Variation is in the lexicon: yer-based and epenthetic vowel-zero alternations in Polish

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Polish features two competing patterns of root-final cluster vocalisation in Gpl: monomorphemic -CC# may (*wiadr-o* - *wiader* "pail Nsg, Gpl") or may not vocalize (*cyfr-a* - *cyfr* "number Nsg, Gpl"). The latter will be called pattern A, the former pattern B. However, (monomorphemic) clusters always vocalize in presence of a C-initial (or yer-initial) suffix, even those that do not in Gpl: *wiader-k-o* "id., dim.", *cyfer-k-a* "id., dim.". The pattern is also lexically variable: some roots have both vocalized and non-vocalized forms in free variation (*wydr-a* - *wydr* / *wyder* "otter Nsg, Gpl"). Finally, there is cross-speaker variation as well: some speakers may accept a vocalized or unvocalized version of a root in Gpl, while others may not (e.g. *kurw-a* - *kurew* / *?kurw* "whore Nsg, Gpl").

The pattern cannot be analysed with the regular instrument that is put to use for (Slavic) vowel-zero alternations, i.e. lexically present vowels that are made inaudible by phonological computation (the yers). Most of the literature does not talk about the pattern at all: this is the case for instance of two of the three books that have founded the generative analysis of Polish, Gussmann (1980) and Rubach (1984). By contrast, the third book in this category, Laskowski (1975:29ff), offers a very careful survey of the very intricate empirical situation and provides rich material (see also Bajerowa 1953). Laskowski (1975) is couched in linear SPE, and he considers all vowel-zero alternations the result of epenthesis (rather than of deletion). His conclusion is that all kinds of lexical items need to be diacritically marked as an exception to all kinds of rules. Szpyra (1995:97) reaches the same obvious conclusion, but formulates the need for lexical marking in theory-neutral terms: "the logical conclusion is that the presence versus absence of yers is largely unpredictable und must therefore be marked in the lexical representation of the relevant items."

Gussmann (2007) proposes a completely different interpretation of the pattern: giving up on its phonological character altogether, he argues that the relevant vowel-zero alternations are instances of allomorphy, i.e. managed outside of the phonology. Cyran's (2005) analysis of the (non-)vocalization of word-final clusters, although not explicitly (because forms with C/yer-final suffixes are not considered), also results in an allomorphic solution.

Finally, Bethin (1992:146ff) argues for a scenario whereby vowel-zero alternations are based on regular yers, except in loanwords where they are of epenthetic origin. The talk argues that this approach is on the right track, but needs to be refined: there is no difference between loanwords and native vocabulary (extension of the scope of Bethin's epenthetic analysis), and all vowel-zero alternations in loans do not originate in epenthesis (restriction of the scope of Bethin's epenthetic analysis). Also, The difference between *cyfr-a* - *cyfr* and *wiadr-o* - *wiader* is certainly unpredictable and hence encoded in the lexical recording of each item – but not by way of Laskowski's lexical diacritics, which are also used by Bethin. Instead of placing diacritics into phonological representations that alter the course of the phonological computation, I argue that the lexical opposition is achieved by contrasting properties of the (autosegmental) representation itself. That is, there are three (and only three) distinct structures: 1) stable vowels (i.e. which do not alternate), 2) alternating vowels that appear in clusters in Gpl (*wiadr-o* - *wiader*) and 3) alternating vowels that do not appear in clusters in Gpl, but surface before C/yer-initial suffixes (*cyfr-a* - *cyfr* - *cyfer-k-a*). This triple lexical contrast is expressed in the vocabulary of strict CV phonology (Lowenstamm 1996, Scheer 2004, Cyran 2010).

The three variations mentioned (within Gpl, cross-roots and cross-speaker) are then a consequence of alternative or hesitating lexicalisation of the three lexical representations. As Bethin's, this solution is thus purely phonological and instantiates a currently developed idea in minimalist syntax: variation reduces to variation in the lexicon (the so-called Chomsky-Borer Conjecture: Biberauer 2008, Baker 2008, Roberts & Holmberg 2010).

