How defective are Russian defective verbs?

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Presentation outline

- Paradigm defectivity
- Defectivity in Russian
- Accounts for defectivity

Research
- Research Questions
- Hypotheses
- Results
- Discussion
Paradigm defectivity

- Paradigm defectivity: the absence of certain forms in certain inflectional paradigms
- Expected but “missing” forms in inflectional paradigms → paradigm gaps
- Puzzling because of productivity of inflection
- Found in many typologically different languages (e.g., Russian, Ukrainian, Spanish, Hungarian, French, Turkish, Norwegian, etc.)
Defectivity in Russian

- The most cited example is the verb *pobedit’* ‘to win’, the 1sg. non-past of which is systematically replaced by a paraphrase *oderžu pobedu* ‘I will obtain the victory’
  
  1sg. – 1pl. *pobed-im*  
  2sg. *pobed-ish* 2pl. *pobed-ite*  
  3sg. *pobed-it* 3pl. *pobed’-at*

- Almost all 1sg. non-past gaps in Russian:
  - appear in 2nd conjugation verbs
  - verb stems end in a dental consonant which normally undergoes a morphophonological alternation: /t/ - /tʃ/; /d/ - /ʒ/; /s/ - /ʃ/; /z/ - /ʒ/
Main approaches proposed in order to account for Russian defective verbs (Sims 2017):

1. Analogical learning argument (Daland et al. 2007, Sims 2017)
2. Lexical conservatism argument (Pertsova 2016)
Main approaches

**Analogy**
- Alternations in the 1 sg. non-past are automatic
- Defective verbs are lexicalized
- Paradigm gaps could be spread by analogy to new verbs: defectiveness is treated as “a weakly productive morphological pattern”. (Sims 2017:502)

**Lexical conservatism**
- Non-alternation in the past participle, or in other inflectionally and derivationally related forms, statistically predicts a gap in the 1sg.
- Pertsova (2016) argues that speakers are unwilling to introduce new stem allomorphs

**Grammar uncertainty**
- Low rule reliability
- Information on generalization is too fragmented
- Paradigm gaps “emerge when speakers must synthesize a form, but are uncertain of the outcome”. (Albright 2003:12)
Productivity of alternation rules

Morphonological alternations are automatic and exceptionless in standard Russian.
(Baerman 2008, Daland et al. 2007)

Morphonological alternations are not automatic. There are exceptions.
(e.g., Albright 2009, Baronian & Kulinich 2012, Yang 2016)
Productivity: Yang’s Tolerance Principle

- Yang (2016): Defectivity in Russian verbs can be explained by the Tolerance principle

- **Tolerance principle**: If $R$ is a productive rule applicable to $N$ candidates, then the following relation holds between $N$ and $e$, the number of exceptions that could but do not follow $R$:

  $$e \leq \theta_N$$

  where

  $$\theta_N := \frac{N}{\ln N}$$

- The number of exceptions mustn’t exceed a critical number, the threshold of productivity ($= \theta_N$)

- “The Tolerance principle asserts that for a rule to be productive, the number of exceptions must fall below a critical threshold” (Yang 2016:9)
The Tolerance principle and defective verbs

- The Tolerance principle was applied by Yang to a group of Russian verbs with stem-final t roots
- The consonant alternation rule $[t] > [tʃ]$ cannot reliably apply in t-stems because there are too many exceptions (e.g. the Old Church Slavonic alternation /t/-/ʃtʃ/ as in vozvrat-it’ ‘to return’ – vozvrašču 1sg. non-past)
  - For 66 roots there are 22 exceptions while the productivity threshold is 16 ($\theta_{66} = 16$)
  - The number of exceptions exceeds the critical number 16
  - The $[t]$-[tʃ] alternation is considered unproductive
  - Paradigm gaps arise in the context of unproductive generalization
The Tolerance principle: problems

- **Problem 1:** Among verbs with $t$ stem there are no defective ones (except for the only verb šerstit’ ‘irritate the skin’)
- **Problem 2:** The number of exceptions for stems with other final dental consonants ($d$, $s$ or $z$) does not seem to exceed the productivity threshold
Productivity threshold

Frequency of roots and exceptions along with the threshold of productivity for t, d, s, and z stems (based on Zalizniak’s Grammatical Dictionary, 2003)

