**Stem stress vs. paradigm uniformity: the case of athematic verbs in Belarusian**

*Lena Borise*
University of the Basque Country (EHU/UPV)

## 1. Introduction

- Belarusian presents some morphophonological phenomena that differentiate it from other East Slavic languages but are **poorly documented** and/or **virtually unexplored** from a theoretical perspective.
- The stress properties of Belarusian, including their diachronic and dialectal dimensions, are firmly in this category.
- In this paper, I analyze the stress properties of **athematic verbs** in Belarusian, compare them to the better studied corresponding facts in Russian (Kiparsky & Halle 1977; Zaliznjak, 1985; Matushansky 2022; Matushansky to appear), and sketch out some components of a future analysis of their **historical development** and **synchronic properties,**
- I demonstrate that the **mobile (retracting) stress pattern** has been productive in athematic verbs in Belarusian, in that it **attracts verbs from other classes** (typically, post-accenting ones).
- I propose that two independent forces give rise to retracting stress patterns in Belarusian:
    - **preference for stem** stress
    - **preference for paradigm uniformity**
- Finally, I argue that the **C(C)V́C(C)-*ci* template for infinitives** is independently attested in Belarusian, which makes the stress-retracting process target the infinitives first.

## 2. Background: Russian
### 2.1 Verb classes

- Russian verbs comprise two classes: **thematic** (large, open) and **athematic** (small, closed, ca. 75-90 verbs) ones.
    - thematic verbs contain a **thematic vowel** (1), athematic verbs do not (2).

(1)    a.  *čit-a-t'*            b.  *čit-a-l-a*
            read-TH-INF          read-TH-PST-F.SG
            'to read'              'read (f.)'

         c.  *khran-i-t'*         d.  *khran-i-l-a*
            keep-TH-INF          keep-TH-PST-F.SG
            'to keep'            'kept (f.)'

(2)    a.  *kras-t'*            b.  *kra-l-a*
            steal-INF            steal-PST-F.SG
            'to steal'           'stole (f.)'

### 2.2 Accentual properties of morphemes

- According to a widely accepted analysis of Slavic accentuation, morphemes are specified for **accent-bearing properties** (Zaliznjak, 1985; Halle 1973; Melvold 1990) and form the following categories:
    - accented (carries accent),
    - pre-/post-accenting (assigns stress to the preceding/following morpheme),
    - unaccented (unspecified for accent)

- The location of stress is determined by the **Basic Accent Principle** (BAP) (Kiparsky & Halle 1977):

(3)    Assign stress to the **leftmost accented vowel**;
        if there is no accented vowel, assign stress to the **leftmost vowel**.

- In Russian, the verbal affixes that are relevant for the analysis are:
    - pre-accenting:    INF
    - accented:         PST-F.SG, PRS.3SG
    - unaccented:       PST-PL

## 2.2 Accentual properties of athematic verbs

- Athematic verbal stems can also be **accented**, **unaccented**, and **post-accenting**.
- Additionally, some athematic stems are **retracting** (acting like unaccented/post-accenting in PRS.3SG and like accented in the infinitive or infinitive & past tense). This is illustrated in (4).

(4)    *Accentual properties of athematic verbs in Russian*
       *(accent = underscore, retracting accent = squiggly underscore, stress = acute)*

|     | morpheme |  | pre-accenting INF | accented PRS.3SG | accented PST-F.SG | **unaccented** PST-PL |
|-----|----------|--|-------------------|------------------|-------------------|----------------------|
| a.  | accented:        | *-léz-* 'climb'   | *léz-_t'*   | *léz-et*              | *léz-l-a*   | *léz-l-i*   |
| b.  | unaccented:      | *-ží(v)-* 'live'  | *ží-_t'*    | *živ<sup>j</sup>-ót*  | *ži-l-á*    | *ží-l-i*    |
| c   | post-accenting:  | *-nes-* 'carry'   | *nes_-_ti<sup>1</sup>* | *nes<sup>j</sup>_-ót* | *nes_-l-á* | *nes_-l-í* |
| d.  | retracting:      | *-kra(d)-* 'steal'| *krás-_t'*  | *krad-ót*             | *krá-l-a*   | *krá-l-i*   |

