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RUSSIAN VERBAL INFLECTION (PRELIMINARY NOTES)

GDR de morphologie, 28 juin 2004

1. INTRODUCTORY REMARKS

Brown (1998): Russian verbs may have up to four stem allomorphs, each of which may be used only in specific environments. Some are more specified than others.

Possible reason: it is a much simpler way if you want a parsing algorithm.

Jakobson (1948), Halle (1963), Lightner (1972), Halle and Matushansky (in prep.): Russian stem allomorphs are phonologically determined. There are lists, but only for Readjustment rules.

Table 1: surface forms, first conjugation, regular (-aj-): čitat' 'to read'

| | | singular-M(F/N) | plural |
|-------------------|------------------------|------------------------------|-------------|
| present | 1 | čitAj-u | čitAj-em |
| | 2 | čitAj-eš | čitAj-ete |
| | 3 | čitAj-et | čitAj-ut |
| past | | čitA-l(a/o) | čitA-l-i |
| imperative | exclusive | čitAj | čitAj-te |
| | inclusive ¹ | čitAj-em | čitAj-em-te |
| gerund | present | čitAj-a | |
| | past ² | -čitA-v ³ | |
| participle | passive past | čitA-nn-aja | |
| | passive present | čitA-em-aja | |
| | active past | čitA-vš-aja | |
| | active present | čitAj-ušč-aja | |
| root | | čit- (cf. čitka 'a reading') | |

Jakobson (1948): -aj- is part of the stem (no discussion), -j- disappears before consonants

Note one: In fact, Jakobson (1948, p. 159) suggests that both glides and nasals are deleted before consonants. As argued in Kayne (1967), only glides are deleted; the VN sequence before a consonant creates a nasal vowel, which ultimately surfaces as [a] or [u].

Brown (1998): the stem ends in -ā-, the glide -j- is inserted in intervocalic positions (in derived environments only)

We: the suffix is -āj-, -j- disappears before consonants

Acknowledgments: The second author gratefully acknowledges the partial support received from *Fédération Typologie et Universaux (CNRS)*.

¹ The form of the inclusive imperative with the singular addressee is identical to the 1st person plural and is widely used. The inclusive imperative with a plural or honorific addressee is much more marginal, but its derivation is fully regular: the suffix -te of the exclusive plural imperative is added. In view of such regularity, we will not discuss it in the future.

² The past tense gerund is only possible with perfective verbs and is going out of use in its old form (from which the active past participle is derived), while simultaneously acquiring a new form (Garde 1998, pp.323-326). We will not be discussing it here, nor the active past participle, originally derived from it.

³ A form preceded by a hyphen means that a perfectivizing prefix is required to create this form with this root.

Question: Why are 1sg and 3pl in Table 2 not palatalized?

Answer: Because the vowel deletion rule precedes the palatalization rule:

- (2) a. nes-ě-t →_{VDel} nes-ě-t →_{PAL} nes'-et →_Ē nes'-ot
 b. nes-ě-u →_{VDel} nes-u →_{PAL} nes-u

We can now easily deal with the stems ending in *-nu-* (the unproductive inchoative type and the productive semelfactive one).

Semelfactive verb stems end in *-nu-* (dialectal allomorph *-anu-*), where *-u-* may be part of the aspectual suffix (in which case the thematic suffix is null) or a thematic suffix conditioned by *-n-*. Whatever analysis we choose may be extended to the unproductive inchoative *-nu-* (about 40 verbs), which has a different stress pattern and different behavior in the past tense.

Table 3: surface forms, first conjugation, semelfactive *-nu-*: *doxnUt* 'to exhale'

| | | singular-M(F/N) | plural |
|-------------------|--------------|----------------------------------|------------|
| present | 1 | doxn-U | doxn'-Om |
| | 2 | doxn'-Oš | doxn'-Ote |
| | 3 | doxn'-Ot | doxn-Ut |
| past | | doxnU-l(a/o) | doxnU-l-i |
| imperative | exclusive | doxn'-I | doxn'-I-te |
| gerund | past | doxnU-v | |
| participle | passive past | -doxnu-t-aja | |
| | active past | doxnU-vš-aja | |
| root | | dox- (cf. <i>vzdox</i> 'a sigh') | |

NB: There are also 4 imperfective and some non-semelfactive verbs with the same behavior (Garde 1998:368)

