Evidence for Stratal Phonology
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23rd October 2018

0.1 Outline

• Stem-level cyclicity in Stratal Phonology
• Stem-level cyclicity and parts of speech: Welsh svarabhakti
• Stem-level cyclicity and phonemic structure: Irish vowel separation
• Converging evidence for stem-level cyclicity: Russian [ɛ] ~ [o] revisited

1 Stratal Phonology and the stem level

1.1 Basic assumptions of Stratal Phonology

• As defined by Bermúdez-Otero, Stratal Phonology
  – respects cyclicity
  – respects stratification
  – builds on parallelist constraint-based theories

1.2 Roots, stems, and words

• Roots are lexical items with no part-of-speech characterization
  – Roots are not cyclic domains
• Stems are lexical items with POS characterization, but not inflectable words
  – Some stems define cyclic domains for stem-level phonological computation
  – Stem-level domains can be recursive
• Words are autonomous lexical items with the full set of inflections
  – Words are cyclic domains for word-level phonological computation
  – Word-level domains are not recursive
• Utterances are cyclic domains for phrase-level phonological computation
  – Phrase-level domains are not recursive

1.3 The lexical syndrome

• In Lexical Phonology and Morphology, ‘lexical’ rules had a number of properties
  – Cyclic reapplication
  – Non-derived environment blocking
  – Categorical application
  – Exceptionality

2 Optimality Theory or Harmonic Grammar are in; OT-CC or Harmonic Serialism are out
1.4 Good evidence for stratification

- Some languages provide good evidence for stem-level constituency
- Lexicon stratification: English, Spanish: morphological constituency

(1) Spanish manos ‘hands’

<table>
<thead>
<tr>
<th>word</th>
<th>stem</th>
<th>inflection</th>
</tr>
</thead>
<tbody>
<tr>
<td>stem vowel</td>
<td>root</td>
<td></td>
</tr>
<tr>
<td>man-</td>
<td>-o-</td>
<td>-s</td>
</tr>
</tbody>
</table>

1.5 Worse evidence for stratification

- Not all languages offer such apparently clear evidence for the distinction between stem and word level
- How do we distinguish between
  - Evidence for process ordering and
  - Evidence for stratification?
- Stratification is a middle ground between
  - Non-morphological process ordering
  - Morpheme-specific domain structure

2 Stems and parts of speech: Welsh svarabhakti

2.1 Welsh svarabhakti

- Apparently well-behaved repair of sonority sequencing violations

(2) Epenthesis in monosyllables

<table>
<thead>
<tr>
<th>(a)</th>
<th>oehr</th>
<th>‘side’</th>
</tr>
</thead>
<tbody>
<tr>
<td>(b)</td>
<td>ochrau</td>
<td>‘sides’</td>
</tr>
</tbody>
</table>

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(3) Deletion in polysyllables
   a. \([\text{pɛ:\text{r}ɪg}]\) \(\text{perygl}\) ‘danger’
   b. \([\text{pɛ:\text{r}a\text{g}l}o\text{n}]\) \(\text{perygl}o\text{n}\) ‘dangers’

2.2 Welsh svarabhakti and the stem level

- It turns out that svarabhakti-related phenomena suffer from the stem-level syndrome\[^{15}\]
- Part-of-speech specificity: √\(\text{llwfr} ‘cowardly’\) in Nantgarw\[^{14}\]

(4) Nouns: transparency
   a. \([\text{tɔ:\text{v}r}\text{ɪn}]\) \(\text{ll}y\text{fr}ɪ\text{n}\) ‘coward’
   b. \([\text{tɔ:\text{v}ro}d]\) \(\text{ll}y\text{fr}ɪ\text{a}ɪ\text{d}\) ‘cowards’

(5) Adjectives and deadjectival derivations: overapplication
   a. \([\text{tɔ\text{v}v}r]\) \(\text{ll}w\text{f}r\) ‘cowardly’
   b. \([\text{tɔ\text{v}v}r\text{dra}]\) \(\text{ll}y\text{fr}\text{dra}\) ‘cowardice’
   c. \([\text{tɔ\text{v}v}\text{rai}]\) \(\text{ll}y\text{fr}b\text{a}ɪ\) ‘to become cowardly’

