

THE LIFE OF YERS IN SLAVIC AND ELSEWHERE: AN ARGUMENT FOR EMPTY NUCLEI

(1) purpose

- a. to evaluate the consequences of the empirical object

yer context — $\left. \begin{array}{l} C.C\bar{V} \\ C\# \\ C\emptyset \end{array} \right\}$ in Closed Syllables
 where "ø" alternates with zero

challenge: **how can this disjunction be reduced ?**

- b. phonological processes controlled by the yer context:

1. Slavic vowel-zero alternations
2. vowel length in Czech nominal -a and -o paradigms
3. [ɔ] - [u(u)] in Polish and Czech
4. ą - ę in Polish
5. ε - ə in French
6. ATRness of mid vowels in French

- c. two attitudes in regard of the yer-context

West, Coda Capture: "Cø" is an optical illusion, this part is reinterpreted as a closed syllable.

East: "in closed syllables" is an optical illusion, all syllables involved are open.

my take: the West was wrong.

- d. to show that the classical generative analysis of Slavic vowel-zero alternations (Gussmann 1980, Rubach 1984) supposes a distribution of "abstract vowels" that is identical to the one of empty Nuclei in Standard Government Phonology, i.e. 1) after word-final consonants, 2) in locations where a vowel alternates with zero.

- e. hence, to bring together three traditions (that were contemporary in the 80s) among which little communication has existed in the past

1. French
2. Slavic
3. Government Phonology

- f. to account for the full set of facts in terms of a unified theory plus a parameter.

I. Slavic vowel-zero alternations

(2) basic pattern of Slavic vowel-zero alternations

| | C__C-V | C__C-ø | C__C-CV | gloss |
|--------|---------|---------|----------|----------------------------|
| Czech | lokøt-e | loket-ø | loket-ní | "elbow" GENsg, NOMsg, adj. |
| Polish | wojøn-a | wojen-ø | wojen-ny | "war" NOMsg, GENpl, adj. |
| etc. | | | | |

- (3) naive analysis thereof
- a. alternation sites are mute in open syllables
alternation sites are vocalised in closed syllables
 - b. their vocalisation is a consequence of syllable structure: the immediate trigger is the presence of a Coda in the same syllable.
 - c. the presence or the absence of a following vowel has only an indirect incidence on their vocalisation.

(4) however

| | open syllable | | closed syllable | | |
|-----------------------------|--------------------|-----------------------|--------------------|-----------------------|---|
| | zero | | vowel | | |
| | C __ C-V | C __ C-yer CV | C __ C-ø | C __ C-CV | gloss |
| Czech | dom- ø k-u | dom- eč -ek-ø | domek-ø | dom- eč -øk-u | house dim.GENsg, double dim. NOMsg, dim. NOMsg, double dim. GENsg |
| Slovak | kríd- ø l-o | kríd-el-iec-ø | kríd-el-ø | kríd-el-øc-e | wing dim.NOMsg, double dim. GENpl, dim. GENpl, double dim. NOMsg |
| Polish | buł- ø k-a | buł- ecz -ek-ø | buł-ek-ø | buł- ecz -øk-a | bread roll dim. NOMsg, double dim. GENpl, dim. GENpl, double dim. NOMsg |
| Serbo-Croatian ¹ | vrab- ø c-a | vrab- ac -a | vrab- ac -ø | | sparrow GENsg, GENpl, NOMsg |

- (5) generalisation
- a. alternation sites are vocalised in open syllables iff the following vowel alternates with zero itself.
 - b. vowels that alternate with zero are called yers in Slavic for historical reasons. They come in two flavours:
one front and palatalizing: Ъ [other symbols used in the synchronic literature]
one back and non-palatalizing: ъ literature
 - c. hence, zero occurs in closed syllables and before yers.
 - d. theory is called to be able to refer to this disjunction in a uniform fashion. The closed-syllable analysis is contrary to fact.
 - e. **the Eastern way:**
generalisation of the yer-context: the vocalisation of alternation sites is ALWAYS provoked by a yer in the following syllable

Lower
Ь, ъ → e, o / __ C₀ {Ь, ъ}

Lower: Lightner (1965), Gussmann (1980), Rubach (1984,1986), Kenstowicz & Rubach (1987) etc.

¹ The alternating identity of the final vowel in GENpl *vrab-ac-a* may not be established synchronically since morphology does not allow to add another suffix. However, GENpl *vrab-ac-a* contrasts with GENsg *vrab-øc-a*, and more generally with all other nominal forms: 11 out of 12 vowel-initial case-markers (for a total of 14, seven sg, seven pl; only NOMsg and ACCsg are zero) provoke the allomorph containing zero -øc-, only GENpl induces its vocalised version. Now it is a fact that the diachronic identity of the GENpl, and only of this marker, is a yer. This can hardly be taken as an accident.

(6) price to pay: underlying yers have to be postulated in locations where they do not appear on the surface:

1) unvocalised alternation sites

2) after word-final consonants

a. the underlying structure of the word bułeczek contains three "abstract vowels":

b u ł ɤ cz ɤ k ɤ

b. derivation: cyclic application of Lower

| | | | |
|--------------|--------------|----------------|------------|
| underlying > | Lower > | yer-deletion > | surface |
| buł-ɤcz-ɤk-a | buł-ecz-ɤk-a | buł-ecz-k-a | bułecz-k-a |
| buł-ɤk-ɤ | buł-ek-ɤ | buł-ek | bułek |
| buł-ɤcz-ɤk-ɤ | buł-ecz-ek-ɤ | buł-ecz-ek | bułecz-ek |
| buł-ɤk-a | buł-ɤk-a | buł-k-a | bułk-a |

(7) consequence: vowel-zero alternations have got nothing to do with syllable structure

a. Lower denies any causal relation between syllable structure and the vocalisation of alternation sites.