Table 4: surface forms, first conjugation, inchoative *-nu-*: *doxnut* 'to croak'

| | | singular-M(F/N) | plural |
|-------------------|----------------|------------------------------|-----------|
| present | 1 | doxn'-u | doxn'-em |
| | 2 | doxn'-eš | doxn'-ete |
| | 3 | doxn'-et | doxn'-ut |
| past | | dox-l(a/o) | dox-l-i |
| imperative | exclusive | doxn-i | doxn-i-te |
| gerund | past | -doxnu-v | |
| | active past | -dox-š-aja | |
| | active present | doxn-ušč-aja | |
| root | | dox- (cf. the previous case) | |

The suffix *-nu-* disappears in the past finite and non-finite forms (before a consonant): optionally for some verbs, obligatorily for others and never for the rest. With two verbs *-nu-* may disappear in the infinitive (Garde 1998:369).

3. GLIDE DELETION

Some verbal stems take the *-āj-* thematic suffix. If the thematic suffix in Table 1 is *-āj-*, there is no problem: the past tense marker *-l-* triggers the deletion of *-j-* before it.

(ii)

$\begin{matrix} x \\ \neq \\ j \end{matrix}$ $\begin{matrix} x \\ | \\ C \end{matrix}$

GLIDE DELETION

What about present tense, the gerund, the imperative and the present active participle?

Table 1a: present, underlying forms, first conjugation, regular: *čítat* ‘to read’

| | | singular-M(F/N) | plural |
|----------------|---|-----------------|--------------|
| present | 1 | čít-Aj-ě-u | čít-Aj-ě-mř |
| | 2 | čít-Aj-ě-šř | čít-Aj-ě-te |
| | 3 | čít-Aj-ě-tř | čít-Aj-ě-utř |

A vowel is deleted before a vowel, so the tense suffix will only be detectable before suffixes that begin with a consonant.

Table 1b: present, final forms, first conjugation, regular: *čítat* ‘to read’

| | | singular-M(F/N) | plural |
|----------------|---|-----------------|-------------|
| present | 1 | čít-Aj-u | čít-Aj-e-m |
| | 2 | čít-Aj-e-š | čít-Aj-e-te |
| | 3 | čít-Aj-e-t | čít-Aj-ut |

Independent evidence for glide-deletion: stems ending in glides with a null thematic suffix. The glide disappears in exactly the right cells of the paradigm (Zaliznjak’s classes 11, 12 and 16):

- 11: stems in -ĭj- surfacing as -i- (before consonants) or -j- (before vowels): *bit* ‘to beat’, *vit* ‘to weave’, *lit* ‘to pour’, *pit* ‘to drink’, *šit* ‘to sew’
- 12: stems in -ej- (productive): *gret* ‘to heat’, *smet* ‘to dare’, *umet* ‘to know how’ ..., in -uj-: *obut* ‘to shoe’, *dut* ‘to blow’; in -ij-: *počit* ‘to decrease’, *gnit* ‘to rot’; in -ĭj- alternating with -oj-: *vit* ‘to howl’, *mĭt* ‘to wash’, *nĭt* ‘to complain’, *rĭt* ‘to dig’, *krĭt* ‘to cover’; in -ij- alternating with -ej-: *brit* ‘to shave’; in -ej- alternating with -oj-: *pet* ‘to sing’;
- 16: stems in -w- surfacing only before vowels: *žit* /*žiw-t’*/ ‘to live’, *plĭt* /*plĭw-t’*/ ‘to swim’, and *slĭt* /*slĭw-t’*/ ‘to be known as’

Table 5: surface forms, first conjugation, zero theme: *plĭt* ‘to swim’

| | | singular-M(F/N) | plural |
|-------------------|-----------------------|---|------------|
| present | 1 | plĭv-U | plĭv’-Om |
| | 2 | plĭv’-Oš | plĭv’-Ote |
| | 3 | plĭv’-Ot | plĭv-Ut |
| past | | plĭl-(A/o) | plĭ-l-i |
| imperative | exclusive | plĭv’-I | plĭv’-I-te |
| gerund | | plĭv’-A | |
| participle | passive past | -plĭ-t-aja | |
| | active past | plĭ-vš-aja | |
| | active present | plĭv-Ušč-aja | |
| root | | plĭv- (cf. <i>plĭv-un</i> ‘quick ground’) | |

The root ending in what is underlyingly a glide (the w → v change is independently motivated by history and by the behavior of [v] in consonant clusters) loses this glide before a consonant.