## 3. Belarusian: the facts
## 3.1 General info

- East Slavic, ca. 3.5 million of active speakers (*Ethnologue*);
- Three main dialect groups: North-Eastern (NE), South-Western (SW, includes the Palesse varieties), and Central;
- The Central dialects present a mixture of NE and SW dialect properties;
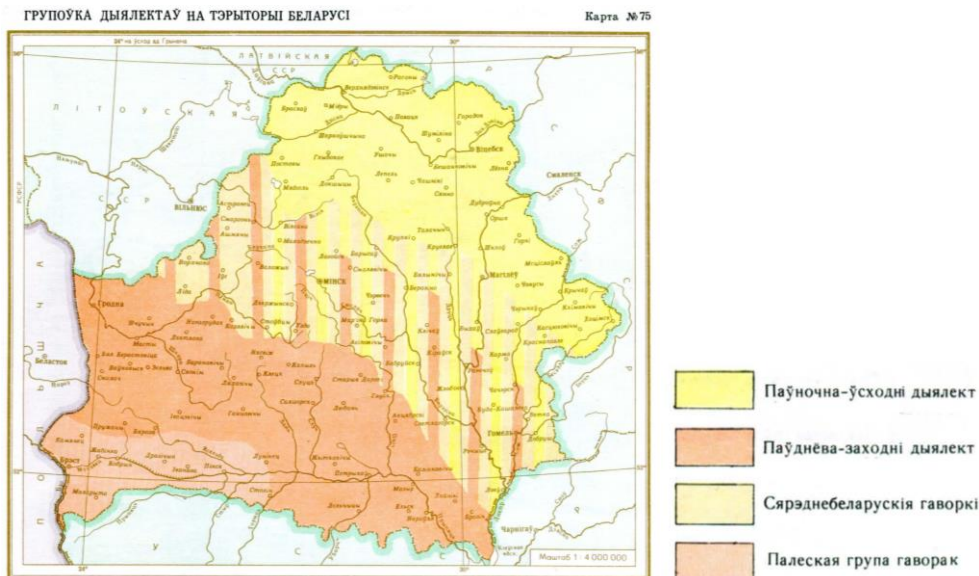- Literary Belarusian is based on the Central dialects.



*Figure 1. Main dialect groups of Belarusian: NE (darker yellow), Central (lighter yellow + stripes), SW (orange + light orange) (Avanesaŭ, Krapiva & Matskevich 1969)*

---

[1] This unexpected stress assignment & BAP violation is discussed in [7].

### 3.2 Accentual properties of athematic verbs in (standard) Belarusian

- The same typology of the accentual properties of verbal morphemes can be applied to Belarusian,
- The accentual properties of verbal affixes are slightly different from those Russian:
    - pre-accenting:   INF
    - accented:     PST-F.SG, PRS.3SG, **PST-PL**

- **Accented** athematic stems in Belarusian behave identically to Russian: they have fixed stem stress, (5a).
- The PST-PL form of **unaccented stems** reveals that (PST-)PL is accented in Belarusian, (5b).
- In fact, in contrast with Russian, all overt PST morphemes (PST-PL, PST-F/M/N.SG) in Belarusian are **accented**, providing a strong example of ***paradigm uniformity***.
- From this, it follows that unaccented and post-accenting stems have **identical stress patterns** in Belarusian, (5b-c);
    - in Russian, athematic verbs with unaccented and post-accenting stems differ only in the PST-PL form, (4b-c).
    - the shape of the infinitive, with the truncated/full form of the infinitival suffix (*-c'/-ci*), still allows for differentiating unaccented and post-accenting stems in Belarusian.
- Together, unaccented and post-accenting stems stand in **opposition** to the retracting (and accented) stems in Belarusian.

(5)   *Accentual properties of athematic verbs in Belarusian*
     *(accent = underscore, retracting accent = squiggly underscore, stress = acute)*

| | morpheme | | pre-accenting<br>INF | accented<br>PRS.3SG | accented<br>PST-F.SG | **accented**<br>PST-PL |
|----|----|----|----|----|----|----|
| a. | accented: | *-lez-* 'climb' | *léz-_ci* | *léz-e* | *léz-l-a* | *léz-l-i* |
| b. | unaccented: | *-žy(v)-* 'live' | *žý-_c'* | *žyvʲ-é* | *žy-l-á* | *žy-l-í* |
| c | post-accenting: | *-bry(d)-* 'wander' | *brys_-_cíˡ* | *brydz_-é* | *bry_-l-á* | *bry_-l-í* |
| d. | retracting: | *-nes-* 'carry' | *nés-_ci* | *niasʲ-é* | *nés-l-a* | *nés-l-i* |

### 3.2 Accentual properties of athematic verbs in Belarusian

- Strikingly, a number of the **post-accenting** and some **unaccented** athematic verbs in Russian systematically correspond to **retracting** ones in (standard) Belarusian: cf. (4b) vs. (5d).[2]
- If dialectal Belarusian facts are taken into account, many of these verbs have both a post-accenting and a retracting pattern (both in the infinitive and person forms), as shown in (6).