- Exceptionality

(6)  a. \([\text{bə:rav}]\) \(\text{barf}\) ‘beard’
   b. \([\text{fɪrv}]\) \(\text{ffurf}\) ‘form’
   c. \([\text{so\v{v}o\text{l}}]\) \(\text{sofl}\) ‘stubble’
   d. \([\text{ɡwɛv\text{l}}]\) \(\text{gwefl}\) ‘lip’

- Cyclicity: less in Modern Welsh, but rife in Middle Welsh
  - \(\text{am(\text{y})l}‘\text{plentiful}’\), but \(<\text{amylach}‘\text{more plentiful}\’\)
  - \(\text{kened(\text{y})l}‘\text{nation}’\), but \(<\text{kenedyloed}‘\text{nations}\’\)

2.3 Where is the stem?

- Phonologically, svarabhakti ‘looks like’ a stem-level pattern
- But: morphological evidence for stems is much weaker
  - No obvious stratification
– Little obvious stem-based morphology
• Some verbalizing suffixes\(^1\), but that is about it\(^2\)

2.4 Strata with weak morphological evidence

• Crucially, patterns of cyclic misapplication
  – follow the derivational history
  – never straddle part-of-speech boundaries: no patterns like \([\text{hu}v\text{or}]_{\text{Adj}} \sim [\text{hov}\text{r}]_{\text{Adj}} \text{a\text{1}}]_{\text{V}}
• Predicted by Stratal Phonology from first principles: stem-based storage

3 Stems and overapplication: Irish vowels

3.1 Irish vowel inventory

• Long vowels: at least 5 \([iː uː eː oː ɑː]\)\(^3\)
  • Most consonants can be phonemically ‘non-palatalized’ or ‘palatalized’
  • Long vowels have a free distribution

\(7\) \begin{align*}
a. \text{[kʰʊːn]} & \quad \text{ciúin} \quad \text{‘quiet’} \\
b. \text{[bʰiːn']} & \quad \text{buíon} \quad \text{‘band, company’}
\end{align*}

• Short vowels: more restricted distribution

3.2 Irish short vowels: distribution

• See Ó Maolalaigh\(^4\) for the generalizations
• All examples from Cois Fhairrge\(^5\) unless stated otherwise\(^6\)

\(8\) \begin{align*}
a. \text{[tʰiːtʰiː]} & \quad \text{tuitim} \quad \text{‘I fall’} \\
b. \text{[kʰur]} & \quad \text{cur} \quad \text{‘putting’} \\
c. \text{[dʰiːn']} & \quad \text{duine} \quad \text{‘man’} \\
d. \text{[kʰuði]} \sim \text{[kʰiði]} & \quad \text{cuid} \quad \text{‘share’} \\
e. \text{[fʰis]} & \quad \text{fios} \quad \text{‘knowledge’} \\
f. \text{[tʰuːki]} & \quad \text{tìosfàidh} \quad \text{‘will come’}
\end{align*}
3.3 Irish morphology: slenderization

- Irish morphology makes extensive use of changes in the palatalization of final consonants

(9) a. [bɑːd] bád ‘boat.N.S.G’
    b. [bɑːdʲ] báid ‘boat.G.S.G’

(10) a. [kruːnʲ] coróin ‘crown.N.S.G’
    b. [kruːNəx] corónach ‘crown.G.S.G’

- Since the realization of short vowels depends on the palatalization of surrounding consonants, we expect short vowels to alternate

3.4 Irish short vowels: alternations

(11) a. [filʲ] fuil ‘blood.N.S.G’
    b. [fulə] fola ‘blood.G.S.G’

(12) a. [trɛdʲ] troid ‘fight’
    b. [trʌdə] troda ‘fight.G.S.G’

- But there are many vowel patterns

(13) a. [tɪlʲ] toil ‘will’
    b. [tʌləx] tola ‘will.G.S.G’