Vowel-zero alternations are not triggered by the presence or absence of a consonant in a given syllable (Coda-analysis), but by an intervocalic communication.

==> **the causal relation is not vertical, but lateral**

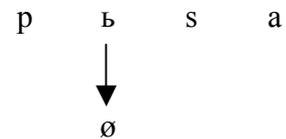
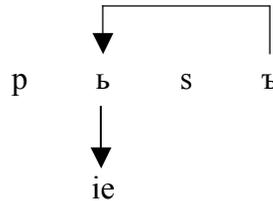
that is, a yer is vocalised under the influence of another yer that occurs in the following syllable.

b. the intervocalic communication at hand involves two yers.

Informal statement: "if you get two yers in a row, vocalise the first one".

A) pies NOMsg

B) psa GENsg

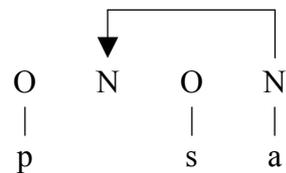
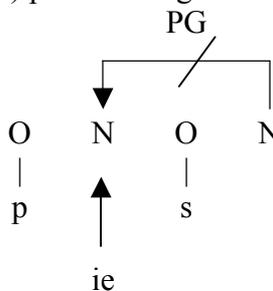


c. Government Phonology Kaye et al. (1990), Kaye (1990), Harris (1994), Lowenstamm (1996), Scheer (1999,ms) was built in complete disregard of Slavic.

1. Structure Preservation and the ban on resyllabification enforce a view whereby the syllabic identity of vowels that alternate with zero is an empty Nucleus even when the zero surfaces:

A) pies NOMsg

B) psa GENsg



2. the lateral relation between "the two yers" of Lower is called Proper Government. Only contentful Nuclei can govern. Therefore, PG breaks down under A), but goes into effect under B).
In the former case, a language-specific epenthesis provides phonetic content for the Nucleus that escapes PG.
 3. Or, in informal terms: "if you get two empty Nuclei in a row, vocalise the first one".
 4. the distribution of empty Nuclei is controlled by the Empty Category Principle: Nuclei may remain phonetically unexpressed iff
 - A) they are word-final or
 - B) they are properly governed
 [this is the 1990-version, which has evolved since then, see e.g. Scheer (ms)]
- d. that is, Government Phonology and Lower say the same thing.
the distribution of empty Nuclei (Gov Phon) and yers (Lower) is strictly identical:
1. in locations where a vowel alternates with zero
 2. after word-final consonants

II. Other Slavic alternations

- (8) however, the distributional pattern of the yer context extends beyond vowel-zero alternations

| | open syllable | | closed syllable | | |
|---------------------------|---------------|-----------|-----------------|-----------|--|
| | C__C-V | C__C-yer | C__C-ø | C__C-CV | gloss |
| a. Czech VV-V | žáb-a | žabek-ø | žab-ø | žab-øk-a | frog NOMsg, dim. GENpl, GENpl, dim. NOMsg |
| | jádr-o | jader-ní | jader-ø | | stone (of a fruit) NOMsg, nuclear, GENpl |
| b. Czech ů-o ² | nož-e | nůž-ek-ø | nůž-ø | nůž-øk-y | knife GENsg, scissors (=dim.) GENpl, knife NOMsg, scissors NOMpl |
| c. Polish ó-o | krow-a | krów-ek-ø | krów-ø | krów-øk-a | cow NOMsg, dim. GENpl, GENpl, dim. NOMsg |
| d. Polish ą-ę | zęb-a | ząb-ek | ząb-ø | ząb-øk-a | tooth GENpl, dim. NOMsg, NOMsg, dim. GENsg |

- (9) the processes under (8) are synchronically inactive
- a. žába - žab - žabka - žabek 31 roots
but
fasáda - fasád - fasádka - fasádek 53 roots
see the detail of my personal count in Scheer (2001a,b) and the appendix to this handout. Of course, the non-alternating roots are the "recent" ones.

² The majority of Czech roots that show the ů-o alternation does in fact react on yers: *dům* - *domek* "house, id. diminutive", *stůl* - *stolek* "table, id. diminutive" etc. The cases where yers are treated as regular vowels seem to be those where the form that contains the vocalised version of the yer is the Nominative singular. Feminine nouns that show the vocalised yer in GENpl forms bear the unaltered <ů>: *nůž-øk-y* - *nůž-ek* "scissors NOMpl, GENpl", *hůl-øk-a* - *hůl-ek* "little stick NOMsg, GENpl", *půl-øk-a* - *půl-ek* "half NOMsg, GENpl". There is no hope to tell both sets from each other on phonological grounds.

