

RUSSIAN E-VERBS AND CONDITIONED VOWEL CHANGE RFP 2023, Lille, July 27-29, 2023

1. TWO CONJUGATION CLASSES OF RUSSIAN VERBS (INTRO)

Russian two conjugation classes are traditionally defined by the **vowel appearing between the verbal stem and the agreement suffix in the present tense**

In the first conjugation this vowel is [e] (turning into [i]o under stress), in the second, [i]

In both conjugations a vowel may appear in the past-tense forms that is absent from the present-tense forms

Table 1: First conjugation: *nestí* ‘to carry’, *čitáti* ‘to read’, *sosáti* ‘to suck’

		singular-M(F/N)			plural		
pres	1	<i>nes-ú</i>	<i>príg-n-u</i>	<i>sos-ú</i>	<i>nes-ió-m</i>	<i>príg-n-e-m</i>	<i>sos-ió-m</i>
	2	<i>nes-ió-š</i>	<i>príg-n-e-š</i>	<i>sos-ió-š</i>	<i>nes-ió-te</i>	<i>príg-n-e-te</i>	<i>sos-ió-te</i>
	3	<i>nes-ió-t</i>	<i>príg-n-e-t</i>	<i>sos-ió-t</i>	<i>nes-út</i>	<i>príg-n-ut</i>	<i>sos-út</i>
past		<i>nes-l(á/ó)</i>	<i>príg-nu-l(a/o)</i>	<i>sos-á-l(a/o)</i>	<i>nes-l-í</i>	<i>príg-nu-l-i</i>	<i>sos-á-l-i</i>

In the first conjugation the hiatus created by (the vowel of) the thematic suffix and the present-tense suffix is resolved by vowel deletion (Jakobson 1948, Halle 1963, Lightner 1965, etc.):

For the productive thematic suffixes *-aj-* (present)/*-a-* (past) and *-ej-/e-* both glide formation in the present (Garde 1972, Itkin 2007) and glide deletion in the past (Jakobson 1948, Halle 1963, Lightner 1965) have been proposed

- (1) a. $[[[s\acute{o}s-a]_2-\acute{e}]_3-t]_4 \rightarrow [[[s\acute{o}s-\acute{a}]_2-\acute{e}]_3-t]_4 \rightarrow s\acute{o}s\acute{o}t$ ‘suck_{3SG}’ vowel deletion
b. $[[[pr\acute{i}g-nu]_2-\acute{e}]_3-t]_4 \rightarrow [[[pr\acute{i}g-nu]_2-\acute{e}]_3-t]_4 \rightarrow pr\acute{i}gnet$ ‘will jump_{3SG}’

What happens in the second conjugation?

2. THE PUZZLE AND THE SOLUTION OF RUSSIAN E-VERBS

In the productive *i*-class of second-conjugation verbs the thematic suffix [i] appears both in the present and in the past tense

Table 2: Second conjugation: *caríti* ‘to reign’

		singular-M(F/N)	plural
pres	1	<i>car-i-ú</i>	<i>car-i-m</i>
	2	<i>car-i-š</i>	<i>car-i-te</i>
	3	<i>car-i-t</i>	<i>car-i-át</i>
past		<i>car-i-l(a/o)</i>	<i>car-i-l-i</i>

This would suggest that the present-tense suffix here is Ø

However, the second conjugation (defined by the presence of the suffix [i] in the present tense) also contains verbs with **the thematic suffixes surfacing in the past tense as [e] and [a]:**

Itkin 2013 points out that this class, while usually viewed as closed (ca. 30 a-verbs and ca. 50 e-verbs), has some limited productivity where it comes to the domain of sound verbs

Notation: The transcriptions below closely follow Russian orthography and do not indicate: (a) palatalization before front vowels (*/Ci/* → [*Ci*], */Ce/* → [*Ce*]), (b) various vowel reduction phenomena in unstressed syllables, (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 */ĩ/* (front, IPA [ɪ]) and */ũ/* (back, IPA [ʊ]). The letters *u* (IPA [tɕ]), *uu* (IPA [ɕ]), *ж* (IPA [ʒ]), *u* (IPA [ɕɕ]), and *u* (IPA [tɕ]) are traditionally rendered as *č*, *š*, *ž*, *šč*, and *c*.

Table 3: Second conjugation: *carítj* ‘to reign’, *kričítj* ‘to scream’, *gorétj* ‘to burn’

		singular-M(F/N)			plural		
pres	1	<i>car-j-ú</i>	<i>krič-[j]-ú</i>	<i>gor-j-ú</i>	<i>car-í-m</i>	<i>krič-í-m</i>	<i>gor-í-m</i>
	2	<i>car-í-š</i>	<i>krič-í-š</i>	<i>gor-í-š</i>	<i>car-í-te</i>	<i>krič-í-te</i>	<i>gor-í-te</i>
	3	<i>car-í-t</i>	<i>krič-í-t</i>	<i>gor-í-t</i>	<i>car-j-át</i>	<i>krič-j-át</i>	<i>gor-j-át</i>
past		<i>car-ǫ-l(a/o)</i>	<i>krič-ǫ-l(a/o)</i>	<i>gor-ǫ-l(a/o)</i>	<i>car-ǫ-l-i</i>	<i>krič-ǫ-l-i</i>	<i>gor-ǫ-l-i</i>

Everyone agrees that **the surface [a] is derived from underlying [e]** (section 2.1)

Two ways of accounting for the replacement of the past-tense [e]/[a] by the present-tense [i]

Melvold 1990 (following Jakobson 1948): the thematic vowel [e] is deleted before the present-tense suffix *-i-* by the general hiatus resolution rule, like in the first conjugation:

- (2) a. $[[[gor-e]_2-i]_3-t]_4 \rightarrow [[[gor-ǫ]_2-i]_3-t]_4 \rightarrow gorít$ ‘burn_{3SG}’ vowel deletion
b. $[[[prig-nu]_2-ǫ]_3-t]_4 \rightarrow [[[prig-nu]_2-ǫ]_3-t]_4 \rightarrow prignet$ ‘will jump_{3SG}’

Micklesen 1973, Coats and Lightner 1975, Itkin 2007:129-130: the second conjugation present-tense suffix is null, and **the thematic vowel [e] is changed to [i] in the present tense**

Itkin argues for an underlying [j] as the representation of the 2nd conjugation thematic suffix

- (3) a. $[[[gor-e]_2-Ø]_3-t]_4 \rightarrow [[[gor-i]_2-Ø]_3-t]_4 \rightarrow gorít$ ‘burn_{3SG}’ vowel change
b. $[[[krik-e]_2-Ø]_3-t]_4 \rightarrow [[[krič-e]_2-Ø]_3-t]_4 \rightarrow [[[krič-i]_2-Ø]_3-t]_4 \rightarrow kričít$ ‘scream_{3SG}’

This presentation:

- independent evidence for a zero present-tense suffix
- independent evidence for thematic vowel change
- independent evidence for the raising ablaut from secondary imperfectives

Derived advantages of the raising ablaut:

- the raising ablaut will prove to be useful elsewhere (secondary imperfective, actor nominalization, the exceptional verb *ssatj* ‘to piss’)
- the (non)default nature of transitive softening in the secondary imperfective of e- and i-verbs will be explained

Theoretical advantage: if the second-conjugation present-tense [i] is due to ablaut, the second-conjugation present-tense suffix is phonologically null, which means **a typologically normal zero present-tense suffix in one productive verb class**

2.1. Velar softening and second-conjugation a-verbs

Palatalized velars turn into alveopalatals (Halle 1959, Lightner 1965, Plapp 1999, etc.), except in nominal declension:

- (4) a. *ribák* ‘a fisher’ → *ribačók* ‘a fisher.DIM’, *ribáčitj* ‘to fish’
b. *sneg* ‘snow’ → *snežók* ‘snow.DIM’, *snežíti* ‘to snow’
c. *gřex* ‘sin’ → *grešók* ‘sin.DIM’, *grešiti* ‘to sin’

When a velar-final root is combined with the verbalizer *-e-*, the velar mutates, and the suffixal vowel turns into [a]:

- (5) second-conjugation verbalizer *-e-*
a. *-vis-* ‘hang’ + *-e-* → *visít/visél* ‘hang_{PRES.3SG/PAST.MSG}’
b. *-vizg-* ‘squeal’ + *-e-* → *vizzít/vizzǫl* ‘squeal_{PRES.3SG/PAST.MSG}’

The only exception to this generalization is the verb *kišétj* ‘to swarm’

Lightner 1967 also lists the verb *obezmátočeti* ‘to lose the queen bee’, but it belongs to the first conjugation (see Appendix 1)

In the first-conjugation thematic suffix *-e[j]*- and in the elative suffix *-ejš-* the first vowel shows the same behavior (see Appendix 2)

[a] verbs are underlyingly e-verbs

2.2. The derivation of the present-tense forms

Motivation for the morphologically triggered thematic vowel change: ablauts in the verbal root and in the thematic suffix (Matushansky 2023):

- (6) a. *s'ádu/séla* ‘sit down.PRES.1SG/PAST.FSG’ root ablaut
b. *róju/ríla* ‘dig.PRES.1SG/PAST.FSG’
- (7) a. *pišú (pis-j-u)/pisála* ‘write.PRES.1SG/PAST.FSG’ theme ablaut
b. *mel'ú (mel-j-u)/molóla* ‘grind.PRES.1SG/PAST.FSG’

If there is one (readjustment) rule changing the thematic vowel, there can be another one

Proposal: the thematic vowel [e] can undergo ablaut (raising) in the present tense

The second-conjugation present-tense suffix is then null

Two Russian verbs appear with a null present-tense suffix on anyone’s story:

Table 4: Singular present forms of the verbs *jesti* ‘to eat’ and *dati* ‘to give’

		<i>jesti</i> ‘to eat’	<i>dati</i> ‘to give’
present	1	<i>jed-m → jem</i>	<i>dad-m → da-m</i>
	2	<i>jed-š → ješ</i>	<i>dad-š → da-š</i>
	3	<i>jed-t → jest</i>	<i>dad-t → das-t</i>

The deletion of the stem-final [d] before a sonorant is independently attested in the past tense, and its transformation into [s], in the infinitive (and can be extended to the 2sg)

In the plural the thematic suffix is realized as [i] and the stem-final consonant is pronounced (see Appendix 4)

A null morpheme should preferably be the least specified (elsewhere) allomorph

The ablaut analysis of second-conjugation verbs makes the null present-tense suffix productive

A null present-tense morpheme is a cross-linguistic default

Further arguments in favor of a raising ablaut:

- a proper analysis of transitive softening in secondary imperfectives
- actor nominalizations and the exceptional verb *ssati* ‘to piss’
- a new take on Russian conjugation classes

Starting point: transitive softening

3. TRANSITIVE SOFTENING AND THE SOURCE OF THE SECOND-CONJUGATION GLIDE

Transitive softening, a.k.a. iotation, or transitive palatalization (переходное смягчение), in Slavic languages and in Russian in particular (Jakobson 1929, Meillet 1934, Kortlandt 1994, Townsend and Janda 1996, *inter alii*; see Halle 1963, Lightner 1972, Coats and Lightner 1975,

Bethin 1992, Brown 1998 and Rubach and Booij 2001 for generativist analyses) is the term used for a special type of **consonant mutation resulting from an underlying [CjV] cluster**:

Table 5: Transitive softening

	consonant	transitive softening	infinitive (- <i>tʲ</i> -)	1sg (- <i>u</i> -)
a.	s, z	š, ž	<i>pros-í-tʲ</i> ‘to beg’	<i>proš-ú</i> ‘beg-1SG’
b.	t, d	č, ž	<i>vod-í-tʲ</i> ‘to lead’	<i>vož-ú</i> ‘lead-1SG’
c.	p, b, m, v	plʲ blʲ, mlʲ, vlʲ	<i>lʹub-í-tʲ</i> ‘to love’	<i>lʹublʲ-ú</i> ‘love-1SG’
d.	l, r, n	lʲ, rʲ, nʲ	<i>bel-í-tʲ</i> ‘to whiten, tr.’	<i>belʲ-ú</i> ‘whiten-1SG’

The velars *x*, *k* and *g* turn into *š*, *č*, and *ž*, respectively. They are not exemplified because in the second conjugation they are subject to velar softening (before a front vowel), with the same surface outcome for the consonant (cf. Table 3)

For occasional failure of transitive softening in derivation see Kapatsinski 2010, Slioussar and Kholodilova 2013, Magomedova and Slioussar 2017a, b

3.1. Second-conjugation i-verbs and transitive softening

On the assumption that the second-conjugation present-tense suffix is null, the [Cj] cluster in the 1SG arises as follows:

- (8)
$$\begin{array}{l} \text{[[[pros-i]}_1\text{-u]}_2\text{]} \\ \quad \text{└─┘} \\ \text{[pros-j-u]}_2 \\ \quad \text{└─┘} \\ \text{[proš-ú]} \end{array}$$
 cycle 2: glide formation
transitive softening and some more rules

The same happens before the passive past participle (PPP) suffix *-ěn-*:

- (9) a. *kormítʲ* ‘to feed’ → *kórmlena* ‘feed_{PPP-FSG}’
b. *gruzítʲ* ‘to load’ → *grúlena* ‘load_{PPP-FSG}’

And in the secondary imperfective:

The secondary imperfective suffix has three allomorphs: suffixes [iv] (underlyingly *-iw-*), [v] (underlyingly *-w-*) and *-Ø-* (zero), all followed by the thematic suffix *-a/-aj-* (*-aʲ-*). [v] is not used with i-verbs (but see section 10.3.1)

- (10) a. *kormítʲ* ‘to feed’
b. *otkormítʲ* ‘to fatten_{PRV}’
c. *otkármlivatʲ* ‘to fatten_{IPFV}’
- (11) a. *gruzítʲ* ‘to load’
b. *razgruzítʲ* ‘to offload_{PRV}’
c. *razgruáatʲ* ‘to offload_{IPFV}’

Second-conjugation verbal stems are vowel-final (end in [e] or [i]), giving rise to **hiatus** in the secondary imperfective:

- (12)
$$\begin{array}{l} \text{[[[raz.gruz-i]}_1\text{-a]}_2\text{-tʲ]}_3 \\ \quad \text{└─┘} \\ \text{[[raz.gruzj-a]}_2\text{-tʲ]} \\ \quad \text{└─┘} \\ \text{[razgruáatʲ]} \end{array}$$
 cycle 2: glide formation
transitive softening and some more rules

Default outcome for i-verbs: glide formation and subsequent transitive softening

There are 14 *i*-stems that do not undergo transitive softening in the secondary imperfective (section 10.3.2)

3.2. Second-conjugation e-verbs and transitive softening

In the 1SG of the present tense and in the PPP [e]-verbs must give rise to transitive softening:

I have counted 7 e-verbs that can form PPPs and they all undergo transitive softening

- (13) a. *obídelá* ‘offend_{PAST.FSG}’
b. *obídit/obížu* ‘will offend_{3SG/1SG}’
c. *obížena* ‘offend_{PPP.FSG}’
e-verb
- (14) a. *zakupíla* ‘start boiling_{PAST.FSG}’
b. *zakupít/zakupížú* ‘start boiling_{3SG/1SG}’

In the **secondary imperfective e-verbs usually do not trigger transitive softening** (section 10)

- (15) a. *zakupíti* ‘start boiling_{IMPV.INF}’
b. *obížáti* ‘offend_{IMPV.INF}’
default (23 roots)
non-default (5 roots)

The **defaults are different** where it comes to transitive softening in the secondary imperfective

[i]-verbs almost always trigger transitive softening in the secondary imperfective
[e]-verbs usually don’t

Why such a difference? And why is there no variation in the 1sg and in the PPP?