(6)   *Belarusian retracting verbs corresponding to the Russian post-accenting/unaccented ones*

| | meaning | Belarusian (INF/PST-F.SG/PST-PL) | | Russian<br>(INF/PST-F.SG/PST-PL) |
|----|----|----|----|----|
| | | standard /Central<br>INF+PST retracting | dialects (NE & SW)<br>post-accenting | post-accenting |
| a. | 'carry' | *nés-ci*<br>*nés-l-a*<br>*nés-l-i* | *nias-cí*<br>*nias-l-á*<br>*nias-l-í* | *nes-tí*<br>*nes-l-á*<br>*nes-l-í* |
| b. | 'transport' | *véz-ci*<br>*véz-l-a*<br>*véz-l-i* | *viaz-cí*<br>*viaz-l-á*<br>*viaz-l-í* | *vez-tí*<br>*vez-l-á*<br>*vez-l-í* |

---

[2] The data used here comes from native speaker judgements, including my own, and grammars/dictionaries (Biryla & Shuba 1985; Kolas, Krapiva & Hlebka 2002; Kapyloŭ 2016).

| | | | | |
|---|---|---|---|---|
| c. | 'scoop' | *hréb-ci*<br>*hréb-l-a*<br>*hréb-l-i* | *hrab-cí*<br>*hrab-l-á*<br>*hrab-l-í* | *gres-tí*<br>*greb-l-á*<br>*greb-l-í* |
| d. | 'shake' | *trés-ci*<br>*trés-l-a*<br>*trés-l-i* | *tras-cí*<br>*tras-l-á*<br>*tras-l-í* | *trias-tí*<br>*trias-l-á*<br>*trias-l-í* |
| e. | 'scratch' | *skréb-ci*<br>*skréb-l-a*<br>*skréb-l-i* | *skrabcí/ škrab-cí*<br>*skrab-l-á/ škrab-l-á*<br>*skrab-l-í/ škrab-l-í* | *skres-tí*<br>*skreb-l-á*<br>*skreb-l-í* |
| f. | 'pluck, nip, nibble' | *skúb-ci*<br>*skúb-l-a*<br>*skúb-l-i* | ?<br>*skub-l-á*<br>*skub-l-í* | *skub-tí* (dial.)<br>*skub-l-á*<br>*skub-l-í* |
| g. | 'talk nonsense' | *vérz-ci*<br>*vérz-l-a*<br>*vérz-l-i* | *viarz-cí*<br>*viarz-l-á*<br>*viarz-l-í* | –<br>–<br>– |
| h. | 'spin (wool)' | *prás-ci*<br>*prá-l-a*<br>*prá-l-i* | –<br>–<br>– | *priás-t'*<br>(unaccented/retracting)<br>*priá-l-a/ pria-l-á*<br>*priá-l-i* |
| i. | 'curse' | *kliás-ci*<br>*kliá-l-a*<br>*kliá-l-i* | –<br>*klia-l-á*<br>*klia-l-í* | *kliás-t'* (unaccented)<br>*klia-l-á*<br>*klia-l-í* |
| j. | 'tear, shred' | *dzér-ci*<br>*dzér-l-a*<br>*dzér-l-i* | –<br>–<br>– | *drá-t'* (unaccented)<br>*dra-l-á*<br>*drá-l-i* |
| k. | 'die' | *pamér-ci*<br>*pamér-l-a*<br>*pamér-l-i* | –<br>–<br>– | *umeré-t'* (unaccented)<br>*umer-l-á*<br>*úmer-l-i* |
| l. | 'take' | *uziá-c'*<br>*uziá-l-a*<br>*? uziá-l-i* | –<br>*uzia-l-á*<br>*uzia-l-í* | *vziá-t'* (unaccented)<br>*vzia-l-á*<br>*vziá-l-i* |

- A similar picture is presented by verbs that correspond to the Russian post-accenting ones in *-č*.
- In Belarusian, the retractive character of accentuation is evident, given the unstressed **full infinitival suffix -čy**.
- Not all retracted PST-PL versions are fully acceptable in standard language: cf. (6l), (7b, c).
- Roots in *-h* do not drop it and seem to be particularly adamantly retracting (7d-f).