- b. (8)b Czech ů-o (numbers are the number of entries in LEDA 1997)
1. static: 539 ... ůCV: chůze, chůda, důvěra, můžeš, šňůra, smůla etc.
 2. dynamic
there are exactly 20 alternating items of the kind dům - domu
all of them have a voiced consonant (= voiced obstruent or sonorant) after the ů:
bůh, hnůj, lůj, můj, tvůj, svůj, stůj !, stůl, sůl, důl, hůl, kůl, půl, vůl, dům, kůň, dvůr, -ův, vůz, nůž
- [uu] < ú and of foreign origin do not alternate:
ocún - ocúnu, úl - úlu, trůn - trůnu, kůr - kůru, tůň - tůně, trubadúr - trubadúra,
růž - růže
- c. (8)c Polish ó-o (numbers are the numbers of entries in PWN 1998)
1. static
in internal closed syllables
ó [u] / C-C: góry 36 all of which C_{+voice}
o [ɔ] / C-C: bezwodny 571 both C_{-voice} and C_{+voice}
bezrobotny
- <o> [ɔ] in final closed syllables
o [ɔ] / C_{-voice} # kłopot 732
o [ɔ] / C_{+voice} # melon 1912
- <ó> and <u> in final closed syllables
ó [u] / C_{-voice} # pomoc 26
u [u] / C_{-voice} # kaktus 821
ó [u] / C_{+voice} # bóg 399
u [u] / C_{+voice} # kocur 857- 2. dynamic
alternating
 C_{+voice} # bóg - boga
 C_{-voice} # powrót - powrotu

non-alternating
 C_{+voice} # król - króla
 C_{-voice} # skrót - skrótu

try out Szkoda (Czech car) with a native: 5 Szkod or 5 Szkód?

d. (8)d Polish ą-ę (numbers are the numbers of entries in PWN 1998)

 1. static
nouns:
...ąC# 148
both C_{-voice} ąś
 C_{+voice} ąś
...ęC# 123
both C_{-voice} ęś
 C_{+voice} ęś (cf. ąś)

2. dynamic

nouns:

alternating 33

__C_{+voice} błąd - błędu all of them __C_{+voice}
 [only one alien __C_{-voice}: dziesiąt - dziesięciu]

non-alternating 63

__C_{+voice} kąt - kątu /-a

__C_{-voice} wąs - wąsa

"minimal pair"

rząd - rządu "government"

rząd - rzędu "row"

the same root sometimes alternates, and some

does not: wzgląd – względu, but dogład – dogładu,

- (10) the fact that (8)a-d are synchronically inactive does not make them less real. They represent a process that is common to all Western Slavic languages (Polish, Czech, Slovak), and hence has governed the synchronic phonology of their common ancestor:

short [ɔ] is lengthened before a word-final voiced consonant

where "word-final" actually means "before a word-final Common Slavic yer that has been lost".

early diachronic interpretations were still focussing on intonational oppositions (which have no incidence on Western Slavic quantity). The compensatory view ("the loss of a final vowel causes the lengthening of its preceding peer, i.e. the overall quantity is stable") has gained ground since then:

Czech: Lamprecht et al. (1986:113), Vondrák (1924:324s), Trávníček (1935:82ss,268s), Polish: Klemensiewicz et al. (1964:52s), Rospond 1979:65ss), Długosz-Kurczabowa & Dubisz (1993:79ss).

| input | Cz | Pol | Pol ą = nasal [ɔ] |
|---|--------------|----------------|-------------------|
| | nož - nož-e | krow - krow-a | ząb - ząb-a |
| a. o --> oo / __C _{+voice} # | noož - nož-e | kroow - krow-a | ząąb - ząb-a |
| further language-specific diachronic events | | | |
| b. Pol + Cz: oo > uu | nuuž - nož-e | kruuw - krow-a | — |
| c. Pol ą > ę | — | — | ząąb - zęb-a |
| d. loss of length in Pol | — | kruw - krow-a | ząb - zęb-a |
| e. modern situation | nůž - nož-e | krów - krow-a | ząb - zęb-a |

- (11) but this diachronic event does not explain why lengthening has also taken place

| diachronic input | Cz nož- | Pol krow- | Pol ząb- |
|---|---------|-----------|----------|
| a. in internal closed syllables ("before a yer that has been lost" could be argued here) | nůž-ky | krów-ka | ząb-ka |
| b. in open syllables iff the following vowel alternates with zero (no way to argue "before a yer that has been lost") | nůž-ek | krów-ek | ząb-ek |

- (12) hence, the correct description of the process that has occurred in (Common) Western Slavic is as follows:

o > oo before voiced consonants in the yer context

that is

$$o > oo \quad \text{---} \quad \left\{ \begin{array}{l} C_1.CV \\ C_1\# \\ C_1 \text{ ə} \end{array} \right\} \quad \text{iff } C_1 \text{ is voiced}$$

==> the alternations under (8)b-d illustrate vowel **quantity**, not quality.
The alternation at hand is controlled by the yer context.

- (13) overall summary of the Slavic situation

- a. on several occasions, vowels behave alike in closed syllables and in open syllables iff the following vowel is a yer.
Or, in other words: vowels in open syllables that occur before yers behave like if they stood in closed syllables. Yers behave as if they were not there.

[disclaimer: note that I do not claim that the alternations at hand are synchronically active in the various languages. I have shown that they are not. But they were active in the synchronic grammar of former stages of the language(s). Diachronic evidence is evidence as much as synchronic evidence. The only thing that is important for my analysis is that there is (or was) a Slavic language where the yer context controls alternations that do not involve vowels and zeros. My analysis is not any more abstract because it is based on diachronic evidence.]

- b. this distribution is identical with the one that controls vowel-zero alternations. If this is not accidental, the generalisation in order must be as follows:
1. vocalic alternations in Slavic languages are triggered by yers.
 2. they are thus the result of an internuclear communication: a lateral relation.
 3. yers are "abstract vowels". They that are underlyingly present
 1. in locations where a vowel alternates with zero
 2. after word-final consonants
 4. target vowels may be yers themselves (vowel-zero alternations), but also regular vowels (alternations in vowel length).
 5. the overall generalisation may not be described with Lower, for Lower covers only vowel-zero alternations.
The generalisation at stake is of more general intervocalic nature.