3.3. The raising ablaut as a stem-conditioned readjustment rule

Hypothesis: glide formation only happens from [i], [e] cannot turn into a glide (nor, hence, give rise to transitive softening), *pace* Halle 1963, Lightner 1965, Flier 1972

Transitive softening is therefore not expected for e-verbs in environments where the raising ablaut (yielding the e2i change) has not occurred

Proposal: the raising ablaut is obligatory with some suffixes and stem-triggered with others:

- obligatory: in the present tense and in the PPP
- stem-triggered: in the secondary imperfective, and with the suffixes *-telí/-telí-n-*

Predictions: potential other environments of stem-triggered e2i change

Example (the zero allomorph):

- (16) [[[[[obid-e]₂-Ø_{IMPFV}]₃-a]₄-l]₅ offend.IMPV.PAST.MSG
RAISING ABLAUT (E2i)
[[[[[obid-i]₂-Ø_{IMPFV}]₃-a]₄-l]₅
GLIDE FORMATION
[[obidj-a]₄-l]₅
TRANSITIVE SOFTENING
obižál

If the e2i change has not occurred, transitive softening does not happen (see section 10)

4. INTERMEDIATE SUMMARY

Proposal: second-conjugation e-verbs undergo a raising ablaut (yielding the e2i change)

Subsidiary proposal: the e2i change is obligatory in some environments and stem-triggered, in others

The combination of these assumptions can explain:

- obligatory and optional transitive softening with some suffixes
- the (non-)default nature of transitive softening in secondary imperfectives derived from second-conjugation verbs

Empirically, for second-conjugation e-verbs we can explain:

- their **present tense**: the present-tense suffix is zero, obligatory [i] before the vocalic 1SG suffix (-u-) yields transitive softening
- their **PPPs**: obligatory [i] before the PPP suffix -ě- yields transitive softening
- their **secondary imperfectives**: stem-triggered [i] before the vowel introduced by the secondary imperfective suffix yields transitive softening

Supporting facts:

- *ssatʲ* ‘to piss’ as independent motivation for the raising ablaut in the present tense
- agentive nominalization as evidence for [-past] as the trigger
- other environments for stem-triggered raising ablaut
- the secondary imperfective of non-raised e-verbs

Main result: the raising ablaut can explain **patterns**

The alternative (vowel deletion) can explain what happens in the present of e-verbs but not in the secondary imperfective or in PPPs (no (variation in) transitive softening predicted)

5. INDEPENDENT EVIDENCE FOR A NON-E2I RAISING ABLAUT

The exceptional verb *ssatʲ* ‘to piss’ supports a raising ablaut that is not e2i and by extension a null present-tense suffix:

Unique pattern: with [i] in the present tense (the same for its dialectal variant *scatʲ*):

This verb can also be conjugated in another class, with the thematic vowel deleted before the present-tense suffix (like in the verb *sosátʲ* ‘to suck’)

Table 6: Special verb *ssatʲ* ‘to piss’

		singular.M (F/N)	plural
present	1	<i>ss-ú</i>	<i>ss-í-m</i>
	2	<i>ss-í-š</i>	<i>ss-í-te</i>
	3	<i>ss-í-t</i>	<i>ss-ú-t</i>
past		<i>ss-á-l (a/o)</i>	<i>ss-á-l-i</i>

Proposal: underlying [a] (be it a thematic suffix or part of the root) and the same raising ablaut as postulated above: the [+back][-round] [i] and [a] differ only in the feature [α high]

I’m not aware of any prior attempts to account for this verb

The deletion hypothesis can assimilate *ssatʲ* ‘to piss’ to the two second-conjugation verbs with [i]/[a] alternation (*gnatʲ* ‘to chase’, *spatʲ* ‘to sleep’) and stipulate that this root forces the backing of the tense suffix

The raising ablaut can account for several exceptional verbs

For the heteroclite verb *xotétʲ* ‘to want’ see Appendix 4

6. AGENTIVE NOMINALIZATION AND THE DIRECTION OF THE RAISING ABLAUT

Evidence that the past-tense stem is more basic: secondary imperfectives (stem vowel tensing targets the past-tense root) and agentive nouns

6.1. Agentive nominalization as evidence for the underlying [e]

The agentive (actor) suffix -telʲ- always attaches to the past-tense thematic stem:

- (17) a. *vladéet* PRES.3SG/*vladél* PAST.MSG ‘own’ → *vladéteľi* ‘owner’ -ej/-e-, I conj
 b. *čítaét* PRES.3SG/*čitál* PAST.MSG ‘read’ → *čitáteľi* ‘reader’ -aj/-a-, I conj
 c. *sošet* PRES.3SG/*pisál* PAST.MSG ‘write’ → *pisáteľi* ‘writer’ -j/-a-, I conj
 d. *ľúbít* PRES.3SG/*ľubil* PAST.MSG ‘love’ → *ľubíteľi* ‘amateur’ -i/-i-, II conj

(17c) shows that the base for the suffix *-teľi-* is the stem

Non-i verbs of the second conjugation fall into two classes:

- (i) palatal verbs: the suffixal vowel [e] **changes into** [a] if the stem ends in a (derived) palatal ([č], [š], [ž], or [šč]), see Appendix 1
 (ii) non-palatal verbs: the suffixal vowel **remains** [e]

Agentive nouns formed from **palatal a-verbs** surface with [a]:

The suffix is non-productive with the thematic suffix *-e-* (for both conjugations). Dictionary forms are indicated with S, novel ones, with N

- (18) a. *déržit/deržál* ‘hold’ PRES.3SG/PAST.MSG → *^Sderžáteľi* ‘holder’
 b. *díšit/dišál* ‘breathe’ PRES.3SG/PAST.MSG → *^Ndišáteľnica vaginój* ‘vagina breather’
 c. *zvučít/zvučál* ‘sound’ PRES.3SG/PAST.MSG → *^Nobertonnyj zvučáteľi* ‘obertone sounder’

Further support for the underlying [e]: suppose the underlying representation was [i]. Then the ablaut to [e] with the suffix *-teľi-* would have to happen only to palatal-final verbs

This would be counterintuitive, so **the past-tense stem (the e-stem) must be underlying**

6.2. Agentive nominalization as evidence for the raising ablaut

Agentive nouns formed from **e-verbs of the second conjugation** surface with [e] or [i]:

- (19) a. *smotríteľi* ‘custodian’ ← *smótrit/smotrél* ‘look (after)’ PRES.3SG/PAST.MSG
 b. *povelíteľi* ‘sovereign ruler’ ← *povelít/povelél* ‘enjoin’ PRES.3SG/PAST.MSG
 c. *zríteľi* ‘spectator’ ← *zrit/zrel* ‘behold’ PRES.3SG/PAST.MSG

- (20) *svidíteľi* ‘witness’ (cf. *videti* ‘to see’, *svídet’sia* ‘to see each other again’)

Second-conjugation e-verbs differ from first-conjugation e-verbs, which never derive agentive nouns with [i]:

Two caveats: (1) since the suffix *-e-* generally derives stative verbs, the paucity of *-teľi-* nouns may be semantically motivated, and (2) it is an open question whether the underlying representation of the suffix in (17a) is *-ej-* or *-e-*