(7)   *Belarusian retracting verbs corresponding to the Russian post-accenting ones -č*

| | | Belarusian (INF/PST-F.SG/PST-PL) | | Russian |
|---|---|---|---|---|
| | meaning | standard /Central<br>INF+PST retracting | dialects (NE & SW)<br>post-accenting | (INF/PST-F.SG/PST-PL)<br>post-accenting |
| a. | 'cut, chop' | *sék-čy*<br>*sék-l-a*<br>*sék-l-i* | *sia-čý*<br>*siak-l-á*<br>*siak-l-í* | *sé-č*<br>*sek-l-á*<br>*sek-l-í* |
| b. | 'bake' | *pék-čy*<br>*pék-l-a*<br>*?pék-l-i* | *pia-čý*<br>*piak-l-á*<br>*piak-l-í* | *pé-č*<br>*pek-l-á*<br>*pek-l-í* |

| | | | | |
|---|---|---|---|---|
| c. | 'flow' | *cék-čy*<br>*cék-l-a*<br>*?cék-l-i* | *cia-čý*<br>*ciak-l-á*<br>*ciak-l-í* | *té-č*<br>*tek-l-á*<br>*tek-l-í* |
| d. | 'lie down' | *léh-čy*<br>*léh-l-a*<br>*léh-l-i* | –<br>*liah-l-á*<br>*liah-l-í* | *lé-č*<br>*leg-l-á*<br>*leg-l-í* |
| e. | 'harness' | *zapréh-čy*<br>*zapréh-l-a*<br>*zapréh-l-i* | –<br>–<br>– | *zapria-č*<br>*zapreg-l-á*<br>*zapreg-l-í* |
| f. | 'run' | *béh-čy*<br>*béh-l-a*<br>*béh-l-i* | –<br>–<br>– | *bežá-t'* (thematic)<br>*bežá-l-a*<br>*bežá-l-i* |

- Additionally, several post-accenting stems have retraction in the infinitive only:

(8)   *Belarusian* INF-*retracting verbs corresponding to the Russian post-accenting ones*

| | meaning | Belarusian (INF/PST-F.SG/PST-PL) | | Russian (INF/PST-F.SG/PST-PL) |
| | | standard /Central<br>INF-retracting | dialects (NE & SW)<br>post-accenting | post-accenting |
|---|---|---|---|---|
| a. | 'weigh down' | *hnés-ci*<br>–<br>– | *hnias-cí*<br>*hnia-l-á*<br>*hnia-l-í* | *gnes-tí*<br>*gne-l-á*<br>*gne-l-í* |
| b. | 'lead' | *vés-ci*<br>–<br>– | *vias-cí*<br>*via-l-á*<br>*via-l-í* | *ves-tí*<br>*ve-l-á*<br>*ve-l-í* |
| c. | 'sweep' | *més-ci*<br>–<br>– | *mias-cí*<br>*mia-l-á*<br>*mia-l-í* | *mes-tí*<br>*me-l-á*<br>*me-l-í* |
| d. | 'braid' | *plés-ci*<br>–<br>– | *plias-cí*<br>*plia-l-á*<br>*plia-l-í* | *ples-tí*<br>*ple-l-á*<br>*ple-l-í* |

- To recap, numerous post-accenting and unaccented athematic verbs in Russian correspond to retracting ones in Belarusian, where the retraction may apply to the infinitive and past tense forms or the infinitive only.