III. Previous analyses of vowel-zero alternations and their compatibility with the other Slavic instances of the yer context

- (14) Spencer (1986)

- a. Spencer fully accepts the insights of Lower:
1. yers exist
 2. Polish does not possess Codas in alternating environments
 3. nor word-final consonants at the underlying level.
- b. Spencer's purpose is to make Lower and the formal apparatus used by Gussmann (1980) and Rubach (1984) less abstract.

- c. he aims at proposing a version of Lower that does not appeal to
1. underlyingly present yers that are subject to absolute neutralisation
 2. the extensive use of extrinsic rule-ordering
 3. the cyclic application of rules.
- d. "yer = empty Nucleus" (Spencer 1986:255)
 Spencer conflates both yers into one single object: there is just one variety of empty Nuclei.
 As shown below, the palatality effects are achieved by the lexical presence of a /j/ in the root of *dzień* vs. its absence in the root of *sen*.

| | | | | | | | |
|-------------|---|-------------|---|-----------|---|-------------|---|
| dzień NOMsg | | dønia GENsg | | sen NOMsg | | søn-u GENsg | |
| C | V | C | V | C | V | C | V |
| | | | | | | | |
| dj | | n | * | dj | * | n | a |
| | | | | s | | n | * |
| | | | | | | s | * |
| | | | | | | n | u |

- e. Spencer's analysis:
 reproduction of Lower: "lower all but the rightmost of a consecutive string of yers. The remaining yer is then deleted".
1. the last member of a yer-chain is given a special status: "extrametrical" (even though it may occur word-internally). These empty Nuclei are identified by an asterisk.
 2. extrametrical empty Nuclei may not receive melodic identification.
 3. a late postcyclic rule deletes unassociated empty Nuclei.
- f. critique: fill-in without causality
1. why should the "remaining yer", i.e. the last yer of a yer-chain, exist in the first place if it is deleted anyway ?
 2. that is, there is no reason for the existence of the "extrametrical" empty Nuclei.
 3. there is no causal relation between the existence of an empty Nucleus (i.e. a yer) and the vocalisation of its preceding peer. Spencer's rule that inserts melodic content to empty Nuclei makes no reference to the melodic status of the following syllable at all. It simply says "insert [ε] into empty Nuclei".
 4. ==> Spencer misses the very essence of Lower: there is a lateral relation between two yers; consecutive yers "see each other".
 5. Spencer's analysis could not possibly extend to the other Slavic instances of the yer context because the target Nuclei are not empty.

(15) Szpyra (1992): ghost vowels

- a. Szpyra participates in the drive against abstract underlying structures. She aims at doing away with yers that never appear on the surface, that is word-final yers with morphological value.
- b. only alternating, but not triggering yers, are present in underlying representations.
 [alternating yers = the ones that are lowered and acquire a phonetic existence]
 [triggering yers = the ones that cause lowering, and are subject to later yer deletion]
- c. Szpyra denies the intervocalic causality of Polish vowel-zero alternations altogether. Alternating yers are not vocalised because of the presence of a yer in the following syllable. Rather, they come into phonetic being in order to salvage unsyllabifiable consonants that could not otherwise be accommodated.
- d. her argumentation crucially hinges on the analysis of Polish ę-ą and o-ó. For the sake of her demonstration, the yer-context that controls them *must not* be deprived of its disjunctivity.
- e. critique

1. disjunctions are suspicious per se.
2. Szpyra draws a red line in the middle of three processes that are governed by identical contextual conditions: ϵ - a and o - ó on one hand obey a disjunction, whereas vowel-zero alternations on the other are due to a unified cause, that is the unsyllabifiable character of certain consonants.

IV. French

- (16) however, the distributional pattern of the yer context extends beyond Slavic:
French $[\epsilon]$ – schwa alternation

| closed syllable | | open syllable | | |
|---|---|--|--|--|
| $\epsilon C\#$ | $\epsilon C\text{ə}$ | $\text{ə}CV$ | | |
| $m\text{ɔ}\chi s\epsilon l$ | $m\text{ɔ}\chi s\epsilon l\text{ə}m\tilde{a}$ | $m\text{ɔ}\chi s\text{ə}l\tilde{\text{ɔ}}$ $m\text{ɔ}\chi s\text{ə}l\text{e}$ | | 1) je, tu, il, ils morcèle(s)(nt), 2) morcèlement, 3) nous morcelons, 4) inf./ part./ vous morceler/ -é/ -ez |
| $ap\epsilon l$ | $ap\epsilon l\text{ə}r\text{a}$ | $ap\text{ə}l\text{e}$ | | j'appelle, appellera, appellation |
| $\tilde{a}\text{s}\text{ɔ}\chi s\epsilon l$ | $\tilde{a}\text{s}\text{ɔ}\chi s\epsilon l\text{ə}m\tilde{a}$ | $\tilde{a}\text{s}\text{ɔ}\chi s\text{ə}l\text{e}$ | | j'ensorcèle etc., ensorcèlement, ensorcèler etc. |
| $a\chi s\epsilon l$ | $a\chi s\epsilon l\text{ə}m\tilde{a}$ | $a\chi s\text{ə}l\text{e}$ | | je harcèle etc., harcèlement, harceler etc. |
| $a\text{ʃ}\epsilon v$ | $a\text{ʃ}\epsilon v\text{ə}m\tilde{a}$ | $a\text{ʃ}\text{ə}v\text{e}$ | | j'achève etc., achèvement, achever etc. |
| $s\epsilon v\text{ʝ}$ | $s\epsilon v\text{ʝ}\text{ə}v\text{a}$ | $s\text{ə}v\text{ʝ}\text{e}$ $s\text{ə}v\text{ʝ}\text{a}\text{ʒ}$ | | elle sèvre, sévrera, sévrer, sevrage |