- (21) a. *vladéet* PRES.3SG/*vladél* PAST.MSG ‘own’ → *vladéteľi* ‘owner’
 b. *radéet* PRES.3SG/*radél* PAST.MSG ‘care for’ → *radéteľi* ‘caregiver (arch.)’
 c. *veščáet* PRES.3SG/*veščál* PAST.MSG ‘broadcast’ → *veščáteľi* ‘broadcaster’

Only verbs that are subject to the raising ablaut in the present tense can undergo it in agentive nominalization:

- (22) a. *goníteľi* ‘oppressor’ : *gónit/gnal* ‘chase’ PRES.3SG/PAST.MSG -a/i-, II conj
 b. *dvížeteľi* ‘mover’: *dvízet/dvígal* ‘move’ PRES.3SG/PAST.MSG -a/i-, I conj
 c. *skazíteľi* ‘storyteller’: *skázet/skazál* ‘tell’ PRES.3SG/PAST.MSG -a/i-, I conj

Some additional discussion of non-deverbal *-teľi-* nouns can be found in Appendix 3

6.3. Another summary

Agentive nominalizations from e-verbs argue that the vowel [e] is underlying

They also provide another environment for stem-triggered e2i change

7. THE RAISING ABLAUT IN DERIVED ENVIRONMENTS

7.1. Transitive softening (TS) *write*-verbs

Ca. 60 Russian first-conjugation verbs surface with the thematic suffix *-a-* in the past tense and undergo transitive softening in the present tense:

The first-conjugation present-tense suffix is rendered as *-jo-* following Lightner 1965, it turns into [e] in unstressed syllables. The opposite underlying representation ([e] backed in stressed syllables) has also been proposed

(23) root *-pis-* ‘write’

- | | | | | | | | |
|----|----|----------|----|------|-----|---|-----------------------------------|
| a. | v- | pis- | a- | l- | a | ⇒ | <i>vpisála</i> ‘wrote in FSG’ |
| | | in write | TH | PAST | FSG | | |
| b. | v- | pis- | j- | jo- | t | ⇒ | <i>vsoset</i> ‘will write in 3SG’ |
| | | in write | TH | PRES | 3SG | | |

Where does the present-tense [j] come from?

Bethin 1992:285: a readjustment rule for a-suffixed verbs by which the /a/ is replaced by /i/ in the present tense

Matushansky 2023: transitive softening verbs involve an independently attested fronting ablaut (a2e):

- (24) $[[[pis-a]_1-j\bar{o}]_2-t]_3$ a2e glide formation (to be adjusted)
- └─┘ cycle 2: FRONT ABLAUT
- $[[[pis-e]_1-j\bar{o}]_2-t]_3$
- └─┘ cycle 2: glide formation (**problematic!**)
- $[[[pis-j]_1-j\bar{o}]_2-t]_3$
- └─┘ cycle 2: transitive softening
- $[[[piš]_1-j\bar{o}]_2-t]_3$
- └─┘ post-cyclic: [j̄o] → [e] in unstressed syllables
- $[soset]$

Matushansky 2023: e-verbs argue that [e] can turn into a glide in Russian

And I have always felt that this is a stretch. So...

adjusted here: **e-verbs undergo raising ablaut in the present tense**

The front ablaut (characterizing *write*-verbs) feeds the raising ablaut, yielding [i]:

- (25) $[[[pis-a]_1-j\bar{o}]_2-t]_3$ a2e2i glide formation
- └─┘ cycle 2: FRONT ABLAUT
- $[[[pis-e]_1-j\bar{o}]_2-t]_3$
- └─┘ cycle 2: **RAISING ABLAUT**
- $[[[pis-e]_1-j\bar{o}]_2-t]_3$
- └─┘ cycle 2: glide formation
- $[[[pis-j]_1-j\bar{o}]_2-t]_3$
- └─┘ cycle 2: transitive softening
- $[[[piš]_1-j\bar{o}]_2-t]_3$
- └─┘ post-cyclic: [j̄o] → [e] in unstressed syllables
- $[pišú]$

For *write*-verbs the front ablaut only occurs in the present-tense paradigm:

- no transitive softening in the secondary imperfective
- no transitive softening in agentive nominalization
- no transitive softening in the PPP

Some vowel change must be postulated in *write*-verbs

Appealing to the e2i ablaut makes this change minimal

The thematic ablaut in *write*-verbs ([a] in the past, [i] in the present) requires [±past]

7.2. Exceptional second-conjugation a-verbs

Two exceptional verbs (*gnatʲ* ‘to chase’, *spatʲ* ‘to sleep’) appear with the thematic suffix *-a-* in the past and with the second-conjugation [i] in the present:

- (26) a. *gónit/gnal* ‘chase’ PRES.3SG/PAST.MSG
b. *spit/spal* ‘sleep’ PRES.3SG/PAST.MSG

Proposal: their thematic suffix is also subject to the front ablaut:

- (27) $[[[gon-a]_1-\emptyset]_2-t]_3$ cycle 2: FRONT ABLAUT a2e glide formation (to be adjusted)
 $[[[gon-e]_1-\emptyset]_2-t]_3$ cycle 2: RAISING ABLAUT
 [gónit]

Indirect support: secondary imperfectives of these verbs:

- (28) a. *dogonʲátʲ* ‘to finish chasing’ IMPFV transitive softening, like (15b)
b. *dosipʲátʲ* ‘to finish sleeping’ IMPFV no transitive softening, like (15a)

Unlike in the present, in the secondary imperfective the raising ablaut is stem-triggered (section 3.3), so *-gún-* triggers it, while *-sŭp-* doesn’t

Itkin 2012: the verb *mʲaúkatʲ* ‘to meow’, as well as a few others on [-ukatʲ], follow the second-conjugation pattern in the present tense

8. STEM-TRIGGERED RAISING ABLAUT IN THE FIRST CONJUGATION

First-conjugation verbs appearing with the thematic suffix [e] in the past normally surface with the allomorph [ej] in the present:

I depart here from the standard transliteration and indicate the glide

- (29) a. *krasnʲejet/krasnél* ‘be/become red’ PRES.3SG/PAST.MSG
b. *žalʲejet/žalél* ‘pity’ PRES.3SG/PAST.MSG

Two **first-conjugation e-verbs have transitive softening in the secondary imperfective:**

- (30) a. *razgovʲejetsʲa/razgovélʲsʲa* ‘break fast’ FUT.3SG/PAST.MSG → *razgovlʲátʲsʲa*
b. *vʲizdorovʲejet/vʲizdorovel* ‘recover/heal’ FUT.3SG/PAST.MSG → *vʲizdorávlʲivatʲ*

These facts can be regarded as evidence for treating this suffix as underlyingly *-e-* with Garde 1972 and Itkin 2007 (pace Jakobson 1948, Lightner 1965, Melvold 1990, etc.)

But they are also compatible with its underlying representation as *-eʲ-*, with some additional assumptions

And two first-conjugation verbs with transitive softening in the present may surface with [e] in the past (Thelin 1973:96 mentions only (31b)):

- (31) a. *svíščet/svistél* ‘whistle’ PRES.3SG/PAST.MSG (formerly from *svistál*)
b. *bléščet/blestél* ‘shine’ PRES.3SG/PAST.MSG (also from *blistál*)

The past-tense forms indicate the thematic suffix *-e-* while the present-tense forms necessitate glide-formation (and hence e2i change)

The first-conjugation suffix *-e-* can trigger glide insertion or (exceptionally) be raised

This pattern (first-conjugation e-verbs triggering transitive softening in the present) is not attested elsewhere, this is not analogy to an existing verb group. The pattern in (30), on the other hand, is old

9. RAISING ABLAUT: CONCLUSION AND FURTHER QUESTIONS

Theoretical (implementational) outcome:

- the fronting ablaut (a2e) targeting *write*-verbs (Matushansky 2023): stem-triggered in the present tense
- the raising ablaut (yielding e2i):
 - in the second conjugation:
 - obligatory in the present tense and in PPPs
 - stem-triggered in the secondary imperfective and in agentive nominalization
 - in the first conjugation: stem-triggered
 - in the present tense (2 verbs)
 - in the secondary imperfective (2 verbs)
- productive (rather than exceptional) zero present-tense suffix

Evidence for the raising ablaut comes from several sources:

- second-conjugation e-verbs: present tense, PPPs, occasionally agentive nouns and secondary imperfectives
- the exceptional verb *ssatʲ* ‘to piss’
- first conjugation: two e-verbs in the present and two, in the secondary imperfective

Postulating the raising ablaut renders several facts **more systematic**:

- exceptionality of transitive softening in the secondary imperfectives of e-verbs
- independently motivated null present-tense inflection in a productive verb class
- the derivation of *write*-verbs

General idea: if a morphologically triggered vowel-change process already exists, why not use it?