## 4. Belarusian: further dialectal and diachronic facts
## 4.1 Dialectal distribution of retracted forms
- The data in (8) suggests that the shift of post-accenting stems into the retracting category **starts with the infinitive**, and spreads to past tense forms later.
  - as a counterpoint, the fact that the past tense forms in (8), in contrast with those in (6) and (7), do not contain the consonant-final version of the stem, C(C)VC(C), is likely of importance – more on this later.
- Distributional evidence in Belarusian dialects also supports the idea that retraction first applies to the infinitive, and later spread to the past tense forms, given that INF-retracting has a wider dialectal distribution that PST-retracting:
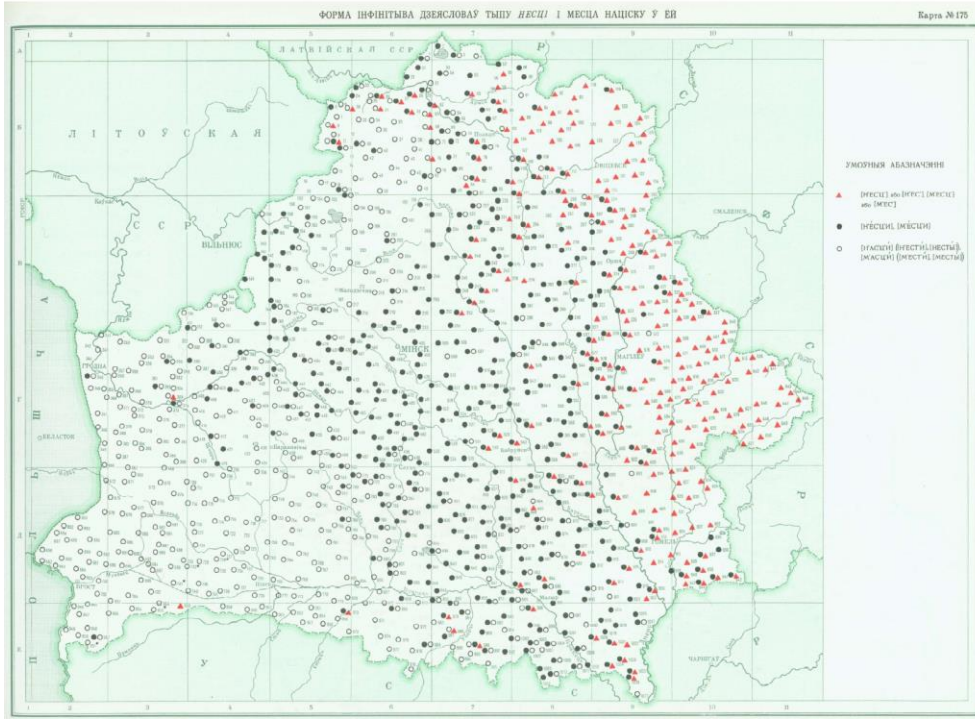
*Figure 2. The distribution of retracted infinitives of the nésci type (black circles) vs. suffix-stressed infinitives of the niascí type (white circles) (Avanesaŭ, Krapiva & Matskevich 1963).*



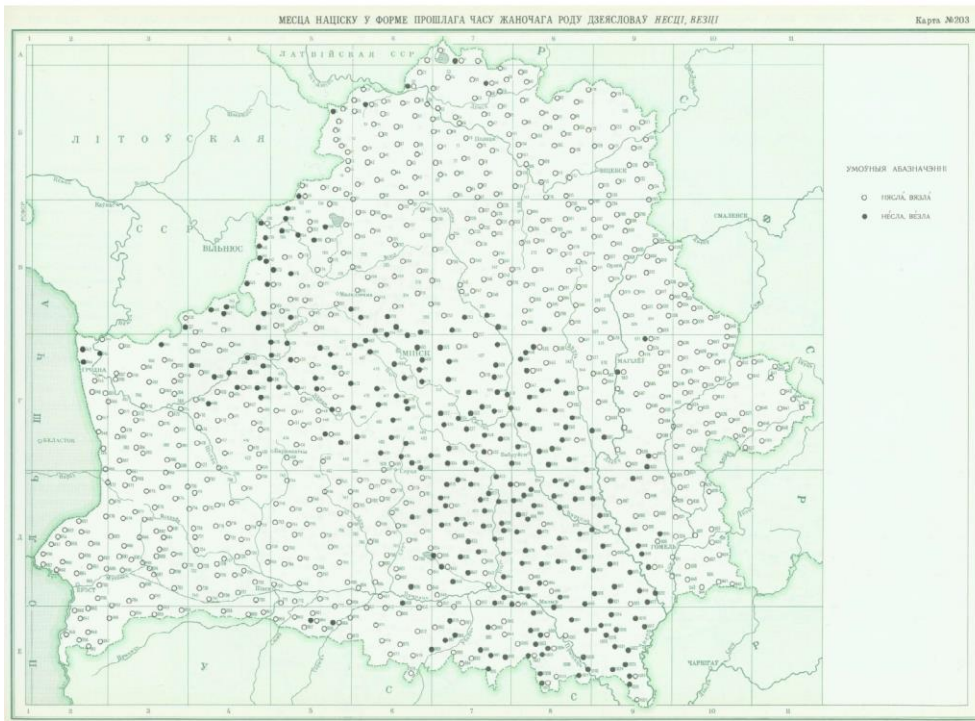*Figure 3. The distribution of retracted past tense forms of the nésla type (black circles) vs. suffix-stressed past tense forms of the niaslá type (white circles) (Avanesaŭ, Krapiva & Matskevich 1963).*