- (17) French ATR-alternations of mid vowels
closed syllable open syllable

| | $__C\text{ə}$ | $__CV$ | |
|----------------------------------|---|--|--------------------------------|
| e $f\epsilon t$ | $s\epsilon l\text{ə}v\text{ɪ}$ | $f\text{e}t\text{e}$ | je fête, céleri, fêter |
| $p\epsilon\text{ʝ}d\text{y}$ | $b\text{e}t\text{ə}v\text{a}v$ | $p\epsilon\text{ʝ}v\text{ɪ}\text{ʝ}$ | perdu, betterave, périr |
| $s\text{ə}v\text{ɛ}n$ | $s\text{ə}v\text{ɛ}n\text{ə}m\tilde{a}$ | $s\text{ə}v\text{ɛ}n\text{ɪ}t\text{e}$ | sereine, sereinement, sérénité |
| o $k\text{ɔ}d$ | $m\text{ɔ}k\text{ə}v\text{ɪ}$ | $k\text{ɔ}d\text{e}$ | code, moquerie, coder |
| $r\text{ɔ}z$ | $r\text{ɔ}z\text{ə}v\text{ɛ}$ | $r\text{ɔ}z\text{je}$ | rose, roseraie, rosier |
| $s\text{ɔ}b\text{ʝ}$ | $s\text{ɔ}b\text{ʝ}\text{ə}m\tilde{a}$ | $s\text{ɔ}b\text{r}ɪ\text{j}\text{e}t\text{e}$ | sobre, sobrement, sobriété |
| \emptyset $\text{ø}v\text{œ}z$ | $\text{ø}v\text{œ}z\text{ə}m\tilde{a}$ | $ap\text{ø}v\text{ɛ}$ | heureuse, heureusement, apeuré |
| $\text{œ}v\text{ʝ}$ | $b\text{œ}v\text{ə}v\text{ɪ}$ | $\text{ø}v\text{r}\text{e}$ | œuvre, beuverie, œuvrer |
| $z\text{œ}n$ | $v\text{œ}l\text{ə}r\text{ɪ}$ | $z\text{ø}n\text{ɛ}s$ | jeune, veulerie, jeunesse |

- (18) generalisation
- a. Ajustement en syllabe fermée
the French facts are well known and extensively discussed for example in Dell (1973:209ss), Selkirk (1972:367ss), Schane (1968:30ss), Valdman (1972), Morin (1986,1988), Tranel (1987,1988).
 - b. +ATR and schwa occur in open syllables.

- c. -ATR and [ɛ] occur in closed syllables AND in open syllables if the following vowel is a schwa.

Since schwa alternates with zero in French, the parallel with the Slavic facts is obvious:

-ATR and [ɛ] occur in closed syllables AND in open syllables if the following vowel alternates with zero itself.

(19) **the Western way:** Anderson (1982) How to get something for nothing

- a. paradox: how to have your cake and eat it

1. segmentally, the only possible underlying identity of the alternants zero, schwa and [ɛ] is zero = **nothing**

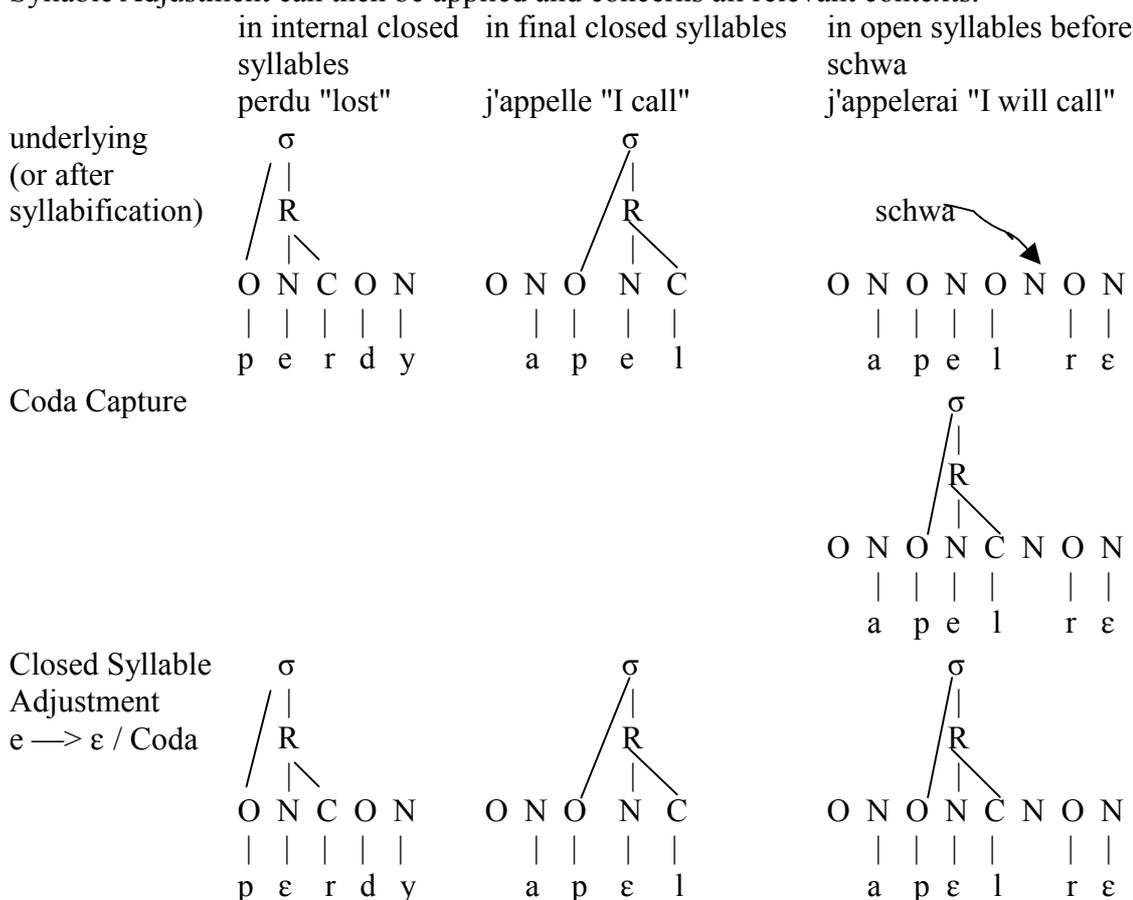
2. the occurrence of alternating items cannot be predicted: *pelage* [pələʒ], [pləʒ] vs. *plage* [pləʒ], *[pələʒ], hence it must be **something**