<table>
<thead>
<tr>
<th></th>
<th>t</th>
<th>d</th>
<th>s</th>
<th>z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total N of roots</td>
<td>119</td>
<td>88</td>
<td>46</td>
<td>50</td>
</tr>
<tr>
<td>Exceptions (e)</td>
<td>52 *</td>
<td>15</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Threshold ($\theta_N$)</td>
<td>25</td>
<td>20</td>
<td>12</td>
<td>13</td>
</tr>
</tbody>
</table>

*The majority of exceptions for t stems refers to an unambiguous /st/-/ʃtʃ/ alternation in verbs with st stems (-33 st)

- See Pertsova 2016 for similar results
- For *d*- stems Žd (borrowed from Old Slavonic and remaining in some other than the 1 sg. non-past forms) is a grammatical competitor and must be taken into account
- Žd is also found in some non standard varieties of Russian
- Thus, the /d/ - /3d/ alternation is synchronically active and competes with the standard /d/ - /3/ alternation (as well as /t/-/ťʃ/ competes with /t/-/ťʃ/ in *t* stem verbs)
- Both *t*- and *d*- stems lack productive default alternation rule because of active competing rules
Research questions

Are consonant alternations in the 1 sg. non-past of 2nd conjugation Russian verbs unproductive as predicted by the Tolerance principle?

Is the alternation rule (un)productivity the only factor that contributes to paradigm defectivity in Russian or could some other factors be at play?

Are Russian defective verbs always defective (e.g., verb pobedit’)?
Hypotheses

(Un)productivity of consonant alternations is not the only factor for Russian verbs defectivity.

Defectivity might be overcome more often than expected based on traditional grammars.

This will be especially apparent in non standard varieties of Russian, i.e. dialects or web texts where written language is closer to the oral register.
Forms of the 1 sg. non-past without alternation are widely attested in a variety of Russian dialects for stems with all final dental consonants: $t$, $d$, $s$, $z$

<table>
<thead>
<tr>
<th>t</th>
<th>d</th>
<th>s</th>
<th>z</th>
</tr>
</thead>
<tbody>
<tr>
<td>kolot’u ‘I am battering’</td>
<td>hod’u ‘I am walking’</td>
<td>bros’u ‘I will throw’</td>
<td>moroz’u ‘I am putting in cold.’</td>
</tr>
<tr>
<td>svist’u ‘I am whistling’</td>
<td>glad’u ‘I am ironing’</td>
<td>pros’u ‘I am asking’</td>
<td>skol’z’u ‘I am sliding’</td>
</tr>
<tr>
<td>let’u ‘I am flying’</td>
<td>p obed’u ‘I will win’</td>
<td>bes’us’ ‘I am mad’</td>
<td>voz’u ‘I am carrying’</td>
</tr>
</tbody>
</table>

**Two situations:**

1. Forms without alternation are sporadic (e.g., in some northern Russian dialects)
2. Forms without alternation are frequent (e.g., in some southern Russian dialects)

Crucially, both forms, with and without alternation, coexist in the same grammatical system.

We don’t know, however, whether speakers have difficulties producing the 1 sg. non-past form of such verbs.
Russian dialects vs. standard Russian

- The situation observed in dialects is not acceptable in standard Russian
- Forms without alternation are not only unacceptable but they are categorically rejected
  - **Obnorskij (1953):** Forms with standard alternations must be the only acceptable ones («должны признаваться единой формой для всей подходящей группы глаголов», p.113)
  - All forms without alternation such as *dud’u, skol’z’u,* etc. must be considered as artificial («...считать искусственными, нормальными же признавать от всей группы подходящих глаголов формы на ж, ш», p.114)
Spontaneous production

- Internet data (quasi spontaneous):
  - Google search for the 1 sg. non past of the defective verb *pobedit* ‘to win’
    - *pobed’u*: 292,000 results
    - *pobežu*: 64,300 results

- Cf. in the National Corpus of Russian:
  - *pobed’u* - 1 occurrence
  - *pobežu* - 3 occurrences
  - *pobeždu* – 6 occurrences
New verbs

Results of Google search for the 1 sg. non-past of some new verbs, borrowings from English, with *d*-stems.