Unexpected: **why do all a2e verbs undergo e2i** if the raising ablaut is otherwise exceptional in the first conjugation?

Leftovers: **non-TS secondary imperfectives**

10. OPEN: SECONDARY IMPERFECTIVES WITHOUT TRANSITIVE SOFTENING

Five e-verbs trigger transitive softening:

- (32) a. *posidétʲ/posíivatiʲ* ‘to sit for a bit PFV/IMPFV’ TS, [iv] allomorph (4 roots)
 b. *obídetʲ/obíiatʲ* ‘to offend PFV/IMPFV’ TS, Ø allomorph (1 root)

Five a-verbs may be regarded either way:

- (33) *pobojátʲsja/pobáivatiʲsja* ‘to fear PFV/IMPFV’ unclear, [iv] allomorph (5 roots)

Most e-verbs do not trigger transitive softening. What do they do?

- (34) a. *povelétʲ/povelevátʲ* ‘to command/rule PFV/IMPFV’ e, [v] allomorph (3 roots)
 b. *pogljadétʲ/poglíivatiʲ* ‘to take a glance PFV/IMPFV’ no TS, [iv] allomorph (17 roots)
 c. *dogorétʲ/dogorátʲ* ‘to finish burning PFV/IMPFV’ no TS, Ø allomorph (3 roots)

The remainder do not form secondary imperfectives at all

10.1. Secondary imperfective allomorphy

The *-iw-* allomorph is the only productive one in Russian. It is pre-accenting

The *-w-* and *-Ø-* allomorphs are post-accenting

Matushansky 2009: the same underlying representation (*-ǔ-*) and a cyclicity-based account: the realization as *-iw-* vs. *Ø/[v]* is determined by whether the prefix-root combination is lexically marked as cyclic or post-cyclic

See Tatevosov 2013:65-72 for arguments that undermine this proposal; Sadler, Spencer and Zaretskaya 1997:193 point out that secondary imperfectives derived from i-verbs by the zero allomorph do not form action nominals

Our story does not depend on this part of the analysis. We only care about the fact that both the *[iv]* and the zero allomorph (followed by the thematic suffix *-a-*) are vocalic

10.1.1. The *-w-* allomorph (underlyingly *[v]*)

Flier 1972, Feinberg 1980: an allophonic variant of the zero allomorph in intervocalic positions

Vocalic athematic verb stems can only use the *-w-* allomorph:

And also three a-verbs with C-stems: *dati/daváti* 'to give PFV/IMPV' (root *-da[d]-*), *znati/znaváti* 'to know PFV/IMPV' (root *-zna[j]-*), *stat'/staváti* 'to become PFV/IMPV' (root *-sta[n]-*), where *-w-* takes the TS theme (*-a-/-i-*)

- (35) a. *razdúti/razduvátí* 'to blow up PFV/IMPV' (root *-du[j]-*)
b. *dognúti/dognívátí* 'to finish rotting PFV/IMPV' (root *-gni[j]-*)
c. *sogrétí/sogrevátí* 'to warm up PFV/IMPV' (root *-gre[j]-*)

Roots in *-a[j]-* (e.g., *ottájati/ottajivatí* 'to thaw out PFV/IMPV') require a thematic suffix (generally *[a]*, one exception *otdráti/ordráivatí* 'to scrub off PFV/IMPV') and hence the secondary imperfective in *-iw-*

Except for three roots ending in *[ej]* (Levin 1977:240):

- (36) a. *zaséjati/zasevátí* (also *zasévátí*) 'to seed PFV/IMPV' (root *-se[j]-*) *-w-/-iw-*
b. *zatéjati/zatevátí* (also *zatévátí*) 'to undertake PFV/IMPV' (root *-te[j]-*) *-w-/-iw-*
c. *vzvéjati/vzvevátí* 'to stream upwards PFV/IMPV' (root *-ve[j]-*) *-w-*

Compare to other roots ending in *[ej]*:

- (37) *posmejáti'sja/posméivatisja* 'to laugh a bit PFV/IMPV' (root *-sme[j]-*) *-iw-*

Non-vocalic athematic verb stems take the zero allomorph, clearly supporting Feinberg's and Flier's position

With athematic verbs *-w-* appears after vocalic roots and zero after consonantal ones

With first-conjugation e-verbs *-w-* is obligatory (two exceptions: (30)):

- (38) *ovladéti/ovladevátí* 'to gain possession PFV/IMPV' (root *-vlad-*, theme *-e[j]-*)

Second-conjugation i-verbs do not take the *-w-* allomorph

The choice between the *-w-* allomorph and the zero allomorph is only *mostly* phonological

But fully deterministic (very few exceptions)

General view: the *-w-* allomorph is an allophonic variant of the zero allomorph: it is **obligatory with first-conjugation e-verbs and with vocalic roots**

Roots in *-a[jj]-* (e.g., *ottájati/ottajivati* ‘to thaw out PFV/IMPFV’) require a thematic suffix (generally [a], one exception *otdráiti/ordráivat* ‘to scrub off PFV/IMPFV’) and hence the secondary imperfective in *-iw-*

Flier 1972, Coats 1974, Worth 1978, Swan 2015, etc.: the final [j] in such verbs is **underlying and alternates with [v]** in secondary imperfectives

- the *-w-* allomorph is not expected with second-conjugation e-verbs (there cannot be an underlying glide there)
- the *-iw-* allomorph would be expected to also be preceded by [v] when combined with first-conjugation e-verbs and vocalic roots

Gladney 2013:634: [v] is **hiatus-filling**

- the zero allomorph is not expected with e-verbs (the hiatus should be filled)
- the *-iw-* allomorph would be expected to also be preceded by [v] when combined with first-conjugation e-verbs and vocalic roots

Matushansky 2009: **the underlying -ǔ- (the back yer) turns into a glide** intervocalically (with some additional constraints)

- Both options are not expected to be available simultaneously!

Reiterating the facts:

- non-complementary distribution of *-w-* and *-Ø-* allomorphs is attested only with e-verbs
- the *-w-* allomorph is the default with first-conjugation e-verbs
- with second-conjugation e-verbs the *-iw-* allomorph is the default (17 roots), while the *-w-* allomorph and the *-Ø-* allomorph have the same frequency (3 roots each)

10.1.2. The *-iw-* allomorph

The choice between the [iv] vs. Ø/[v] allomorphs cannot be attributed to any of the self-evident factors (Harrington 1967): the same stem can combine with either in function of the prefix, the prefix does not determine the choice, nor does compositionality (though the *-iw-* allomorph is more frequent and hence more likely to appear with semantically transparent prefixed verbs).