A similar example can be given for stems ending in [j]. The form of the glide is *not* determined by the rest of the stem ([j] allowed with all stem vowels except [o] (with some idiosyncrasies), [w] appears in three verbs in this conjugation subclass, which happen to have a high vowel in the stem)

Table 6: surface forms, first conjugation, zero theme: *gnit'* ‘to rot’ (unaccusative)

| | | singular-M(F/N) | plural |
|----------------|----------------|-------------------------------|----------|
| present | 1 | gnij-U | gnij-Om |
| | 2 | gnij-Oš | gnij-Ote |
| | 3 | gnij-Ot | gnij-Ut |
| past | | gnil-(A/o) | gni-l-i |
| gerund | | gnij-A | |
| | active past | gni-vš-aja | |
| | active present | gnij-Ušč-aja | |
| root | | gnij- (cf. <i>gnoj</i> ‘pus’) | |

These verbs cannot be explained by a glide-insertion hypothesis: which glide to insert?

Additional evidence: the choice of the participial suffix: -t- (vs. -n- or -ěn-) is used with (a) stems ending in sonorants and (b) stems ending in a [+round] vowel (cf. Garde 1998).

Further independent support for glide-deletion: adjectival declension (Halle and Matushansky 2003): the -j- of the long-form affix -oj- disappears before a consonant.

Possible objection: perhaps it’s glide-insertion before a vowel!

Independent evidence for -j-insertion: deverbal nouns in -ie (*reš-en-i-e* [rešEnije]), where -e is the Case ending, and proper names like *Maria* [Mari-a]). The simplest solution for these cases does seem to be -j-insertion rather than a stem glide. But here -j- appears word-finally, where no audible vowel is present.

Counter-objection: The glide-deletion proposal explains more facts (below), and vowel clusters are resolved by deletion elsewhere. We therefore assume a stem glide.

There’s nothing special to say about the other productive thematic suffix on the 1st conjugation, -ej-.

Table 7: surface forms, first conjugation, regular (-ej-): *bolet'* ‘to read’

| | | singular-M(F/N) | plural |
|-------------------|----------------|---------------------------------|-----------|
| present | 1 | bolEj-u | bolEj-em |
| | 2 | bolEj-eš | bolEj-ete |
| | 3 | bolEj-et | bolEj-ut |
| past | | bolE-l(e/o) | bolE-l-i |
| imperative | exclusive | bolEj | bolEj-te |
| gerund | present | bolEj-a | |
| | past | -bolE-v | |
| | active past | bolE-vš-aja | |
| | active present | bolEj-ušč-aja | |
| root | | bol- (cf. <i>bol'</i> ‘a pain’) | |

I (O) believe most if not all verbs of this class are intransitive and possibly unaccusative.

4. 2ND CONJUGATION

2nd conjugation verbs have thematic suffixes -ē- (ca. 60 verbs) and -ī- (productive). The present tense suffix is -ī-:

Table 8: surface forms, second conjugation, regular: *l'ubit'* 'to love'

| | | singular-M(F/N) | plural |
|-------------------|------------------------|---------------------------------|-----------|
| present | 1 | l'ubl'-U | l'ub-im |
| | 2 | l'ub-iš | l'ub-ite |
| | 3 | l'ub-it | l'ub'-at |
| past | | l'ubi-l(a/o) | l'ubi-l-i |
| imperative | exclusive | lub'-I | l'ub-I-te |
| gerund | present | l'ub'-A | |
| participle | passive past | -l'ubl'-enn-aja | |
| | passive present | l'ubi-m-aja | |
| | active past | l'ubi-vš-aja | |
| | active present | l'ub'-ašč-aja | |
| root | | lub- (cf. <i>l'ubov</i> 'love') | |

The derivation of surface forms is nearly transparent:

- (3) a. l'ub-ī-ī-t →_{VDel} l'ub-ī-t →_{PAL} l'ub'-it
 b. l'ub-ī-l-a →_{PAL} l'ub'ila

NB: We will not discuss the source of the 1sg and 3pl endings or the difference between the two conjugations in 3pl. Historically, both are derived from an underlying nasal.

1sg and passive past participle are unexpected – whence the transitive softening (Brown's *iotated grade*)?

Halle (1963), Lightner (1972): transitive softening is a mutation of the sequence Cj (see Brown, p. 204, for the list of mutations).

Then where does the glide come from?