3.5 Irish short vowels: analysis

- Three underlying vowels [i a a]
  - Phonemic analysis with allophony
  - Rule-based phonology with ‘separation rules’
  - Non-linear analysis with feature-filling spreading
  - Element Theory analyses
- Hence
  - /fɨl + ʲ/ → /filʲ/ fuil
  - /fɨl + ə/ → /fulə/ fola
- Underlying ‘vertical’ system

3.6 *Irish short vowels: problems*

- The most worked-out rule-based analysis is by Ó Siadhail,\(^{32}\) which is problematic in many ways\(^{33}\)
- Ó Sé:\(^{34}\) complementary distribution cannot be sustained due to exceptions in derived forms
- Ó Maolalaigh:\(^{35}\) in underived forms, the vertical analysis can be sustained but for a few exceptions
  - *mionna* 'oath’, *brionglóid* 'dream’ with [i]

3.7 *Separation rules are stem-level: interaction with morphology*

- Separation rules follow some morphology, notably slenderization
- In some varieties, evidence that they precede other morphology
- Corca Dhuibhne\(^{36-37}\)

\[\begin{align*}
(14) & \quad \text{a. } [\text{ɡi̝ːd}^i] & \quad \text{goid} \quad \text{‘steal.IMP.SG’} \\
& \quad \text{b. } [\text{ɡi̝ːtəɾ}] & \quad \text{goidtear} \quad \text{‘steal.IMPERS.PRES’}
\end{align*}\]

3.8 *Separation rules and opacity*

- Also in Corca Dhuibhne, word-final [x̆] deletion counterbleeds vowel separation

\[\begin{align*}
(15) & \quad \text{a. } [\text{kła̝x}] & \quad \text{cloch} \quad \text{‘stone.NSG’} \\
& \quad \text{b. } [\text{kła̝x̆ə}] & \quad \text{cloiche} \quad \text{‘stone.GSG’} \\
& \quad \text{c. } [\text{kłe}] & \quad \text{cloich} \quad \text{‘stone.DSG’} \\
& \quad \text{d. } *[\text{kłe}] & \quad \text{(14) a. } [\text{ɡi̝ːd}^i] & \quad \text{goid} \quad \text{‘steal.IMP.SG’} \\
& \quad \text{b. } [\text{ɡi̝ːtəɾ}] & \quad \text{goidtear} \quad \text{‘steal.IMPERS.PRES’}
\end{align*}\]

3.9 *Separation rules are stem-level*

- Pre-sonorant lengthening: vowels lengthen/diphthongize before coda ‘fortis’ sonorants\(^{38}\)

\[\begin{align*}
(16) & \quad \text{Case inflection} \\
& \quad \text{a. } [\text{ɡła̝ːN}] & \quad \text{gleann} \quad \text{‘valley.NSG’} \\
& \quad \text{b. } [\text{ɡła̝ːN̥ta}] & \quad \text{gleannta} \quad \text{‘valley.NPL’} \\
& \quad \text{c. } [\text{ɡła̝ːNa}] & \quad \text{gleanna} \quad \text{‘valley.GSG’}
\end{align*}\]

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\(^{32}\) Ó Siadhail, *Modern Irish.*

\(^{33}\) Notably, he advocates a system where dialectal variation is derived by ‘dialect-specific’ rules from underlying forms common to all of Irish (Ó Murchú 1969)


\(^{35}\) Ó Maolalaigh, *The historical short vowel phonology of Gaelic*.

\(^{36}\) This is Munster Irish — a different dialect grouping but one for which the vowel separation facts are comparable to those of Cois Fhairrge


• Backness separation transparently interacts with PSL

(17) a. [tuːN] tonn ‘wave.N S G’
    b. [tiːN] toinn ‘wave.D S G’
    c. [tiNə] toinne ‘wave.G S G’

3.10 More interaction with morphology: diminutives

• The productive diminutive suffix -ín slenderizes the final consonant of the stem

(18) a. [Lʲaur] leabhar ‘book’
    b. [Lʲauriːnʲ] leabhairín ‘book-DIM’

• This often leads to the expected alternations

(19) a. [kruk] cnoc ‘hill’
    b. [krikʲiːnʲ] cnuicín ‘hillock’

(20) a. [sʌp] sop ‘wisp, bundle (of straw)’
    b. [sɛpʲiːnʲ] soipín ‘id.-DIM’