**4.2 Diachronic evidence**

- Evidence from [e]->[o] change, which applied in Belarusian later than in Russian (in the 16th century), suggests that the stress retraction occurred after the [e]->[o] change ceased to be active (cf. *pamérla, *pamiórla* 'die-PST-F.SG') (Tomchyk 2010: 72).
- The evidence from 16th & 17th century sources, some of which include stress marking, is not conclusive due to limited discussion in the existing literature.
- E.g., Zhuraŭski (1967: 286) reports that some printed 17th century editions contain forms like *былú, принѧлú* (cf. today's Belarusian *bylí* 'be-PST-PL', *prynialí* 'accept-PST-PL'), which suggests that the **accented status of PST-PL is not a recent innovation** in Belarusian.
- The 16th century Belarusian translation of the Polish *Kronika Polska, Litewska, Żmudzka i wszystkiej Rusi* contains forms like *выходúть, подносúть, приходúть, приводúть* (Zhuraŭski 1967: 272) (cf. today's Belarusian *vykhódzic'* 'come.out-INF', *padnósic'* 'bring.out-INF', *prykhódzic'* 'come.in-INF', *pryvódzic'* 'bring-INF'), which suggests that **similar stress retraction in thematic verbs had not yet taken place**.

**5. Towards an analysis**

I propose that several factors lead to the productivity of the INF-retracting pattern.

**5.1 The C(C)V́C(C)-*ci* infinitive**

- Belarusian has retained the full, syllabic infinitival ending *-ci* in unstressed positions in athematic verbs with consonant-final/C(C)VC(C) stem, (9);
    - except velar-final roots, which have developed *-čy* instead.
    - This is in contrast with Russian, where unstressed *-ci* got reduced to *-c'*, (10) (Svistunova & Tsivanova 2018):

(9)  a. *klás-ci* 'put-INF'    b. *krás-ci* 'steal-INF'                                     Belarusian

(10)  a. *klás-t'* 'put-INF'    b. *krá-st'* 'steal-INF'                                     Russian

- The availability of the stem-stressed C(C)V́C(C)-*ci* pattern for the infinitive can serve as a model for the spread of INF-retracting forms (cf. *nés-ci* 'carry-INF').

- The hypothesis that the C(C)V́C(C)-*ci* pattern is productive in Belarusian is supported by the fact that even non-retracting athematic stems acquire C(C)V́C(C)-*ci* infinitive patterns in some Belarusian dialects (e.g., Stoŭbcy, Glusk) (Matskevich 1959: 12):
    - the stem-final *-s* is not motivated etymologically and seems to serve the purpose of creating a consonant-final stem.

(11)  a. *plý-c'* → *plýs-ci* 'swim-INF'        b. *hní-c'* → *hnís-ci*    'rot-INF'

- Similarly, some Belarusian dialects (e.g., Červen', Khojniki) drop the suffix *-nu-* in infinitives, which results in a C(C)V́C(C)-*ci* pattern (Matskevich 1959: 13):

(12)  a. *sókh-nu-c'* → *sókh-ci*    'dry(-NU)-INF'

   b. *mók-nu-c'* → *mók-ci*    'get.wet(-NU)-INF'

   c. *kís-nu-c'* → *kís-ci*        'sour(-NU)-INF'

   d. *pry-výk-nu-c'* → *pry-výk-ci* 'get.used.to(-NU)-INF'

   e. *a-hlúkh-nu-c'* → *a-hlúkh-ci* 'become.deaf(-NU)-INF'

- In the eastern varieties of the SW dialects, where forms like in (11) are also attested, the *-čy* infinitives also adopt the C(C)V́C(C)-*ci* pattern (Matskevich 1959: 13):

(13)  a.  *sék-čy → sék-ci* 'cut-INF'          b.  *pék-čy → pék-ci* 'bake-INF'

- However, among these new *-ci* infinitives, stress duplicates are also attested: *pék-ci/piak-cí* 'bake-INF', *cék-ci/ciak-cí* 'flow-INF' (Matskevich 1959: 22).
- This may point to another way of arriving at a C(C)V́C(C)-*ci* infinitival pattern: *piačý → piak-cí → pék-ci*

## 5.2 Stem-faithfulness of stress and paradigm uniformity

- In general, there is a strong preference for **stem stress** in Belarusian – stronger than the corresponding tendency in e.g. Russian (Crosswhite et al. 2003).
  - E.g., **nominal and adjectival** stress is more faithful to the root in Belarusian:

(14)  a.  Bel. *spína* – Ru. *spiná* 'back.NOM'

b.  Bel. *kíška* – Ru. *kiškÁ* 'intestine.NOM'

c.  Bel. *prósty* – Ru. *prostój* 'simple.M'

  - So is stress in adverbs:

(15)  Bel. *naspékh* – Ru. *náspekh* 'hastily'

- **Thematic verbs** in Belarusian are also commonly stressed on the root:

(16)  a.  Bel. *vúdzic'* – Ru. *udít'* 'fish.INF'

b.  Bel. *dýxac'* – Ru. *dyšát'* 'breath.INF'

c.  Bel. *lʲótac'* (colloq.) – Ru. *letát'* 'fly.INF'

d.  Bel. *zaprúdzic'* – Ru. *zaprudít'* 'flood.INF'

- These examples point to the **pressure for stem stress** is operative in Belarusian, and the C(C)V́C(C)-*ci* pattern for infinitives is part of it.

