answer: because the vowel preceding it is not a yer, it’s a melody without a timing slot (a Y)

4.2.2. “Merged” accusative in the *a*-declension

As mentioned above, the tautosyllabic V_[+back]^N sequence surfaces as [u]

Hypothesis: this happens even if the V is floating

4.2.3. Palatalization with underlying V^N clusters

Tautosyllabic V_[+back]^N sequence results in a **non-palatalizing [u]**:

- (20) a. *vedⁱ-ó-t* ‘sing-PRES-3SG’
b. *ved^[u]* ‘sing-1SG’, *ved^[uščij]* ‘singing.MSG’

The first-conjugation present-tense suffix *-e-*, though turning into [o] under stress, palatalizes the preceding consonant **except when forming a tautosyllabic V^N sequence** (20b)

Depalatalization seems to be incorrectly predicted in the *a*-declension accusative:

- (21) *diádia* ‘uncle’ → *diádⁱu*/**diádu*

Crucial distinguishing factor: in nominal declension stem-final palatalization is underlying, in verbal conjugation it arises from the [-back] thematic vowels or present-tense suffixes

When stem-final palatalization is due to the present-tense suffix (in the second conjugation), it is not affected by the 1SG ending (though this may be due to other factors)

Secondly, in verbal conjugation the vowel in the V^N cluster is also floating, which could play a role

4.2.4. Why not use allomorphy?

Two reasons:

- phonologically conditioned allomorphy (accusative realization as zero) would miss the nominative-accusative syncretism
- phonologically conditioned impoverishment of the accusative would have different conditions in other declension classes (syncretism conditioned by animacy for the C-declension and by humanness for the *o*-declension)

One way or another an empirical generalization would be missed

4.3. Dative and locative cases

Syncretic in both declensions: *-e-* in the *a*-declension and *-i-* in the *ĩ*-declension:

- (22) a. $Y + i \rightarrow i$ (where Y is the melody of a front yer without a timing slot)
b. $a + i \rightarrow e$

A sequence of two floating vowels results in the merger of their features:

- straightforward for Y
- fronting (and raising?) for ^a

Historically motivated (cf. also Latin), again the devil is in the details

4.4. Genitive case

The genitive case marker is *-i-* for the *a*-declension, and *-i-* (potentially *-ĩ-*) for the *ĩ*-declension
Melvold 1989:21: there is a difference in accentuation; I think I have a solution for this

To circumvent the merger issues for the *a*-declension (*o* predicted), I assume that the genitive case marker is a full vowel

4.5. Instrumental case

Accepted view: the same marker for the two declensions, the difference is due to phonotactics

The realization of the feminine instrumental: surface [ju] for the *ĩ*-declension, surface [oj] for the *a*-declension (archaic [óju]), underlying *-ĩj-* + *-u-*:

Evidence for the yer: The surface [ju] cannot be stressed even with the post-accenting *ľubóvjju* (cf. *deviatjú*)

- final vowel deletion in the *a*-declension is due to (optional) apocope (independently motivated)
- yer lowering in the *a*-declension is to break up an impossible consonant cluster

Somewhat problematic: the [Cj] cluster is attested and resolved to mutation in Russian

Hence, I propose to regard the instrumental singular as a glide with a floating [+round] feature

More work is needed

4.6. Summary

The desirable behavior of floating vowels is:

- realization at the end of the word for the *a*-declension: ^a# \rightarrow a (like stem-final yers in theories where the nominative singular marker is null)
- inactive for the nominative of the *ĩ*-declension: ^C + i # \rightarrow \emptyset (in the nominative)
- deletion before a full vowel: ^V-V (in the genitive)
- feature coalescence for two floating vowels: ^a + ⁱ \rightarrow e in the dative and locative of the *a*-declension
- glide insertion between full vowels

A desideratum not discussed: no declensional endings with full vowels

The two [+F] declension classes can be regarded as one

The nominative “thematic suffix” is given a morphosyntactic status as a number marker
Overt singular is also needed for stress

And there is also the question of stress: *a*-declension endings are mostly accented, *ĩ*-declension endings are unaccented

Can this be derived from the properties of the ^a? The only unaccented ending of the *a*-declension is the accusative, which is also non-syllabic under this view

5. CONCLUSION

The adoption of floating vowels gives us:

- independently motivated declension classes (Muller’s $[\pm\beta]$ is whether the root ends in a consonant, $[\pm\alpha]$ is just gender)
- a formalization of indeclinable nouns
- a nicer treatment of the hypothetical underlying VN alternations (*i/a/ĩN*, *i/a/eN*, *u/aN*, *u/oN*) in the terms of floating nasals (which retains their exceptionality yet makes them less arbitrary)

Gender is derived from the declension class (unless explicitly specified) and vice versa, gender determines the declension class (in certain derived diminutive nouns)

6. ADDITIONAL DISCUSSION

6.1. Thematic suffix in nouns

Halle 1994, Bailyn and Nevins 2008, Halle and Nevins 2009: nouns have thematic suffixes

Can indeclinable nouns be athematic?

This is not the answer:

- a) there is no theory of thematic suffixes (neither what they are nor what determines which thematic suffix each nouns takes)
- b) we have no understanding of how the final [a] in *Diumá* can turn into a thematic suffix (declining forms attested) and why it generally doesn’t
- c) certain stems will still need to be diacritically marked as not taking thematic suffixes (there is no reason for why they don’t)

For my proposal it should not really make a difference if the final floating vowel is a separate morpheme, but 3rd-declension nouns argue that it is

However, I do not call these things thematic vowels, I call them number (and there is evidence that plural thematic suffixes are different)

6.2. Declension class decomposition

Attempts have been made to explain declension classes by decomposing them into sub-features

- Nessel 1994, Alexiadou and Müller 2008: abstract declension sub-features
- Caha 2021 and Privizentseva 2023: one of them is a gender sub-feature ([±F])

Table 4: Gender-based decomposition of Russian declension classes: [±F][±β]

	–F	+F	NOM
–β	C-declension: <i>stol</i> ‘table.M’, <i>drózd</i> ‘thrush.M’	ĩ-declension: <i>ľubóvi</i> ‘love.F’	C
+β	o-declension: <i>božestvó</i> ‘deity.N’	a-declension: <i>čertá</i> ‘line.F’	V

The nature of the other feature ([±β]) remains unclear (cannot be viewed as just consonant-final nom.sg. form because this should be derived: the C/a/o pattern also surfaces in adjectives and verbs)

In my story the decomposition of the Russian declension classes into two sub-features becomes motivated: the [±β] feature is simply a [±vocalic] stem-final segment

Table 5: Full decomposition of Russian declension classes: [±F][±V]

	–F	+F
–V	C-declension: <i>stol</i> ‘table.M’, <i>drózd</i> ‘thrush.M’	ĩ-declension: <i>ľubóvi</i> ‘love.F’
+V	o-declension: <i>božestvó</i> ‘deity.N’	a-declension: <i>čertá</i> ‘line.F’

In fact, I believe that this should be done by a three-value gender and a floating final consonant

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