• But crucially, short /a/ behaves differently in inflection-driven slenderization and before -ín

• In inflection, /a/ in a slender context raises to [e] or [i]

(21) a. [lʲæk] leac ‘flagstone’
    b. [lʲıkə] leice ‘flagstone.G S G’

(22) a. [ɡlas] glas ‘lock’
    b. [ɡleʃ] glais ‘lock.G S G’

(23) a. [fʲær] fear ‘man’
    b. [fʲirʲ] fir ‘man.G S G’

• In the diminutive context, we get cyclic misapplication rather than raising
(24) a. [ɡad] gad 'withe. N S G'
    b. [ɡadʲiːnʲ] gaidín 'withe. D I M'

• We even get /a/ in a O O context, which is basically impossible in underived forms39

    b. [bʲænʲiːnʲ] beainín 'woman. D I M'

• However, many lexical items variably apply the ‘inflectional’ separation rules

(26) a. [aLt] alt 'joint. N S G'
    b. [æLtʲiːnʲ] ailtín 'joint. D I M'
    c. [ɛLtʲiːnʲ] 'id.'

3.11 The stratal affiliation of separation rules

• Separation rules can overapply before verbal inflectional suffixes (word-level?)
• Separation rules can overapply before the productive derivational diminutive -ín
• Separation rules interact transparently with Pre-Sonorant Lengthening, which itself is counterbalanced by diminutive slenderization

(27) a. [kaiLʲ] coill 'forest. N S G'
    b. [keLʲə] coille 'forest. G S G'
    c. [kaiLʲiːnʲ] coillín 'forest. G S G'

3.12 Separation are stem-level: semantic evidence

• Variable application of separation rules:
  - [sepʲiːnʲ] soipín is \([\sqrt{\text{sep}} + \text{iːn}]_{SC}\)\text{W.C}
  - [bʲænʲiːnʲ] beainín is \([\sqrt{\text{bein}} + \text{iːn}]_{SC}\)\text{W.C}
• Where De Bhaldraithe40 reports a distinction in meaning between variants, it goes in the predicted direction
  - Stem attachment: cyclic misapplication, compositional meaning
    * scead [ʃkʲæd] ‘small piece’, sceaidín [ʃkʲædʲiːnʲ] ‘diminutive of scead’
  - Root attachment: transparent separation rules, idiomatic meaning

40 De Bhaldraithe, Gaeilge Chois Fhairrge.
3.13 Separation rules show the stem-level syndrome

- Exceptions in underived forms: [mʲiNə] mionna
- Failure to apply in some derived forms: [ærʲimʲ] airm, g s g of [arəm] ‘weapon’
- Overapplication before plausibly word-level suffixes
  - Verbal inflection
  - Productive, compositional diminutive

3.14 But isn’t it inflection?

- It appears that vowel separation rules and Pre-Sonorant Lengthening both belong to the stem level, as they overapply in word-level contexts such as diminutives
- These processes are particularly active in case and number inflection of nouns and adjectives
- Is case and number inflection stem-level?
- I would argue this is quite plausible

3.15 Stem structure in Irish

- In nouns, stem structure is not easily observable morphologically: there are no ‘thematic’ elements or overarching patterns of syncretism
- In verbs, stem structure is more visible: inflection combines a choice of ‘stem’ with a set of person-number suffixes to signal TAM features
  - Nouns
    - Very few patterns are productive: probably a good deal of lexical storage
      - See Acquaviva for a morphosyntactic/semantic argument in favour of decomposing case and number inflections
  - Verbs
    - Recent morphosyntactic work compatible with the idea that Irish verbal stems represent spans of morphosyntactic terminals, just as envisaged in stem-storage theories
      - Overapplication of PSL is at least possible in verbs: cailleann ‘loses’ [kaLʲəN] or [kɑːLʲəN]

3.16 Conclusion

- ‘Vowel separation’ patterns in Irish show all signs of belonging to the stem level

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* roicín [rekʲiːnʲ] ‘cogwheel’
* sceidín [ʃkʲedʲiːnʲ] ‘small load’