- b. solution: autosegmental structure

schwa is melodically nothing, but syllabically something, i.e. an empty Nucleus.

(20) Coda Capture: "we face an Onset that behaves like a Coda, so let's make it a Coda". the disjunction "in closed syllables and before schwa" is reduced to "in closed syllables" through Coda Capture:

the Onset of empty Nuclei is resyllabified as the Coda of the preceding syllable. Closed Syllable Adjustment can then be applied and concerns all relevant contexts.



V. The puzzle

| (22) alter-nation | statement | object occurring in | | __CV | example __Cyer |
|-----------------------|------------|---------------------|--|-----------------------|--|
| | surface | __CV if V≠schwa | closed syllable and __CV if V=schwa | | |
| | using yers | __CV | __Cyer | | |
| Slavic vowel-zero | zero | zero | vowel | dom- o k-u | dom-ek, dom-eč-ek, dom-eč- o k-u |
| French schwa - [ɛ] | schwa | [ɛ] | [ɛ] | [apɛl] <i>appelle</i> | [apəle] <i>appeler</i> |
| Pol + Cz vowel length | V | VV | VV | cf. detail | cf. detail |
| Czech vowel length | VV | V | V | žáb-a | žab, žak-ek, žab- o k-a |
| French ATR | +ATR | -ATR | -ATR | [fet] <i>fête</i> | [fete] <i>fêter</i> |

detail of "Pol + Cz vowel length"

| | V | VV | | |
|------------|---------|----------|--------|--|
| Polish o-ó | [ɔ] | [u] | krow-a | krów, krów-ek, krów- o k-a |
| Czech o-ů | [ɔ] | [uu] | nož-e | nůž, nůž- o k-y, nůž-ek |
| Polish ą-ę | ą (> e) | ąą (> a) | zęb-a | ząb, ząb-ek, ząb- o k-a |

(23) hence, if the recurrence of the yer context is not accidental, i.e. if the same phonological principle controls all of its instances

a. **Eastern lateral solution** (built in complete disregard of Government Phonology) in case the East is right, there must be yers in French:

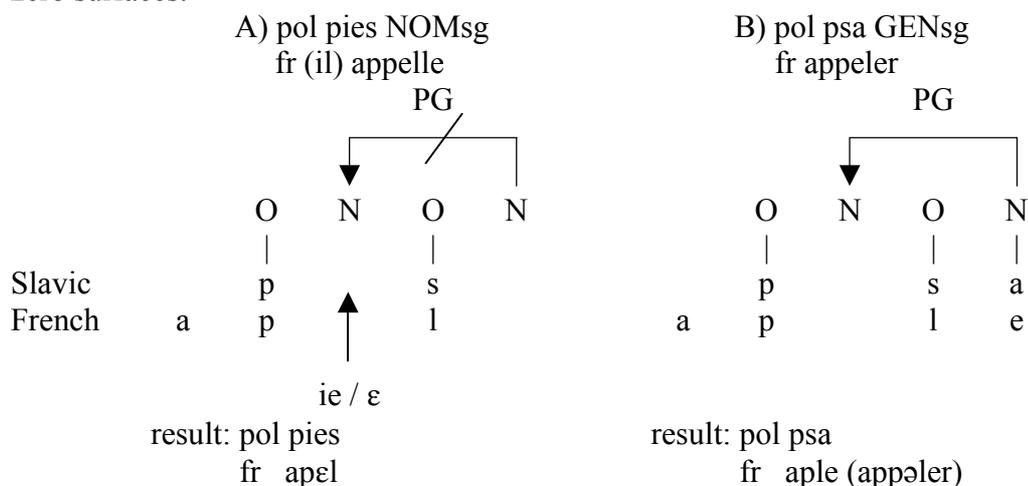
/pɛrɛ̯du, appelɛ̯rai, appelɛ̯/

absurd? Not if they are considered as "abstract vowels", i.e. empty Nuclei.

b. recall the distribution of empty Nuclei in Government Phonology:

- in locations where a vowel alternates with zero
- after word-final consonants

Structure Preservation and the ban on resyllabification enforce a view whereby the syllabic identity of vowels that alternate with zero is an empty Nucleus even when the zero surfaces:



- c. 1. the equation "abstract vowels" = empty Nuclei was already made by Spencer (1986).
2. but Spencer denies the lateral internuclear causality, and hence dismisses the very essence of Lower Government Phonology gives a name to the lateral relation that holds among yers = empty Nuclei: Proper Government.
3. Spencer's and Szpyra's analyses cannot be extended to cases where the yer context governs alternations of full vowels (length or ATR).
- d. **the Western vertical solution**
fails to recognize the following fundamental fact: the vowels which trigger the process in preceding open syllables are not arbitrarily chosen, but possess a very peculiar and **non-melodic** property: they alternate with zero.
If, say, [a], [u] or any other non-alternating vowel were observed to have this function, the Coda Capture rule would simply state
"an Onset is resyllabified as the Coda of the preceding syllable if the next vowel is [a], [u] etc."
Under Coda Capture, the alternating property of the triggering vowel is pure accident.