The same prefix-root combination may give rise to both options with different meanings

Hypothesis: while the TS suffix *-a/-i-* cannot be distinguished from the non-TS *-a-* suffix on the surface, the secondary imperfective form distinguishes them: *-iw-* corresponds to one (*-a-*), and *-w-*, to the other (*-a/-i-*)

- (39) a. *razvéjati/razvevát* ‘to blow about PFV/IMPFV’ (root *-ve[jj]-*) *-w-*
 b. *razvéjati/razvéivat* ‘to scatter PFV/IMPFV’ (root *-ve[jj]-*) *-iw-*

The zero or the *-w-* allomorph is not found with a-stems

Exceptions: three *-a/-i-* verbs (Levin 1977:240): *naklikati/naklikát* ‘to bring upon oneself (a disaster) PFV/IMPFV’, *razrézati/razrezát* ‘to cut up PFV/IMPFV’ (also allows *-iv-*), and *rassípati/rassipát* ‘to spill PFV/IMPFV’

The *-iw-* allomorph is not found with athematic stems

The choice between the *-iw-* and *-iw-/Ø-* allomorphs is stem-dependent and has nothing to do with transitive softening

10.2. Second-conjugation e-verbs with no TS in the secondary imperfective

If the choice between the *-w-* allomorph and the zero allomorph is determined by the root (for athematic verbs) or by the thematic suffix (*-w-* for the first-conjugation *-e-*, *-Ø-* for *-i-*), why do second-conjugation e-verbs allow both?

Only one root in (40), (40c), has more than one derivative: *obozrétʹ/obozrevátʹ* ‘to survey’, *podozrevátʹ* ‘to suspect’ (no base perfective), *prizrétʹ/prizrevátʹ* ‘to support by charity’, *prozrétʹ/prozrevátʹ* ‘to recover one’s sight’, and one with a non-[v] secondary imperfective: *prezrétʹ/prezirátʹ* ‘to despise’

- (40) a. *zretʹ* ‘to behold’ (*prozrétʹ/prozrevátʹ* ‘to recover one’s sight PFV/IMPV’) 3 e-roots: -w-
b. *velétʹ* ‘to order’ (*povelétʹ/povelevátʹ* ‘to command/rule PFV/IMPV’)
c. *terpétʹ* ‘to tolerate’ (*preterpevátʹ* ‘to suffer IMPV’)
- (41) a. *zakupítʹ/zakupátʹ* ‘to come to boil PFV/IMPV’ 3 e-roots: -Ø-
b. *letétʹ (letátʹ)* ‘to fly PFV/IMPV’
c. *dogorétʹ/dogorátʹ* ‘to finish burning PFV/IMPV’

What is the rule and what is the exception?

The full list of 14 non-TS i-verbs like those in (41) contains both transitive and intransitive verbs

10.2.1. e-verbs with the -iw- allomorph


Assuming that [j] can only arise from [i], we do not expect transitive softening

Setting aside (for the sake of simplicity) the choice between the -iw- vs. Ø allomorphs in (32), suppose -iw- is the underlying representation (17 roots):

- (42) [[[[po.gliad-e]_{2-iw IMPFV}]_{3-a-l}]₄ take a glance.IMPFV.PAST.MSG
 VOWEL DELETION
 poglǎdǐval

This is the most productive pattern, as expected from the combination of the most productive secondary imperfective allomorph and the underlying representation

4 roots are assumed to be subject to ablaut: the thematic vowel changes to [i], and the resulting [i] turns into [j] before the vowel of the secondary imperfective suffix:

- (43) [[[[po.sid-e]_{2-iw IMPFV}]_{3-a-l}]₄ sit for a bit.IMPFV.PAST.MSG
 ABLAUT
 [[[[po.sid-i]_{2-iw IMPFV}]_{3-a-l}]₄ TRANSITIVE SOFTENING
 posíživai

While in unstressed syllables the difference between [e] and [i] is neutralized, the suffix in (43) is known to be -iw- because of the stress pattern: this allomorph is pre-accenting

10.2.2. e-verbs with the zero allomorph

Usual take: the underlying representation of the secondary imperfective is -Ø-, the vowel [a] is its thematic suffix

The choice for the zero allomorph is a property of the stem (see Matushansky 2009)


The vowel cluster resulting from the verbal thematic vowel and the thematic vowel [a] of the zero secondary imperfective suffix is resolved by **Jakobson’s vowel deletion rule**:

- (44) [[[[do.gor-e]_{2-Ø IMPFV}]_{3-a-l}]₄ finish burning.IMPFV.PAST.MSG
 VOWEL DELETION
 dogorál

The zero allomorph is selected by 3 otherwise regular roots

And one more root not only selects the zero allomorph but also undergoes ablaut:

- (45) [[[[obid-e]_{2-Ø IMPFV}]_{3-a-l}]₄ offend.IMPFV.PAST.MSG
 ABLAUT

[[[[obid-i]₂- Ø_{IMPV}]₃-a-l]₄

 obizál TRANSITIVE SOFTENING

The [v] allomorph in (34c) is not accounted for

10.2.3. Intermediate conclusions

The behavior of e-verbs with respect to transitive softening can be explained by the assumption that the thematic suffix [e] can sometimes be raised to [i]

This is a rare and lexically determined process that is also attested for first-conjugation e-verbs

Problem for all accounts: the existence of both (34a) and (34c) is unexpected

Possible intuition: normally [e] would trigger glide-insertion, but if it fails, [e] is deleted before the following vowel

- Why would glide-insertion fail?
- Why doesn't [e] trigger palatalization before being deleted?

As a matter of fact, the first-conjugation present-tense suffix **-jo-** (or **-ě-**) **also fails to trigger palatalization when deleted** before the 1sg **-u-**

The optimal solution would also account for **the exceptional -w- allomorph with five i-verbs** and for the 14 exceptional i-verbs without transitive softening in the secondary imperfective, but we are not there yet

This statistic seems to suggest that in the second conjugation the **-w-** is an exception

10.3. Supplementary puzzle: non-TS i-verbs

A small number of i-verbs do not exhibit transitive softening in the secondary imperfective

Three types of exceptions, like with e-verbs:

- (46) a. *zaxvatít/zaxvátivatí* 'to conquer PFV/IMPV' -iw-
 b. *otrubít/otrubátí* 'to chop off PFV/IMPV' -Ø-
 c. *zatmít/zatmevátí* 'to eclipse PFV/IMPV' -w- + thematic -e-

The last option, (46c), is unexpected (attested for 5 roots, with some regularization)

10.3.1. Unexpected [e] secondary imperfectives with i-verbs

Second-conjugation i-verbs do not take the **-w-** allomorph of the secondary imperfective

The five exceptions all **surface with [e] in the secondary imperfective**:

- (47) a. *zatmít/zatmevátí* 'to eclipse PFV/IMPV' i-roots with SI in [ev]
 b. *prodlít/prodlevátí* 'to extend PFV/IMPV' (also *prodlítí*)
 c. *rastlít/rastlevátí* 'to deprave PFV/IMPV'
 d. *upokóit/upokoevátí* 'to lay to final rest PFV/IMPV' (all from Zaliznjak 1980)
 e. *upoít/upoevátí* (also *upáivati*) 'to enrapture PFV/IMPV' (from Levin 1977:240)

The authoritative 1980 edition of *Russian Grammar* (Švedova 1980-I:349) suggests that the surface *e* in these verbs is used conventionally and conceals an underlying [i] (Russian vowel neutralization does not allow one to distinguish the two phonemes in unstressed syllables).

Support: one more verb showing up with an unexpected [e] in the secondary imperfective, *zastřít/zastrevátí* 'to get stuck', has an underlying [ja] (from an *n*-verb, Dal' 1863-1866 (2001) gives the dialectal variant *zastřétí*), which would also neutralize with [i].

If so, we have the same issue for i-verbs as for e-verbs: how come both Ø and [v] allomorphs are possible?