---

41 And adjectives
42 There are more local patterns, such as the ‘first declension’ where N S G = G P L and G S G = N P L, but it remains unclear whether any of them can be taken to be the default; see Bennett (2015) for a discussion of defaults in Irish nominal inflection
44 It would be interesting to have a study à la Yang (2016)
47 De Bhaldraithe, *Gaeilge Chois Fhairrge*.
48 This is true irrespective of whether we adopt an underlying ‘vertical’ analysis or stick to a less abstract five-vowel one. See Kiparsky (2018) for some discussion that supports the analysis of vowel separation as a stem-level process.
– Cyclicity
– Exceptionality
– Variable application
• This is despite the direct evidence for internal stem constituency often being somewhere between ‘subtle’ and ‘non-existent’
• No obvious evidence for stratification, either
• Nevertheless, Stratal Phonology makes the right predictions

4 Converging evidence for stem structure: Russian

4.1 The [e]~ [o] alternation

• A classic problem in Russian phonology
• In native vocabulary, surface [e] only follows palatalized consonants and [ʂ ʐ t͡s]
• Before a following non-palatalized consonant, some stressed [e]’s alternate with [o]

\[28\] a. \[sʲelʲ-skʲ-ij\]  сельский  ‘rural’
b. \[sʲol-a\]  сёла  ‘village-NPL’

• In some morphemes, [e] never alternates:

\[29\] a. \[bʲel-ɨj\]  белый  ‘white’
b. \[bʲelʲ-inklʲ-ij\]  беленький  ‘white-dim’

• Yet in others, [o] after a palatalized consonant never alternates

\[30\] a. \[tʲotʲ-a\]  тётя  ‘aunt’
b. \[tʲot-uʂk-a\]  тётушка  ‘aunt-dim’

4.2 The historical background and nature of the pattern

• Non-alternating [e] goes back to Old Russian *ě (written <ѣ>)
• Alternating [e] goes back to Old Russian *e (written <е>)
• Old Russian *e, but not *ě, > o / Cʲ_C
• Later, [o] spread to a number of items where it is not motivated historically
• Lightner: underlying /ě/ and /e/, a backing rule, plus extra machinery to explain overapplication

\[51\] And the yer [ь]

\[52\] Lightner, ‘On the alternation e ~ o in Modern Russian’.
4.3 The morpheme-based analysis

- Lightner’s analysis is beset with empirical difficulties,\(^{53}\) but its use of juncture and constituency to deal with some of them signals morphological entanglement.
- A better analysis: the presence of [\'o\] derives not from the C\(_{i}\)C context but from the properties of the following morpheme:
  - Polivanova: suffixes can ‘allow’ or ‘require’ [\'o\] in the preceding morpheme.
  - Itkin: suffixes that palatalize a preceding consonant *also* block [\'o\] (to be revised).
  - Cubberley\(^{56}\) gives a similar description.

4.4 Stem structure and palatalization

- A stratal analysis of Russian has been defended previously by Rubach,\(^{57}\) Blumenfeld;\(^{58}\) Gribanova;\(^{59,60}\)
- In many respects, it represents an attempt to rationalize earlier analyses with extrinsic ordering by positing strata.
- Classic analysis\(^{61}\):
  - Underlying /i/: palatalizes non-velars; coronalizes velars.
  - Underlying /i/: does not affect non-velars; palatalizes velars (and fronts itself).

(31) Verbal /i/

a. [krʲik] крик ‘shout.NSG’

b. [kritʲ-it] кричит ‘to shout-PRES.3SG’

c. [svʲet] свет ‘light.NSG’

d. [svʲetʲ-it] светит ‘to light-PRES.3SG’

(32) Nominative plural /i/

a. [krʲik] крик ‘shout.NSG’

b. [kritʲ-i] крики ‘shout-NPL’

c. [kʲit] кит ‘whale.NSG’

d. [kʲit-ɨ] киты ‘whale-NPL’

- The crucial stratal difference is:
  - Stem-level /ki/ \(\rightarrow [t\acute{i}]\)
  - Word-level (/ki/ \(\rightarrow\) /ki/ \(\rightarrow [k\acute{i}]\)
  - …and similarly /e/.

