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Derivational meanders of High Vowel Palatalization in Polish

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Abstract

This article investigates interactions that are triggered by PAL-i, a constraint that asks for consonants and high vowels to agree in backness. It is shown that PAL-i heads a conspiracy that involves several different processes, among them Palatalization, $/Ci/ \rightarrow [Ci]$, and Retraction, $/Ci/ \rightarrow [Ci]$ that both occur in Polish. I argue that the analysis calls for derivational levels, so Derivational Optimality Theory rather than Standard Optimality Theory is the correct framework. Levels, constituting miniphonologies with their own inputs, constraint ranking and inventories, are motivated by six arguments, each discussed in a separate section.

Keywords: Phonology; Derivational Optimality Theory; Polish phonology; Palatalization

This article 1 investigates interactions that are triggered by PAL-i, a constraint that asks for consonants and high vowels to agree in backness. It is shown that PAL-i heads a conspiracy that involves several disparate processes, among them Palatalization ($Ci \rightarrow Ci$) and Retraction ($Ci \rightarrow Ci$), both of which occur in Polish. I argue that the analysis calls for derivational levels, so Derivational Optimality Theory rather than Standard Optimality Theory is the correct framework. Levels, constituting miniphonologies with their own inputs, constraint ranking and inventories, are motivated by six arguments, each discussed in a separate section. Much evidence for the claims proposed in this article is drawn from the behavior of loanwords. Loanwords are used as a test for determining the productivity of phonological processes and their status with regard to the Derived Environment Condition.

This article is organized as follows. Section 1 presents a typology of processes that are part of the PAL-*i* conspiracy. Section 2 introduces the relevant background facts. Sections 3–8 construct and discuss arguments for level distinction in Derivational Optimality Theory. Section 9 concludes the article with a summary of the findings and an evaluation of the results.

1. Introduction: consonant-vowel conspiracy

Polish, Russian and Ukrainian exhibit phonological similarities because they are all Slavic languages spoken in the neighboring countries. The similarity that matters for this article is the role of the feature [\pm back] in vowels and consonants. In the relevant ways, the vowel systems of Polish, Russian and Ukrainian are the same.²

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² I abstract away from nasal vowels in Polish. I also disregard the so-called *yers*, that is, mid vowels that alternate with zero.

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The interest of this article is in the high vowels. Those include the front vowel [i], the central unrounded vowel [i] and the back rounded [u]. The feature $[\pm back]$ distinguishes [i] from [i] because central vowels align themselves with back vowels, where [i] is $[\pm back]$ while [i] is $[\pm back]$. The feature $[\pm back]$ plays a distinctive role also in consonants because Polish, Russian and Ukrainian exhibit an opposition of velarized vs. palatalized consonants. The Slavic tradition is to call velarized consonants 'hard' and represent them as $[\pm back]$ segments. Palatalized consonants, on the other hand, are called 'soft' and are represented as $[\pm back]$ segments. All consonants are either $[\pm back]$ (velarized) or $[\pm back]$ (palatalized) and there are no neutral consonants. For example, the labials in Polish, Russian and Ukrainian include the following consonants.

(2) Hard and soft labial consonants

	p	p ^j	b	b ^j	m	m ^j	V	\mathbf{V}^{j}	f	f
back	+	-	+	-	+	-	+	-	+	-

Following the Slavic tradition, palatalized consonants are marked (here by the superscript ^j) while velarized consonants are left unmarked.

The goal of this article is to investigate what happens when [i] and [i] that are distinguished by $[\pm back]$ and [C] and [C] that are also distinguished by $[\pm back]$ come together, for example, as a result of morpheme concatenation. Theoretically speaking, we may have the following configurations.

- (3) Consonant-vowel configurations
 - a. C + i: velarized consonant plus [i], so $C_{[+back]}$ and $V_{[+back]}$; the C and the V agree in $[\pm back]$.
 - b. C^{i} + i: palatalized consonant plus [i], so $C_{[-back]}$ and $V_{[-back]}$; the C and the V agree in [$\pm back$].
 - c. C + i: velarized consonant plus [i], so $C_{[+back]}$ and $V_{[-back]}$, the C and the V disagree in $[\pm back]$.
 - d. C^{i} + i: palatalized consonant plus [i], so $C_{[-back]}$ and $V_{[+back]}$; the C and the V disagree in [\pm back].

The configurations in (3) are exemplified from Polish.

- (4) a. kran [n] 'faucet' (nom.sg.) kran + y [n + i] (nom.pl.), underlying hard //n//⁵ plus //i//, so the underlying representation is //kran + i//
 - b. $ko\acute{n}$ [n] 'horse' (nom.sg.) kon + ik [n + i] (dimin.), underlying soft $//n//^6$ plus //ii/, so the UR is //ksp + ik//
 - c. kran [n] 'faucet'(nom.sg.) kran + ik [n + i] (nom.pl.), underlying hard //n// plus //ii/, so the UR is //kran + ik//
 - d. $skro\acute{n}$ [n] 'forehead' (nom.sg.) skron + i [n + i] (gen.sg.), underlying soft //n// plus //i//, so the UR is //skron + i//

The underlying representation $\frac{1}{i}$ of the gen.sg. in (4d) requires a comment. Underlying $\frac{1}{i}$ surfaces overtly as [i] after hard consonants, for example, ran + y [ran + i] 'wound' (gen.sg.), so we see an alternation: [i] in skron + i (4d) and [i] in ran + y.

The consonant–vowel configurations in (3a–b) and the examples in (4a–b) do not trigger phonological processes, so the underlying representations appear unchanged as the surface representations. The reason for this inertness is easily identified. In (3a, 4a), the consonant is [+back] and so is the vowel. In (3b, 4b), the consonant is [-back] and so is the vowel. The observation is that the grammar is inert if the consonant and the vowel agree in backness. This generalization

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³ The status of //ɨ// as an underlying vowel is not in doubt; for discussion, see Rydzewski (2017).

⁴ See Avanesov (1968) for Russian, Wierzchowska (1963, 1971) for Polish and Bilodid (1969) for Ukrainian.

⁵ I use double slashes for underlying representations, single slashes for intermediate representations and square brackets for phonetic representations.

⁶ This is a prepalatal nasal, which, needless to say, is [-back].

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