VI. There are two kinds of vowel-zero alternations in nature

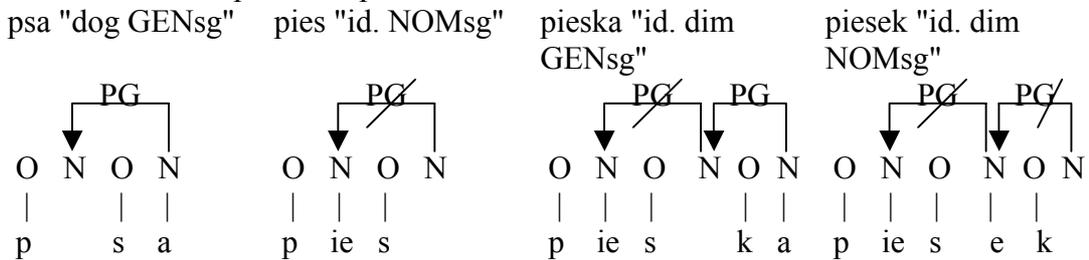
- (24) Modern Slavic vs. the rest of the world
- a. Slavic: alternation sites are vocalised before vowels that alternate with zero.
Elsewhere in the world: alternation sites are not vocalised before vowels that alternate with zero.
 - b. in other words: given a sequence of alternation sites
Lower (Modern Slavic) = all alternation sites but the last one are vocalised.
Havlík (everywhere else) = counting from the right edge, every other alternation site is vocalised (Havlíkovo pravidlo, Havlík 1889).
 - c. Proper Government derives Havlík, not Lower.

(25) illustration: "ə" = vowel that alternates with zero

| | all systems behave alike here | | | this is where the parametric variation lies | |
|-----------------|-------------------------------|-----------------------------------|-----------------------------------|---|---|
| | in open syllables | in closed syllables | | before alternating vowels | |
| | zero | vowel | vowel | vowel | zero |
| | C__C-V | C__C-ə | C__C-CV | C__Cə | C__Cə |
| Havlík | | | | | |
| Moroccan Arabic | kit ə b-u | k ə t ɪ b- ə | k ɪ t ɪ b- ə | | k ə t ɪ b- ə |
| German | inn ə r- ə | inn ə r- ə | inn ə r-lich | | inn ə r- ə s |
| French | je tə montre | | | | je tə le montre j ə te le montre |
| Old Polish | p ə s-a | pie s - ə | pie s -k-a | | p ə s-ek |
| Old Czech | dom- ə k-u | dom-ek- ə | dom- eč - ə k-u | | dom- ə č-ek |
| | | | ↓ | | |
| Lower | | | | | |
| Modern Slavic | | | | | |
| Polish | p ə s-a | pie s - ə | pie s -k-a | | pie s -ek |
| Czech | dom- ə k-u | dom-ek- ə | dom- eč - ə k-u | | dome č -ek |

(26) this must be accounted for by a parameter. Theory must not treat both patterns as unrelated.

- the parameter concerns the behaviour of alternation sites in presence of a following alternating vowel.
- translation into the terms of Government: in the Modern Slavic pattern, alternating vowels do not dispense Proper Government



c. Hence: parameterised lateral actorship for different basic nuclear objects

| | can govern | Modern Slavic | French, German etc. |
|-----------------------|---------------|---------------|---------------------|
| full Nuclei | yes | | |
| schwa | parameterized | no | yes |
| final empty Nuclei | parameterized | | |
| internal empty Nuclei | no | | |

VII. Self-contradictory evidence ?

- (27) empty Nuclei (yers) sometimes provoke strong, at other times weak alternants in the preceding syllable

| | strong alternant / __Cyer | weak alternant / __Cyer | example |
|---|---------------------------------|-------------------------------|---|
| a. Slavic vowel-zero | vowel | | dom-ek, dom-eč-ek, dom-eč-øk-u vs. dom-øk-u |
| b. French schwa - [ɛ] | [ɛ] | | [apɛl] appelle vs. [apəle] appeler |
| c. Western Slavic o > oo / __C _{+voice} # | VV | | Polish a-ę, cz/pol [ɔ]-[u(u)], e.g. krów, krów-ek, krów-øk-a vs. krow-a, |
| d. Czech vowel length | | V | žab, žak-ek, žab-øk-a vs. žáb-a |
| e. French ATR | | -ATR | [fet] fête vs. [fete] fêter |

- (28) There are two lateral forces in nature

- a. all contextual parameters being exactly identical, how can we conceive of opposite results ?

there is no solution to this puzzle unless it is accepted that the yer context does not represent one, but two empirical patterns.

- b. for independent reasons (lenition, cf. Ségéral & Scheer 2001, Scheer ms), a lateral force other than Proper Government is needed:

Government: inhibits the segmental expression of its target

Licensing: backs up the melodic expression of its target

Government and Licensing have the same phonotactic properties.