- Gribanova: evidence for a stratal distinction from yer behaviour, supported by morphosyntactic evidence\(^{63}\)

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\(^{53}\) Itkin, *Russkaya morfonologiya*.

\(^{54}\) Polivanova, ‘Морфология русского substantивного словообразования’.

\(^{55}\) Itkin, ‘Еще раз о чередовании e ~ ’o в современном русском языке’; Itkin, *Russkaya morfonologiya*.


\(^{62}\) Gribanova, ‘Russian prefixes and prepositions in Stratal OT’; Gribanova, ‘Phonological evidence for a distinction between Russian prepositions and prefixes’.

\(^{63}\) But the analysis of yers is of course, hugely contested (e.g. Gouskova 2012)
• Problem: ample evidence that palatalization is not caused by the features of the vowel\(^{64}\)

• Cf. the ‘palatalizing morphophonemes’ of Itkin\(^{65}\)

\((33)\)
\begin{align*}
\text{a. } & [\text{vor}] & \text{вор} & \text{‘thief’} \\
\text{b. } & [\text{var}^4\text{ug}la] & \text{ворога} & \text{‘thief PEJ OR’}
\end{align*}

\((34)\)
\begin{align*}
\text{a. } & [\text{kr}^\text{uku}] & \text{крюк} & \text{‘hook NSG’} \\
\text{b. } & [\text{kr}^\text{ut}\text{[\text{i-}oku}] & \text{крючок} & \text{‘hook DIM NSG’} \\
\text{c. } & [\text{kr}^\text{ut}\text{[\text{i-}k-a]} & \text{крючка} & \text{‘hook DIM G SG’}
\end{align*}

• Suggested solution:\(^{66}\) palatalization is caused by a floating feature

• Stratal differences in the outcome of the floating feature docking?

4.5 The [e] ∼ ['o'] alternation and suffixes

• As Itkin\(^{67}\) observes, all suffixes that require a preceding morpheme to have [e] also cause stem-level palatalization of preceding consonants\(^{68}\)

\((35)\)
\begin{align*}
\text{a. } & [\text{gr}^\text{op}] & \text{греб} & \text{‘ROW.PAST.SG.MASC’} \\
\text{b. } & [\text{gr}^\text{e}bʲ\text{i}\text{n]} & \text{гребень} & \text{‘comb’}
\end{align*}

\((36)\)
\begin{align*}
\text{a. } & [\text{l}^\text{od}] & \text{лед} & \text{‘ice’} \\
\text{b. } & [\text{ga}^\text{la}-\text{led}-\text{i}\text{š-a}] & \text{гололедица} & \text{‘ice crust’}
\end{align*}

\((37)\)
\begin{align*}
\text{a. } & [\text{gr}^\text{o}z\text{a}] & \text{грёза} & \text{‘dream NSG’} \\
\text{b. } & [\text{gr}^\text{e}z\text{u}] & \text{грежу} & \text{‘I dream’} \\
\text{c. } & [\text{gr}^\text{e}zi\text{t}] & \text{грезит} & \text{‘(s)he dreams’}
\end{align*}

• And conversely, all suffixes that require ['o] do not palatalize a preceding consonant

\((38)\)
\begin{align*}
\text{a. } & [\text{tv}^\text{erd}] & \text{твердь} & \text{‘firmament’} \\
\text{b. } & [\text{tv}^\text{ord-i}j] & \text{твердый} & \text{‘solid’}
\end{align*}

\((39)\)
\begin{align*}
\text{a. } & [\text{pa-sel-\text{it}} & \text{поселит} & \text{‘(s)he will settle’} \\
\text{b. } & [\text{pa-sol-ak}] & \text{посёлок} & \text{‘settlement’}
\end{align*}


\(^{65}\) Itkin, Russkaya morfonologiya.

\(^{66}\) Pavel Iosad & Bruce Morén-Duolljá. 2010. Rethinking palatalization in Russian. MS., University of Tromsø/CASTL.

\(^{67}\) Itkin, Russkaya morfonologiya.