- Belarusian stress is also **less mobile**, consistently with paradigm uniformity (Dubina 2012):

(17)  Bel. *vadá*/*vadú* – Ru. *vodá*/*vódu* 'water.NOM/ACC'

Bethin (2022) compares the distribution of different stress patterns in **nominal** accentual paradigms in Belarusian and Russian and shows that pattern B = FIXED SUFFIX stress is a considerably more rare pattern in Belarusian and Russian. To a somewhat lesser extent, this also applies to the mobile patterns.

(18)  **Stress patterns:**

A = FIXED STEM

B = FIXED SUFFIX

C = STEM-SUFFIX          (SG = STEM, PL = SUFFIX)

$C_1$ = STEM-SUFFIX$_1$      (SG, NOM/ACC.PL = STEM, other PL = SUFFIX)

D = SUFFIX-STEM          (SG = SUFFIX, PL = STEM)

(19) **Stress patterns in Standard Russian and Standard Belarusian declension** (Bethin 2022: 248)

|  | Standard Russian | Standard Belarusian |
|---|---|---|
| Ia MASC: | A B C **C₁**D | A B C |
| Ib NEUT: | A **B** **C** D | A D |
| II FEM: | A **B** D | A D |
| III FEM: | A C₁ | A C₁ |

## 6. Further issues: preverbs and reflexives

- Adding **preverbs** to athematic stems that allow for both retracting and post-accenting patterns results in a **stronger preference for a retracting pattern**:

(20) a. *nésla/niaslá* 'carry-PST-F.SG'

b. *pry-nésla/za-nésla/ad-nésla* 'PV-carry-PST-F.SG'

c. *??pry-niaslá/za-niaslá/ ad-niaslá* 'PV-carry-PST-F.SG'

- Preverbs in general (i.e., even in thematic roots) attract stress to the root:
  - the fact that both options in (20b) are allowed, though, does not allow for analyzing preverbs as being uniformly post-accenting.

(21) a. *siadz-é-c'/ \*sédz-e-c'* 'sit-TH-INF'

b. *ˀperasiadz-é-c'/ perasédz-e-c'* 'PV-sit-TH-INF'

(22) a. *hliadz-é-c'/ \*hlédz-e-c'* 'look-TH-INF'

b. *ˀprahliadz-é-c'/ prahlédz-e-c'* 'PV-look-TH-INF'

- These facts are reminiscent of the phenomenon of *poluotmetnost'* (Dybo, Zamiatina & Nikolaev 1993: 32; see also Jasanoff 2017: 212), whereby certain prefixed verbs in Ukrainian (and some South Slavic dialects) are stressed one syllable further to the left than their non-prefixed counterparts, as in (23).
- Note, though, that the sets of verbs that this applies to in Ukrainian and Belarusian are only partially overlapping, as far as I can tell. The Belarusian facts have not been described in the literature.

(23) a. *movč-á-ti* 'be.silent-TH-INF'     c. *za-móvč-a-ti* 'PV-be.silent-TH-INF'

b. *movč-ú* 'be.silent-1SG'     d. *za-móvč-u* 'PV-be.silent-1SG'

- A similar, though somewhat weaker, effect may be induced by the reflexive suffix *-sia:*

(24) a. *hréb-ci/ hrab-cí* 'scoop-INF'

b. *hréb-ci-sia/ ??hrab-cí-sia* 'scoop-INF-REFL'

## 7. Conclusions

- The **mobile (retracting) stress pattern** is productive in athematic verbs in Belarusian and **attracts verbs from other classes** (typically, post-accenting ones).
- Two independent forces, also attested in the nominal domain, give rise to retracting stress patterns in Belarusian:
  - **preference for stem** stress, as embodied by the **C(C)V́C(C)-*ci*** template for infinitives
  - **preference for paradigm uniformity,** as evidenced, e.g., by the accented status of all PST suffixes

- The availability of the **C(C)V́C(C)-*ci* template for infinitives** makes the stress-retracting process target the infinitives first.
- The pressure for stem-stress with the pressure for paradigm uniformity, ultimately overpowers the accented properties of PST-marking morphemes and leads to a retracting pattern.
- Preverbs and other verbal morphology (e.g., reflexive suffixes) may also play a role in this process.