For the synchronically unpaired verbs *namerevát'sja* 'to intend', *nedoumevátj* 'to puzzle (over)', *oburevátj* 'to overwhelm', and *uveščevátj* 'to admonish' it is impossible to determine what a primary imperfective is

Otherwise the question arises where the surface [e] comes from

10.3.2. i-verbs with no transitive softening in the secondary imperfective

In addition to the exceptional e-verbs in (34) there are 14 i-verbs with no transitive softening in the secondary imperfective

6 verbs that have the zero allomorph only, for non-motion verbs the a-imperfective stem is a bound one (available only with a prefix):

- (48) a. *-kup-: kupítj (-kupájut)* 'to buy'
b. *-nřz-: -nřzítj (-nřzájut)* 'to pierce'
c. *-rub-: rubítj (-rubájut)* 'to chop'
d. *-log-: -ložitj (-lagájut)* 'to put' (with a suppletive imperfective for some prefixes)
e. *-pusk-: pustítj (puskájut)* 'to let' (with stem allomorphy)
f. *-stup-: stupítj (stupájut)* 'to step' (underived forms both a bit archaic/formal)

For 8 more unprefixated perfectives the existence of the *-iv-* secondary imperfective coincides with the availability of an unprefixated imperfective counterpart with pluractional meaning (indicated by +)

For four motion verbs i-stems are perfective, while *aj-* stems are pluractional:

- (49) a. *brósitj* 'to throw' *brosájut* 'they throw+' *-brásivatj*
b. *katítj* 'to roll' *katájut* 'they roll+' *-kátivatj*
c. *taščítj* 'to pull' *taskájut* 'they pull+' *-tášktivajut*
d. *-xvatítj* 'to grab' *xvatájut* 'they grab+' *-xvátivajut*

One bound motion root with ablaut and the uncharacteristic transitive softening theme *-a/j-* in the pluractional stem:

- (50) *-skok-* 'jump' *-skočitj* 'to jump' *skáčut* 'they jump+', inf: *skakátj* *-skák-iv-aj-ut*

Three **bound roots** that (a) have non-bound unprefixated imperfective counterparts in *-aj-*, (b) for some prefix-stem combinations also have transitive softening in secondary imperfectives uniformly formed with the Ø allomorph, (c) are not motion verbs:

- (51) *-glot-* 'swallow'
a. *poglotítj* 'to absorb' *pogloščátj* TS
b. *proglotítj* 'to swallow' *proglátivatj* no TS
- (52) *-kus-* 'bite'
a. *vkusítj* 'to partake' *vkušátj* TS
b. *iskusítj* 'to tempt' *iskušátj* TS
c. *zakupítj* 'to eat an appetizer' *zakúšivatj* no TS
- (53) *-lom-* 'break'
a. *prelomítj* 'to refract' *prelomliátj* TS
b. *prolomítj* 'to break through' *prolámivatj* no TS

Suggestions that these are not true aspectual pairs and the *a*-variants are not derived from the *i*-variants can be found in Gribanova 2013 and Tatevosov 2013, but this approach cannot account for the lack of transitive softening in *-iv-* secondary imperfectives for, e.g., *za-xvat-ítj/zaxvat-ív-a-tj* 'to conquer'.

10.4. Sketch of a proposal

Sometimes the final [i] and [e] of the verbal stem is occasionally part of the root rather than a thematic suffix

The same mechanism is then activated as the one that requires glide-insertion with athematic verbs in section 10.1.1, and we end up with [eva] and [iva] secondary imperfectives

Otherwise the thematic *-i-* in second-conjugation verbs turns into a glide, and the thematic *-e-* is deleted before another vowel

The deleted *-e-* does not palatalize the stem-final consonant because maybe it never does

Open question: i-verbs with no transitive softening

Appendix 1 VELAR PALATALIZATION AND [A] FORMATION

Palatalized velars turn into alveopalatals (Halle 1959, Lightner 1965, Plapp 1999, etc.):

- (54) a. *ribák* ‘a fisher’ → *ribáčítʃ* ‘to fish’
b. *grex* ‘sin’ → *grešítʃ* ‘to sin’

Both thematic suffixes surfacing as [e] in the past tense (both the first-conjugation *-e[j]-* and the second-conjugation *-e-/i-*) turn into [a] if the stems ends in a palatal [č], [š], [ž], or [šč]:

The behavior of the first-conjugation verbalizer *-e[j]-* is mixed: when combining with a stem ending in a velar, it changes the velar into a palatal and changes into [a]. However, when the palatal is underlying (and presumably non-palatalized), e.g., with the root *-svez-* ‘fresh’, or with phrasal bases (e.g., *obezděnežetʃ* ‘to become penniless’), no change occurs. Lightner 1965:70-73 discusses the former case as the default and Lightner 1967, the latter.

- (55) first-conjugation verbalizer *-e[j]-*
a. *-krasn-* ‘red’ + *-e-* → *krasnéet/krasnél* ‘be/become red’_{PRES.3SG/PAST.MSG}
b. *-nišč-* ‘beggarly’ + *-e-* → *nišč[et]/nišč[el]* ‘become a beggar’_{PRES.3SG/PAST.MSG}

- (56) second-conjugation verbalizer *-e-*
a. *-vis-* ‘hang’ + *-e-* → *visít/visél* ‘hang’_{PRES.3SG/PAST.MSG}
b. *-vizg-* ‘squeal’ + *-e-* → *vizžít/vizž[el]* ‘squeal’_{PRES.3SG/PAST.MSG}

The same process characterizes the elative suffix *-ejš-*:

- (57) a. *-krasn-* ‘red’ + *-ejš-* → *krasnějšij* ‘the reddest’
b. *-gorʃk-* ‘bitter’ + *-ejš-* → *gorč[ejš]ij* ‘the bitterest’

The only second-conjugation exception to this generalization is the verb *kišétʃ* ‘to swarm’

Lightner 1967 also lists the verb *obezmátočetʃ* ‘to lose the beehive’s queen’, but it belongs to the first conjugation

Transitive softening in [a]-verbs transitive softening is indistinguishable from velar softening, so in the present tense and in the PPP they add nothing:

- (58) a. *zamolč[á]la* ‘fall silent’_{PAST.FSG} a-verb
b. *zamolč[ít]/zamolč[ú]* ‘will fall silent’_{3SG/1SG}
c. *zamólčana* ‘kept silent’_{PPP.FSG}

In the secondary imperfective (12 verbal roots) they show no transitive softening, supporting the intuition that a deleted [e] does not trigger palatalization

Appendix 2 NON-UNIFORMITY OF E2A AFTER PALATALSP

The verbalizing suffix *-e-* is deadjectival and sometimes denominal (or de-PP)

It surfaces as [e] before consonants and as [ej] before vowels, hence the suggested underlying representation (which also allows it to be distinguished from the second-conjugation *-e-*)

The vowel of the first-conjugation thematic suffix *-eⁱ-* turns into [a] after a palatal that stems from a palatalized velar:

I know of one exception: the verb *ploxéti* ‘to take a turn to the worse’

(59) first-conjugation verbalizer *-eⁱ-*

- a. *-krasn-* ‘red’ + *-e-* → *krasnéet/krasnél* ‘be/become red(der)’ PRES.3SG/PAST.MSG
- b. *-dik-* ‘wild’ + *-e-* → *dičáet/dičál* ‘be/become wild(er)’ PRES.3SG/PAST.MSG

However, the surface-non-palatalized palatals [š] and [ž] that do not correspond to palatalized velars do not trigger the e2a change:

- (60) a. *-svež-* ‘fresh’ → *svežéet/svežél* ‘be/become fresh(er)’ PRES.3SG/PAST.MSG
- b. *-xoroš-* ‘good, lovely’ → *xorošéet/xorošél* ‘be/become lovely(er)’ PRES.3SG/PAST.MSG

If the base stem ends in the (surface-palatalized) palatal [šč], the e2a change is obligatory:

- (61) a. *-tošč-* ‘emaciated’ → *toščáet/toščál* ‘become emaciated’ PRES.3SG/PAST.MSG
- b. *-nišč-* ‘beggarly’ → *niščáet/niščál* ‘become a beggar’ PRES.3SG/PAST.MSG

These facts suggest that the palatal needs to be palatalized for the change to happen

In addition, when the base is complex, the e2a change does not occur:

- (62) a. *dén’gi* ‘money’ → *obeždénežet/obeždénežel* ‘become penniless’ PRES.3SG/PAST.MSG
- b. *mátka* ‘queen bee’ → *obežmátočeti* ‘to lose the queen bee’ PRES.3SG/PAST.MSG
- c. *mox* ‘moss’ → *{obo/za}mšéet/{obo/za}mšél* ‘become mossy’ PRES.3SG/PAST.MSG

The e2a change is therefore conditional on both phonology and structure

Lightner 1965:70-73 treats the e2a change as the default for the suffix *-eⁱ-* and Lightner 1967, its absence.