\(^{68}\) Or at least the data is consistent with this observation: in many cases this action is obscured by more general phonotactic considerations.
• Generalization: if a suffix causes stem-level palatalization, it also requires a preceding morpheme to take [e] if that morpheme has an [e] allomorph
• The fronting is caused by the presence of the palatalizing feature, and is active at the stem level

4.6 ‘Indifferent’ suffixes

• Some palatalizing suffixes do not require preceding morphemes to take [e]\textsuperscript{69}.

(40) Case suffixes in /e/

a. [utʲos]  утёс  ‘cliff. N.S.G’

b. [utʲosʲi]  утёсе  ‘cliff. P.R.E.P. S.G’

(41) Past tense plural /i/

a. [mʲorz-nu-v]  мёрзнуть  ‘be cold. I.N.F’

b. [mʲorz-l-i]  мёрзли  ‘be cold. P.A.S.T. P.L’

(42) Diminutive /ik/

a. [ʃʲort]  чёрт  ‘devil’

b. [ʃʲort-ik]  чёртик  ‘wee devil’

(43) Diminutive /et͡s/ (with a yer)

a. [rʲiʂot]  решёт  ‘sieve. G.E.N. P.L\textsuperscript{70}.

b. [rʲiʂot-t͡s-a]  решётце  ‘sieve. D.I.M’

• Similarly, some non-palatalizing suffixes do not influence the [e] ∼ [’o] alternation

(44) Female /ok/ (with a yer)

a. [ɪɭuɭi-żem-iɪs]  вужжемец  ‘foreigner’

b. [ɪɭuɭi-żem-k-a]  вужжемка  ‘female foreigner’

c. [nava-sol]  новосёл  ‘new settler’

d. [nava-sol-k-a]  новосёлка  ‘female new settler’

• ‘Indifferent suffixes’ generalizations:

\textsuperscript{69} Itkin, \textit{Russkaya morfonologiya}.

\textsuperscript{70} The citation form is [rʲiʂɨˈto] решето, which does not show the quality of the underlying vowel.
– Inflection or highly productive derivation
– Never trigger stem-level palatalization

• Itkin notes the contrast between ‘indifferent’ diminutive /ik/, /ɛˈs/ and [e]-requiring non-diminutive, non-compositional homophonous suffixes:

\[
\begin{align*}
(45) & \quad a. \ [\text{varʲ-on-ɨj}] \quad \text{варёный} \quad \text{‘boiled’} \\
& \qquad b. \ [\text{varʲ-enʲ-ik}] \quad \text{вареник} \quad \text{‘dumpling’}
\end{align*}
\]

\[
\begin{align*}
(46) & \quad a. \ [\text{lʲiʂ-on-n-ɨj}] \quad \text{лишённый} \quad \text{‘deprived’} \\
& \qquad b. \ [\text{lʲiʂ-enʲ-its}] \quad \text{лишенец} \quad \text{‘one deprived of civil rights’}
\end{align*}
\]

4.7 Summary analysis

• The [e] ∼ [o] alternation is a stem-level pattern
• In frameworks with stem storage, if a stem has an [e] allomorph, it is chosen before a palatalizing suffix:

\[
\begin{align*}
\text{This explains why only stem-palatalizing suffixes trigger fronting} \\
\text{Instead of absolute neutralization with underlying /ɛ/}, \text{the applicability of [e] ∼ [o] is a matter of lexical storage}
\end{align*}
\]

• Word-level suffixes can palatalize preceding consonants, but do not affect stem allomorphy: obey locality and cyclicity

• Consilience of
  – Phonological evidence: palatalization
  – Phonological evidence: [e] ∼ [o] alternation
  – Morphological and semantic evidence
  – …despite the apparent lack of obvious stratification or stem morphology

5 Conclusion

5.1 Summary

• The three cases considered here all suggest that Stratal Phonology makes the right predictions in several areas
  – Welsh: relationship between the lexical syndrome and part-of-speech characterization
  – Irish: distinction between stem- and word-level domains in the absence of robust root-stem-word morphology
  – Russian: convergent evidence for cyclic domains from several phonological and morphological phenomena

• Stratal Phonology envisions just the right cyclic domain structure
References


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