4.1. Glide-formation

Jakobson's observation that a vowel never surfaces before another vowel gives rise to another rule, when a short vowel is preceded by a long vowel (Halle 1963, Lightner 1972):⁴

- (iii) $\begin{array}{c} V \\ / \quad \backslash \\ X \quad X \end{array} \rightarrow j / _ \begin{array}{c} V \\ | \\ X \end{array}$ LONG-VOWEL CLUSTER RESOLUTION

- (4) a. l'ub-ī-ī-u →_{VDel} l'ub-ī-u →_{LGV} l'ub-j-u →_{Cj} l'ubl'u
 b. l'ub-ī-ěnn-aja →_{LGV} l'ub-j-ěnn-aja →_{Cj} l'ubl'ennaja

NB: Alternative proposal (Coats and Lightner 1975): the tense suffix of the 2nd conjugation is Ø. Would not work for the passive past participle.

⁴ A necessary assumption for this is that the 1sg suffix -u is short here (while elsewhere it seems to behave as a long vowel, as is to be expected from its origin from a vowel-nasal sequence). We leave this problem unresolved here.

4.2. Vowel length

(Starting at least from) Halle (1963), Lightner (1972):

Table 9: Russian vowel system

| | | [-back] | | [+back] | |
|-------|-------|----------|--|----------|----------|
| | | [-round] | | [-round] | [+round] |
| short | [+hi] | [i̯] | | [i̯] | |
| | [-hi] | [ɛ̯] | | [ɔ̯] | |
| long | [+hi] | [i] | | [i] | [u] |
| | [-hi] | [e] | | [a] | |

Since on the surface Russian vowels are not distinguished by length, we need to postulate a low-level **neutralization rule**, which applies after all rules involving short vowels:

(iv)  **LENGTH NEUTRALIZATION**

NB: Length effects can be seen mostly with the (productive) process of SECONDARY IMPERFECTIVE LENGTHENING.

5. 1ST CONJUGATION, TRANSITIVE PALATALIZATION

We can now deal with the verbs that take the thematic suffix *-ā-* and the set of effects it triggers.

Table 10: surface forms, first conjugation, regular: *pisat'* 'to write'

| | | singular-M(F/N) | plural |
|-------------------|-----------------|-----------------------------------|----------|
| present | 1 | piš-U | piš-em |
| | 2 | piš-eš | piš-ete |
| | 3 | piš-et | piš-ut |
| past | | pis-Al(a/o) | pis-Al-i |
| imperative | exclusive | piš-I | piš-I-te |
| gerund | | piš-A | |
| participle | passive past | pisa-nn-aja | |
| | passive present | -- | |
| | active past | pisa-vš-aja | |
| | active present | piš-ušč-aja | |
| root | | pis- (cf. <i>pis'mo</i> 'letter') | |

The past and infinitive forms are the same, but the present, gerund and imperative paradigm is different. The difference is predictable (what Brown calls *the iotated grade*).

Garde (1998, p. 62): there are circa 60 verbs in this class.

Brown: a different stem allomorph, more or less transparently related to the primary one
 Explanatory power: zero

An alternative (Halle 1963, Lightner 1972): The thematic suffix is different (*-ā-* instead of *-āj-*), but the rest is due to the already postulated **phonological rules**.

An **excursus**: derivation vs. stem indexing

A derivational theory predicts **non-trivial relations** between allomorphs:

- Allomorphs are **related by phonological rules**
- The choice of an allomorph **depends on the environment**
- **Exceptions are phonological** in nature: a phonological rule fails to apply or applies exceptionally

Stem-indexing assimilates allomorphy to **suppletion**.

With *pis-a-* ‘write’, an environment for the LONG-VOWEL CLUSTER RESOLUTION rule (iii) arises on the juncture of the thematic suffix and the tense one:

Table 10a: present, underlying forms, first conjugation, regular: *pisAt*’ ‘to write’

| | | singular-M(F/N) | plural |
|----------------|---|-----------------|-------------|
| present | 1 | pis-ā-ě-U | pis-ā-ě-mř |
| | 2 | pis-ā-ě-řř | pis-ā-ě-te |
| | 3 | pis-ā-ě-tř | pis-ā-ě-utř |

The rule (iii) applies to the theme-tense sequence, yielding the sequence glide-vowel preceded by a consonant:

Table 10b: present, intermediate forms, first conjugation, regular: *pisAt*’ ‘to write’

| | | singular-M(F/N) | plural |
|----------------|---|-----------------|------------|
| present | 1 | pisj-ě-U | pisj-ě-mř |
| | 2 | pisj-ě-řř | pisj-ě-te |
| | 3 | pisj-ě-tř | pisj-ě-utř |

The sequence glide-vowel preceded by a consonant is the context for the transitive palatalization effect (the *iotated grade*):

Table 10c: present, intermediate forms, first conjugation, regular: *pisAt*’ ‘to write’

| | | singular-M(F/N) | plural |
|----------------|---|-----------------|-----------|
| present | 1 | piř-ě-U | piř-ě-mř |
| | 2 | piř-ě-řř | piř-ě-te |
| | 3 | piř-ě-tř | piř-ě-utř |

NB: Obviously, with such rules we cannot have -j-insertion between vowels.

Table 10d: present, final forms, first conjugation, regular: *pisAt*’ ‘to write’

| | | singular-M(F/N) | plural |
|----------------|---|-----------------|----------|
| present | 1 | piř-U | piř-e-m |
| | 2 | piř-e-ř | piř-e-te |
| | 3 | piř-e-t | piř-ut |

Coats and Lightner (1975): The thematic suffix is -aj-, but it undergoes a minor rule of VOWEL-DROP (also used for the derivation of comparatives in -e (as opposed to the productive -eje). To be brutally honest, this solution doesn’t seem to be any more phonotactically motivated than the previous one.

6. 2ND CONJUGATION (CNTD.)

The thematic suffix *-ē-* is unproductive, but by no means infrequent (about 60 stems according to Garde 1998:371):

Table 11: surface forms, second conjugation, regular: *obidet* ‘to offend’

| | | singular-M(F/N) | plural |
|-------------------|--------------|------------------------------------|-----------|
| present | 1 | obīž-u | obid-im |
| | 2 | obīd-iš | obid-ite |
| | 3 | obīd-it | obid'-at |
| past | | obīde-l(a/o) | obide-l-i |
| imperative | exclusive | obīd' | obid-i-te |
| gerund | past | ob'īd-e-v | |
| participle | passive past | ob'īž-enn-aja | |
| | active past | ob'īde-vš-aja | |
| root | | obid- (cf. <i>obida</i> ‘offense’) | |

The *-ē-* verbs of the 2nd conjugation are subject to another phonological effect: after sibilants and [j] the thematic suffix changes to *-a-* (this is also how we know it is a long vowel), irrespective of where the stress is.

Table 12: surface forms, second conjugation, theme *-ē-*: *dīšat* ‘to breathe’

| | | singular-M(F/N) | plural |
|-------------------|-----------------|---------------------------------------|----------|
| present | 1 | dīš-U | dīš-im |
| | 2 | dīš-iš | dīš-ite |
| | 3 | dīš-it | dīš-at |
| past | | dīšA-l(a/o) | dīšA-l-i |
| imperative | exclusive | dīš-I | dīš-I-te |
| gerund | present | dīš-A | |
| | past | -dīš-AV | |
| participle | passive past | -- | |
| | passive present | -- | |
| | active past | dīšA-vš-aja | |
| | active present | dīš-ašč-aja | |
| root | | dīx- (cf. <i>dīxanie</i> ‘breathing’) | |

We need to assume that [ē] changes to [ā] after a (velar-derived) palatal.

Another excursus: morphologically conditioned phonological rules

The special effects we have discussed (*-nu-*deletion, *ē-*to-*ā* change) and those we have not (*-ova-*to-*-uj-* change, present tense lowering, dental and *-l* deletion in the past tense, etc.) are specific to the verbal domain. Does this mean they should be not regarded as phonological?

We would want to believe that a morphologically conditioned rule is still part of derivation, since it represents a generalization (as opposed to simple suppletion). In some cases, the fact that a rule only applies to verbs is accidental (the relevant environment doesn't arise elsewhere). In others, it is simply irrelevant. Which brings us to the question of **exceptions**.

7. EXCEPTIONS

Yes, some verbs do not undergo some of the rules. For example, a class of verbs doesn't undergo the LONG-VOWEL CLUSTER RESOLUTION rule (iii).

Garde (1998, p. 62): there are 15 verbs in this class. No apparent phonological generalization.