**Acknowledgements**

**References**

Avanesaŭ, Ruben I., Kandrat K. Krapiva & Juzefa F. Matskevich (eds.). 1963. *Dyjalektalahichny atlas belaruskaj movy [Dialectological Atlas of Belarusian Language]*. Minsk: Vydavetstva Akademii Navuk BSSR.

Avanesaŭ, Ruben I., Kandrat K. Krapiva & Juzefa F. Matskevich (eds.). 1969. *Linhvistychnaja heahrafija i hrupoŭka belaruskikh havorak [Linguistic geography and the grouping of varieties of Belarusian]*. Minsk: Navuka i tekhnika.

Bethin, Christina Y. 2022. Stress, gender, and declension class in Belarusian. *Linguistics*. De Gruyter Mouton 60(1). 239–276. https://doi.org/10.1515/ling-2021-0171.

Biryla, Mikalai V. & Pavel P. Shuba (eds.). 1985. *Belaruskaja hramatyka [A grammar of Belarusian]*. Minsk: Navuka i texnika.

Crosswhite, Katherine, John D. Alderete, Tim Beasley & Vita Markman. 2003. Morphological effects on default stress in novel Russian words. In *Proceedings of WCCFL 22*, 151–164. Somerville, MA: Cascadilla Press.

Dubina, Andrei. 2012. *Towards a tonal analysis of free stress*. Utrecht: LOT.

Dybo, Vladimir A., Galina I. Zamiatina & Sergej L. Nikolaev. 1993. *Osnovy slavianskoj aktsentologii. Slovar: neproizvodnye osnovy muzhskogo roda. Part 1. [Fundamentals of Slavic accentology. Dictionary: non-derived stems of masculine gender. Part 1]*. Moscow: Nauka.

Halle, Morris. 1973. The accentuation of Russian words. *Janua Linguarum* 75.

Jasanoff, Jay H. 2017. *The prehistory of the Balto-Slavic accent* (Brill's Studies in Indo-European Languages & Linguistics volume 17). Leiden ; Boston: Brill.

Kapyloŭ, I. L. (ed.). 2016. *Tlumačal'ny sloŭnik belaruskaj litaraturnaj movy [A dictionary of literary Belarusian language]*. Minsk: Belaruskaja encyklapedyja.

Kiparsky, Paul & Morris Halle. 1977. Towards a reconstruction of the Indo-European accent. In Larry M. Hyman (ed.), *Studies in Stress and Accent*, 209–238. Los Angeles: University of Southern California.

Kolas, Jakub, Kandrat Krapiva & Piatro Hlebka (eds.). 2002. *Ruska-belaruski sloŭnik [Russian-Belarusian dictionary]*. 8th edn. 3 vols. Minsk: Belaruskaja encyklapedyja.

Matskevich, Juzefa F. 1959. *Marfalohija dzejaslova ŭ belaruskaj move [Verbal morphology in Belarusian]*. Minsk: Vydavetstva Akademii Navuk BSSR.

Matushansky, Ora. 2022. Russian verbal stress retraction: a bigger picture. *Paper presented at SLE 55 (workshop "Lexical and fixed word stress: Representation, Production and Perception"), University of Bucharest, 24-27 August 2022*.

Matushansky, Ora. to appear. Two BAP violations in Russian verbal stress. In Tatiana Bondarenko, Peter Grishin & Anton Kukhto (eds.), *Proceedings of FASL 30 (MIT)*.

Melvold, Janis. 1990. *Structure and stress in the phonology of Russian. PhD diss*. MIT, Cambridge, MA.

Svistunova, M.I. & H.K. Tsivanova. 2018. *Histaryčnaja marfalohija belaruskaj movy [Historical morphoogy of Belarusian]*. Minsk: Belaruski dziaržaŭny universitet.

Tomchyk, Dzmitryj S. 2010. *Historyja belaruskaj movy: fanetyka*. Baranavichy: Vydavetstva BrDU.

Zaliznjak, A. A. 1985. *Ot praslavjanskoj akcentuacii k russkoj [From Proto-Slavic to Russian accentuation]*. Moscow: Nauka.

Zhuraŭski, Arkadz' I. 1967. *Historyja belaruskaj litaraturnaj movy [The history of literary Belarusian]*. Vol. 1. Minsk: Navuka i tekhnika.