- c. cases under (29)a are instances of Government

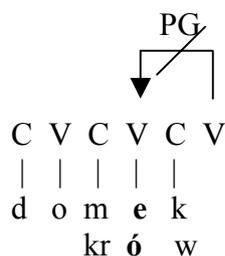
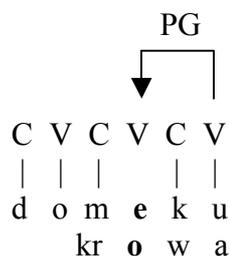
cases under (29)b are instances of Licensing

- d. at first sight, French schwa - [ɛ] appears to line up with Slavic vowel-zero and Western Slavic o-oo. But in fact it belongs to the group of Czech V-VV and French ATR. This is because of the fact that schwa can license and govern in French (it triggers vowel-zero alternations). Given this further complication, French schwa - [ɛ] is left unmentioned in the following table.

- (29) a. instances of Government

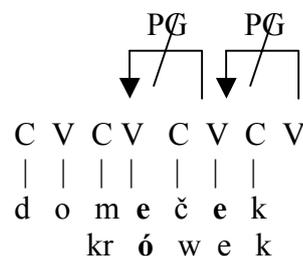
Slavic V-ø: dom-øk-u GENsg dom-ek NOMsg

West. Sl. o-oo: krowa NOMsg krów GENpl



dom-eč-ek adjective

krów-ek dim GENpl



b. instances of Licensing

Slavic V-VV: *žáb-a* NOMsg

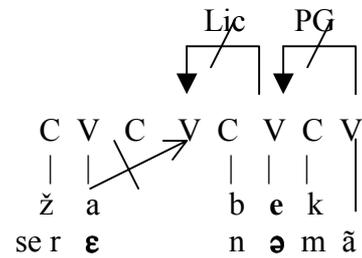
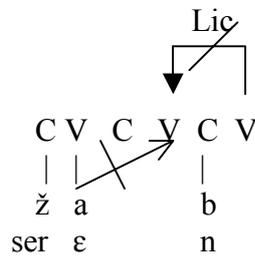
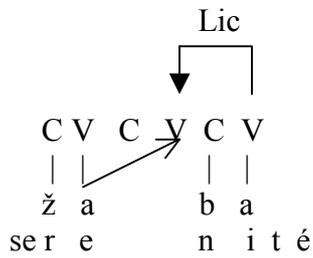
French [e]-[ɛ]: *sérénité* noun

žab GENpl

sereine adj. fem

žabek dim GENpl

sereinement adverb



- (30) parameterised lateral actorship of schwa
(where schwa = "vowel that alternates with zero")

| | govern | license |
|---------------------------|--------|---------|
| modern Slavic | no | no |
| French, German and Havlík | yes | no |

- (31) basic nuclear objects and their lateral actorship

| | can govern | can license |
|-----------------------|--------------|--------------|
| full Nuclei | yes | yes |
| schwa | parametrized | parametrized |
| final empty Nuclei | parametrized | parametrized |
| internal empty Nuclei | no | no |

VIII. Conclusion

- (32) conclusion
- a. the West was wrong: the closed syllable is a mirage.
 - b. the West was right: schwas are empty Nuclei.
 - c. the East was wrong: Lower (vowel-zero alternations) is but a particular instantiation of a more general regularity: the yer context.
 - d. parameterising the lateral actorship of basic nuclear categories allows for
 1. doing away with the yer-disjunction.
 2. eliminating serialism from the Eastern analysis.
 3. providing a unified solution for an empirical object that has been treated independently by
 1. Slavicists
 2. phonologists of French
 3. people doing Government Phonology
 Significantly, all these approaches were contemporary: Gussmann (1980), Rubach (1984), Anderson (1982), Spencer (1986), Kaye et al. (1985,1990).
 4. proposing a unified theory of vowel-zero alternations.
 - e. a contribution to the recent history of phonology (80s): people have worked on the same empirical object (the yer context) without knowing about each other (Slavicists, phonologists working on French). They have come up with identical solutions (the existence and distribution of "abstract vowels") without building on the data and insights of each other (Slavicists and Government Phonology).

Appendix: detail of the pattern (8)a: Czech žába - žab - žabka

The paradigms where Closed Syllable Shortening is found in Czech are neuter -o and feminine -a. Table (33)a provides my personal count of roots that instantiate this pattern on the side of fem -a. Roots under (33)b refuse to shorten.

[See Scheer (2001a,b) for detailed data concerning the -o declension, where all numbers mentioned in the tables below are fleshed out by the actual examples that they represent.]

Hence, Closed Syllable Shortening can certainly not be said to be synchronically active in Czech. It represents a vestige of a former state of the language, which, again, is not less real because it has existed some time ago.

- (33) long roots + -ka: Closed Syllable Shortening

| alter- | | shortening in #, _CCV | | | |
|--------|-------|-----------------------|-------|--------|----|
| nation | noun | -ka | GENpl | -CV | nb |
| ý-y | skýva | skyvka | | | 1 |
| í-i | žíla | žilka | žil | žilní | 10 |
| á-a | skála | skalka | skal | skalní | 13 |
| ou-u | bouda | budka | bud | | 7 |
| | | | | | 31 |

| alter- nation | no shortening in __#, CCV | | | | |
|------------------|------------------------------|----------|--------|---------|----|
| | noun | -ka | GENpl | -CV | nb |
| ý-y | dýha | dýžka | dýh | | 5 |
| í-i | bříza | břízka | bříz | | 12 |
| é-e | bariéra | bariérka | bariér | | 3 |
| á-a | fasáda | fasádka | fasád | fasádní | 17 |
| ó-o | sezóna | sezónka | sezón | sezónní | 1 |
| ou-u | prouha | proužka | prouh | | 9 |
| ů-o | půda | půdka | půd | půdní | 5 |
| | | | | | 52 |

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