Table 13: surface forms, first conjugation, theme -a-: *sosAt* 'to suck'

| | | singular-M(F/N) | plural |
|-------------------|-----------------|---|-----------|
| present | 1 | sos-U | sos'-Om |
| | 2 | sos'-Oš | sos'-Ote |
| | 3 | sos'-Ot | sos-Ut |
| past | | sosAl-(a/o) | sosA-l-i |
| imperative | exclusive | sos'-I | sos'-I-te |
| gerund | | sos'-A | |
| participle | passive past | --, with a perfectivizing prefix: vt-sos-a-nn-aja | |
| | passive present | -- | |
| | active past | sosA-vš-aja | |
| | active present | sos-Ušč-aja | |
| root | | sos- (cf. <i>sos-ka</i> 'pacifier') | |

If the LONG-VOWEL CLUSTER RESOLUTION rule (iii) fails to apply to this class, the thematic suffix -a- is removed by the SHORT-VOWEL CLUSTER RESOLUTION rule (i) (which would need to follow (iii) and to be modified to become more general).

Coats and Lightner (1975): this class has one thematic suffix in the infinitive, finite past and past participle and another elsewhere. In the 2nd conjugation, there are two verbs that show the same behavior in that they have -a- in the infinitive, finite past and past participle forms, but follow the 2nd conjugation pattern otherwise (*gnat* 'to chase' and *spat* 'to sleep').

The fact that there are many exceptions to a phonological rule does not undermine the reality of the rule, even if there are only a few cases where the rule applies (lots of exceptions). The claim implicit in the alternative is that these exceptions could exhibit any phonology whatever, whereas in the story proposed here exceptions to a rule are just that; i.e., instances where only the rule in question does not apply.

8. CONCLUSION

It would seem that phonology can take care of Russian conjugation, for the most part. We still need lists of stems that some rules do not apply to and stems that some rules solely apply to, but we appear to be a lot more parsimonious about it and, moreover, make predictions about what our exceptions look like.

9. APPENDICES: SOME SPECIAL CASES

-va- deletion: occurs with every -va- that is not part of the imperfective suffix (Jakobson). -w- can be part of the stem: *dav-a-t'/da-j-u* 'give-Inf/1sg', or part of another suffix (e.g. *skan-ir-ov-a-t'/skan-ir-uj-u* 'scan-Inf/1sg'). If the vowel preceding the suffix is [o], it becomes [u], if it is [a], it remains unchanged (for discussion see Garde 1998:358, see also p. 359 for the 7 verbs with the -uj-/-ova- sequence in the stem and subject to the same effect)

Both deletion processes are completely across-the-board – in the verbal domain.

10.2. Present tense lowering

Some Russian verbs appear to undergo an ablaut in their present tense forms:

Table 14: surface forms, first conjugation, irregular: *brit* ‘to shave’

| | | singular-M(F/N) | plural |
|--------------------|-----------------|---|----------|
| present | 1 | brEj-u | brEj-em |
| | 2 | brEj-eš | brEj-ete |
| | 3 | brEj-et | brEj-ut |
| past | | brI-l(a/o) | brI-l-i |
| imperative | exclusive | brEj | |
| gerund | present | brEj-a | |
| | past | -brI-v | |
| participle | passive past | bri-t-aja | |
| | passive present | brEj-em-aja | |
| | active past | brI-vš-aja | |
| | active present | brEj-ušč-aja | |
| verbal stem | | brij- (cf. <i>bradobrej</i> ‘barber, lit., beard-shaver’) | |

What is going on?

- (1) **Present tense lowering:** the stem vowel is lowered (see Table 9). This affects stem yers – they surface where not expected.

Table 9: Russian vowel system

| | | [-back] | | [+back] | |
|--------------|-------|----------|--|----------|----------|
| | | [-round] | | [-round] | [+round] |
| short | [+hi] | [ɨ] | | [ɨ] | |
| | [-hi] | [ɛ̃] | | | [ɔ̃] |
| long | [+hi] | [i] | | [ɪ] | [u] |
| | [-hi] | [e] | | [a] | |

NB: The only vowel that cannot be affected is [u].

Result: In the present tense, the stem becomes *brej-*.

- (2) In the past finite, gerund and participial forms, as well as in the infinitive, etc., the final [j] is deleted due to the GLIDE DELETION rule (ii).

In the same class are the verbs *brat* ‘to take’ (stem /bɨr-/), *zvat* ‘to know’ (stem /zɨv-/) and *drat* ‘to tear apart’ (stem /dɨr-/). With these verbs, the yer of the stem surfaces (/ɨ/ → [ɛ̃], /ɨ/ → [ɔ̃]) in the present finite and infinitival forms, as well as with the imperative.