The gist of the analysis is that an important piece of the standard Slavic yer-based account of vowel-zero alternations needs to be abandoned: it is not true that all vowels which alternate with zero are underlyingly yers – Bethin (1992:153) says that "[v]owel-zero alternations in Polish are not attributable to a unique underlying representation". Some are yers (in my analysis, but not in Bethin's, those that vocalize in Gpl: *wiadr-o - wiader*), while others are not (those that do not vocalize: *cyfr-a - cyfr*). The latter are epenthetic vowels, i.e. lexically absent and inserted in order to repair an ill-formed structure (three consonants in a row in surface description, two empty nuclei in a row in the analysis developed here).

Only analysis will tell who is who, i.e. whether a given alternating vowel is a yer or epenthetic. In the Polish case, the critical diagnostic is the behaviour of stem- or root-final clusters in Gpl: vowels that appear before C/yer-initial suffixes in pattern A roots are epenthetic (*cyfer-k-a*, cluster unvocalized in Gpl: *cyfr-a - cyfr*) while they represent vocalized yers in pattern B roots (*wiader-k-o*, cluster vocalized in Gpl: *wiadr-o - wiader*).

All variation encountered is lexical in nature. On the one hand, A- and B-items contrast by the lexical presence vs. absence of a yer, and roots that have both A- and B-forms in free variation (*wydr-a - wydr*/*wyder*) afford both lexcial recordings (with and without the yer). On the other hand, there is variation associated to forms with C/yer-initial suffixes. The following reactions are encountered in order to repair a CCC sequence (i.e. one that contains two empty nuclei in a row):

(1) $C_1C_2C_3$

	CC-V Nsg	C(e)C# Gpl	/C(e)C(e)C/ C/yer-initial suff.
a. epenthesis: CeCC	cyfr-a	cyfr	cyfer-k-a
b. yer vocalization: CeCC	srebr-o	sreber	sreber-k-o
c. trapped sonorant	srebr-o	sreber	srebr-n-y
d. branching coda-sonorant	kart-a	kart	kart-k-a
e. C_2 eliminated	mas-ł-o	mas-eł	mas-nic-a (mas-el-nic-a)

A pattern where several strategies compete in order to repair an ill-formed structure appears to be predestined for an OT-type analysis in terms of constraint interaction. This is not the case here: I argue that the contrast between all patterns is only lexical, and that no piece of the variation is produced by phonological computation.

Let us now look at the broader Slavic picture. If Polish has alternating vowels that are the result of epenthesis, other Slavic languages may have epenthetic vowels as well. Czech for instance is not among them: in this language vocalisation in Gpl is absolutely regular (*form-a - forem - ne-forem-n-ý*) "form Nsg, Gpl, adj." and so on). In Polish terms, Czech is a language where all roots are of the B-type, and hence where all vowel-zero alternations represent yer vocalisation. Diachronically speaking, then, it may be the case that Polish is on the way to become like Czech (the movement is from A- to B-roots).

Finally, the analysis of Polish makes a prediction regarding Slavic languages where more than one vowel alternates with zero (e.g. of the Eastern family): in case they feature the Polish pattern and thus have epenthetic vowels, there must be a way to predict which vowel (e or o in Russian for example) will be inserted. Either it is always the same vowel, i.e. e or o, or the

quality of the vowel must be predictable from the consonantal environment. Russian happens to instantiate the Polish pattern (Worth 1968), and the prediction may thus be tested: those alternating vowels which appear in presence of yer-initial suffixes, but not in Gpl (e.g. *igr-á - ígr - igór-k-a* "game Nsg, Gpl, dim."), must not be able to sustain the lexical contrast between e and o. This appears to be a true statement.

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