<table>
<thead>
<tr>
<th>Verbs</th>
<th>d</th>
<th>ž</th>
<th>žd</th>
<th>d-ž</th>
<th>dž</th>
</tr>
</thead>
<tbody>
<tr>
<td>frendit’ ‘to befriend'</td>
<td>4 690</td>
<td>119 000</td>
<td>3</td>
<td>1 060</td>
<td>2520</td>
</tr>
<tr>
<td>zafrendit’ ‘to become friends'</td>
<td>6 480</td>
<td>16 300</td>
<td>0</td>
<td>345</td>
<td>649</td>
</tr>
<tr>
<td>fludit’ ‘to flood'</td>
<td>33 200</td>
<td>97 500</td>
<td>7</td>
<td>9 390</td>
<td>328</td>
</tr>
<tr>
<td>apgrejdit’ ‘to upgrade'</td>
<td>3860</td>
<td>525 000</td>
<td>0</td>
<td>336</td>
<td>811</td>
</tr>
</tbody>
</table>

- The alternation /d/ - /ʒ/ seems to be productive in new verbs
Attested defective verbs

Results of Google search for the 1sg. non-past form of some traditionally defective verbs with the root –bed’

<table>
<thead>
<tr>
<th>Verbs</th>
<th>d</th>
<th>ž</th>
<th>žd</th>
<th>d-ž</th>
<th>Frequency*</th>
</tr>
</thead>
<tbody>
<tr>
<td>pobedit’ 'to win'</td>
<td>353 000</td>
<td>60 800</td>
<td>65 400</td>
<td>40 000</td>
<td>52.9</td>
</tr>
<tr>
<td>ubedit’ 'to persuade'</td>
<td>11 200</td>
<td>16 600</td>
<td>17 200</td>
<td>2 410</td>
<td>45.2</td>
</tr>
<tr>
<td>ubedit’sa ‘to make sure’</td>
<td>13 500</td>
<td>46 900</td>
<td>5 120</td>
<td>2 140</td>
<td>47.7</td>
</tr>
<tr>
<td>razubedit’ 'to dissuade'</td>
<td>317</td>
<td>2 730</td>
<td>139</td>
<td>368</td>
<td>0.8</td>
</tr>
<tr>
<td>pereubedit’ ‘to convince'</td>
<td>2 000</td>
<td>10 500</td>
<td>590</td>
<td>725</td>
<td>2.4</td>
</tr>
</tbody>
</table>

*Frequency in ipm (items per million) according to Lyashevskaja & Sharov (2009)

- Attested defective verbs are not always defective
At least for some new verbs with $d$ stems /d/ - /ʒ/ alternation applies productively in the 1 sg. non-past

The /d/ - /ʒ/ alternation, however, is not fully productive (e.g., we observe non-alternation or $dž$ instead of standard ź)

As to the Old Slavonic $d$ - źd alternation, źd is almost absent in new verbs with $d$ stems. Thus, this alternation is probably not synchronically active (as suggested by Gorman and Yang 2019) even if we still find it in some verbs (e.g., verbs in – bedit’).

The most important competitor for standard Russian consonant alternations seems to be non-alternation
- The non-alternation option is naturally provided by the grammatical system of Russian: it results from paradigm leveling.

- As it was shown recently (Slioussar and Kholodilova 2013), paradigm leveling is a very active process and could be easily found in less standard varieties of Russian such as web texts, and not only for dental stems, but also for labial (b, p, v, m) and some other stems.

- This is particularly challenging for the Tolerance principle model because it is unclear how to count the number of exceptions.

<table>
<thead>
<tr>
<th>Stems</th>
<th>Rules</th>
<th>Exceptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>t</td>
<td>ṭf</td>
<td>t, ṭf</td>
</tr>
<tr>
<td>d</td>
<td>ə̣</td>
<td>d, ∅</td>
</tr>
<tr>
<td>s</td>
<td>ʃ̣</td>
<td>s, ∅</td>
</tr>
<tr>
<td>z</td>
<td>ʒ̣</td>
<td>z, ∅</td>
</tr>
</tbody>
</table>
Summary

- The important number of exceptions to dental-palatal consonant alternations in the 1 sg. non-past of Russian 2\textsuperscript{nd} conjugation verbs is probably related to the absence of alternation (i.e. non-alternation), but this option is not accepted in standard Russian.

- The coexistence of two rules that are not fully productive (i.e. default) does not necessarily leads to defectivity. In some languages, the situation of free choice between two or more inflexions does not influence speakers’ behaviour.

- In Russian, more crucial for paradigm defectivity is probably the situation when there is an option grammatically available to speakers but prohibited by norms of standard language.
References


References