NB: The present finite and infinitival forms, as well as the imperative are **the forms where the suffix begins with a vowel**. This cannot be accidental.

We do not expect to find -ij- alternating with -øj- (should have been -aj-): *vit* ‘to howl’, *mit* ‘to wash’, *nit* ‘to complain’, *rit* ‘to dig’, *krīt* ‘to cover’, or -ej- alternating with -øj- (predictions unclear): *pet* ‘to sing’.

Table 15: surface forms, second conjugation, irregular: *gnat* ‘to chase’

| | | singular-M(F/N) | plural |
|--------------------|-----------------|-----------------|----------|
| present | 1 | gonʹ-U | gOnʹ-im |
| | 2 | gonʹ-iš | gOnʹ-ite |
| | 3 | gonʹ-it | gOnʹ--at |
| past | | gnA-l(a/o) | gnA-l-i |
| imperative | exclusive | gonʹ-I | |
| gerund | present | gonʹ-A | |
| | past | -gnA-v | |
| participle | passive past | -gna-nn-aja | |
| | passive present | gonʹ-im-aja | |
| | active past | gnA-vš-aja | |
| | active present | gOn-ušč-aja | |
| verbal stem | | gñn- | |

Unexpectedly, the verb is 2nd conjugation, despite the thematic suffix *-a-* in the infinitive.

11. A LESS GENERAL CASE: VN CLUSTER

Some of the contemporary *-a-* and *-u-* originated as vowel-nasal sequences before a consonant (*mʹata* ‘mint’, *pʹat* ‘five’, etc.). There are two morphological environments where the process appears to be synchronically active: Nom.sg of 10 3rd declension neuter nouns (see Halle 1994) and stem alternations of maybe 6 verbs.

NB: This is also the process that derived the active past participle suffix (cf. Latin *-V-ns*) and the 1sg and 3pl endings (cf. Latin *-V-m* and *-V-nt*, respectively). The original 1sg ending *-m* is still attested in the two verbs that have zero present tense marking: *ed-* ‘eat’ (1sg *em*, infinitive *est*) and *dad-* (1sg *dam*, infinitive *dat*).

Table 16: surface forms, first conjugation, vowel-nasal roots: *mʹAt* ‘to rumple’

| | | singular-M(F/N) | plural |
|-------------------|-----------------|--|----------|
| present | 1 | mnʹ-U | mnʹ-Om |
| | 2 | mnʹ-Oš | mnʹ-Ote |
| | 3 | mnʹ-Ot | mnʹ-Ut |
| past | | mʹAl-(a/o) | mʹA-l-i |
| imperative | exclusive | mnʹ-I | mnʹ-I-te |
| gerund | | mʹA-v | |
| participle | passive past | -- | |
| | passive present | -- | |
| | active past | mʹA-vš-aja | |
| | active present | mnʹ-Ušč-aja | |
| root | | mñn- (cf. <i>razminat</i> ‘to spread out by pressure’) | |

That the root is *mñn-* can be ascertained from **yer-lowering** in the prefix in 1sg of the perfective form *razomnu* and the **secondary imperfective** *razminat*, where the stem vowel is lengthened. Before a consonant, the VN sequence is converted into a vowel:

- (vii) $V_{[-back]} C_{[nasal]} \rightarrow a$
 $V_{[+back]} C_{[nasal]} \rightarrow u$

VN-RESOLUTION

Other verbs that undergo this process are: *pīn-* ‘kick’, *žīm-* ‘press’, *žīn-* ‘harvest’, *čīn-* ‘start’ and their derivatives, as well as the synchronically unanalyzable derivatives of the archaic verb *jīm-* ‘have’ (with some further variations).

There also are 4 nasal-ending stems that are not subject to (vii): *dēn-* ‘get rid’, *stān-* ‘become’, *za-str’ān-* ‘get stuck’ and *kl’ān-* ‘curse’ – perhaps because (vii) applies only to a short vowel-nasal sequence. Or they may be *-nu-* verbs that lose *-nu-* in the infinitive obligatorily, as opposed to the two verbs that do so optionally: *dostignut’* vs. *dostič’* ‘to achieve’ and *st#nut’* vs. *st#t’* ‘to be cold’ (Garde 1998:369).

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