The e2a change also characterizes the elative suffix *-ejš-*:

- (63) a. *-krasn-* ‘red’ + *-ejš-* → *krasnéjšij* ‘the reddest’
- b. *-gor’ik-* ‘bitter’ + *-ejš-* → *gorčájšij* ‘the bitterest’

No exceptions to be found in Zaliznjak 1980, but attested cases of derivation from stems ending in a palatal undergo the e2a change (unlike with the verbalizer *-eⁱ-*), but not always:

- (64) a. *-riž-* ‘red-haired’ → *rižájšij/rižéjšij* ‘the most red-haired’, *rižéti* ‘to turn reddish’
- b. *-svež-* ‘fresh’ → *svežájšij* ‘the freshest’, *svežéti* ‘to be/become fresh(er)’

Structurally elative formation does not involve a category change

Appendix 3 NON-DEVERBAL *-TELⁱ-*

One of the two second-conjugation verbs that surface with [a] in the past tense goes the same way (the other does not form an agentive noun):

- (65) a. *gónit/gnal* ‘chase’ PRES.3SG/PAST.MSG → *goníteli* ‘oppressor’
- b. *spit/spal* ‘sleep’ PRES.3SG/PAST.MSG

An informal check for neologisms shows that both options are possible (albeit marginally):

Morris Halle would have pointed out that Aleksei Kruchenykh has created the neologism *zudíteli* (from *zudéti* ‘to itch’), yet it has not caught up at all

- (66) a. *terpíteli/terpételi* ‘sufferer’
- b. *vertíteli/vertételi* ‘turner’
- c. *dudíteli/dudételi* ‘wind instrument player’

Itkin 2007:168 points out that thematic vowels can change unpredictably, including cases of athematic verbs surfacing with the thematic vowel *i*: *spasíteľi* ‘Savior’ from the athematic verb *spasíti* ‘to save’ (imperfective *spasáti*, cf. *spasátelʹi* ‘rescuer’).

First, *-telʹi*- derivation from athematic verbs is completely unpredictable, the other two cases are the infinitive-based *blʹustíteľi* ‘protector’ (from *blʹustí* ‘to safeguard’) and *rastíteľnʹij* ‘vegetal’ (from *rastí* ‘to grow’).

Secondly, there is evidence that derivation in [itelʹi] may be non-deverbal:

- (67) a. *pokrovíteľi* ‘protector’: **krovíti*, cf. *kritʹi* (1sg: *króju*) ‘to cover’ Ø class
 b. *dvižíteľi* ‘mover’: **dvižiti*, cf. *dvígati* (-a/-i-) ‘to move’ -a/i- class
 c. *skazíteľi* ‘storyteller’: **skazíti*, cf. *skazáti* (-a/-i-) ‘to tell’ -a/i- class
 d. *revníteľi* ‘zealot’: **revníti*, cf. *revnováti* (-ov/-u-) ‘to be jealous’ -ow- class
 e. *voíteľi* ‘warrior’: **vojíti*, cf. *voeváti* (-ov/-u-) ‘to wage war’ -ow- class
 f. *vlastíteľi* ‘sovereign’: **vlastíti*, cf. *vlastʹi* ‘power’, *vladéti* ‘to own’ -e- class
 g. *račíteľi* ‘zealot’: **račíti* (attested in some dialects) missing -i- class
 h. *popečíteľi* ‘warden’: *(po)pečíti, cf. *péčisʹja* ‘to care for’ Ø class

In DM terms, *-itelʹi*- involves derivation from the root, some support from:

- (68) a. *deržátelʹi* ‘holder’ ← *deržáti* ‘to hold’
 b. *Spas-Vsederžátelʹi* ‘Christ Pantocrator, lit. All-Holder’ (cf. *deržáva* ‘state’)

There is one [atelʹi] noun that is formed from the lexical root rather than the verbal stem:

- (69) *znamenátelʹi* ‘denominator’: *znamenováti* ‘to signify’

This one is not semantically transparent at all

Appendix 4 THE HETEROCLITE VERBS *JESTʹi* ‘TO EAT’, *XOTÉti* ‘TO WANT’ AND *DATʹi* ‘TO GIVE’

The heteroclite verb *xotéti* ‘to want’ behaves as a second-conjugation verb in the plural and as a TS first-conjugation verb in the singular:

Table 7: Heteroclite verb *xotéti* ‘to want’

		singular.M (F/N)	plural
present	1	xoč-ú	xot-í-m
	2	xóč-e-š	xot-í-te
	3	xóč-e-t	xot-i-át
past		xot-é-l (a/o)	xot-é-l-i

The singular forms (with the consonant mutation known as transitive softening) indicate the presence of a glide (i.e., [č] ← [tj] is independently motivated)

Proposal: the very same second-conjugation thematic suffix *-e-* undergoes the same ablaut to [i] in the present as other e-verbs

The difference is that the stem *xot-é-* takes the first-conjugation present-tense suffix (*-i-*) in the singular and the second-conjugation present-tense suffix (*-Ø-*) in the plural

The difference from Melvold’s view would be the change in the vowel; Melvold’s view would hypothesize [ēē] → [je] in the singular and [ei] → [i] in the plural. Much depends on whether [e] can turn into [j] before a vowel

The heteroclite athematic verb *jestʹi* ‘to eat’ behaves as a second-conjugation verb in the plural and has a unique conjugation pattern (no tense suffix) in the singular:

Table 8: Heteroclite verb *jesti* ‘to eat’

		singular.M (F/N)	plural
present	1	je[d]-m	jed-í-m
	2	je[d]-š	jed-í-te
	3	jes-t	jed-í-át
past		jé[d]-l (a/o)	jé[d]-l-i

Standard view: zero present-tense suffix for the singular, second-conjugation present-tense [i] suffix for the plural

The final [d] of the stem is deleted or changes to [s] before consonantal suffixes (due to an independently attested process)

Notice, everyone needs a zero present-tense suffix!

My view: zero second-conjugation present-tense tense throughout, [i] **augment for the plural**
Incidentally, it ends up being a regular post-accenting verb with retraction in the past (just like *pěti* ‘to sing’)

Unsolved problem: the heteroclite verb *dati* ‘to give’ behaves like *jesti* ‘to eat’ in the singular and has mixed conjugation in the plural:

Table 9: Heteroclite verb *dati* ‘to give’

		singular.M (F/N)	plural
present	1	da[d]-m	dad-í-m
	2	da[d]-š	dad-í-te
	3	das-t	dad-út
past		dá[d]-l (a/o)	dá[d]-l-i

No one has a nice explanation

But importantly, there are other verbs with an exceptional 3PL, e.g., *čtití* ‘to honor’

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