

## Empty spaces. Representational means of reflecting non-cyclic affixation

A well-known property of English affixes is their division into cyclic (Class 1, or cohering) and non-cyclic (Class 2, or non-cohering) morphemes. Another property of English is the obligatory POA agreement in nasal + plosive sequences, which holds for all morpheme-internal contexts, and for all sequences formed across a cyclic boundary. At Class 2 boundaries and at word boundaries, this agreement is non-obligatory, and its optionality can be treated as phonetically-cued POA assimilation. This distinction is exemplified in (1). Crucially, [np] or [ng] are not attested in contexts exemplified in (1a).

Similarly, although perhaps this not the most known property of the language, Polish exhibits domino effect of consonant palatalisation (at least for coronal fricatives). This is shown in (2), where [sp] and [ɛpʲ] are both contained within the root. The fricative in question behaves as if it were directly palatalised by the close front vowel, and [s] → [ɛ]/[i] is an exemplification of a well-known principle (or rule) of Polish palatalisation (see, for instance, Gussmann 1980 or Rubach 1984). In the case of [s], the domino effect is obligatory in morpheme-internal contexts and at stem-suffix boundaries, which are of the cohering type in Polish, as shown in (3). (The examples in (3) and (4) show that this effect is not caused by any transparency of [p] alone, as [n] alternating with [ɲ] and [w] alternating with [ɰ] have the same effect on [s] → [ɛ] and [z] → [ʒ], in that order.) Interestingly, this effect is not attested if [s] and [p] are separated by a prefix-root boundary or a word boundary, as shown in (5) and (6), respectively. If both consonants in the context CC[i] were coronal fricatives, the effect would be subject to variation. Examples in (7) and (8) show coronal fricatives separated by a root-prefix and by a word boundary, respectively. The data show that the prefix boundary in Polish can be treated as non-cohering.

The dividing line is clear. Morpheme-internally and at Class 1 boundaries, a morphophonemic structure exists, whose phonetic interpretation can only conform to the POA-sharing requirement in English or to a domino palatalisation effect in Polish. At Class 2 boundaries, and at word breaks, such a structure is not formed, so that the phonetic interpretation of what is found in the representation (or representations) is open to variation, while this variation is absent from morpheme-internal and Class 1 boundary contexts. This presupposes that phonology comprises two components, a suggestion present since the days of the Prague School, which in the generative tradition has only successfully surfaced in the theory of Lexical Phonology.

The idea of structures present in a representation presupposes there is a way of distinguishing between a properly-formed sequence of segments, and something that is not such a sequence, and yet it is phonetically interpretable. In a classic linear or non-linear approach, be it monostratal (like *SPE*) or multistratal (like Lexical Phonology), this distinction cannot be captured in an intuitive way. In *SPE*, a boundary marker might trigger a POA assimilation rule, but could not

block such a rule. In this way, *SPE* could not explain the pairing of Class 1 contexts with morpheme-internal contexts, no matter what markers, if any, were used to signal the presence of a morpheme of a given class. In Lexical Phonology, non-cyclic morphemes might be concatenated after all cyclic morphemes have been concatenated, as postulated in Booij — Rubach (1984) (with evidence from Polish), or between two cyclic strata, as found in Halle — Mohanan (1985) (with evidence from English). This forces a strict interdependence of morphology and phonology in terms of the order in which given morphemes can be combined with one another. If a modular perspective is adopted, where morphology is the domain of syntax, and phonology is a separate module, the lexical component of LP becomes a supermodule, whose multistratal bidirectional morphology–phonology interaction is not warranted by data. There is no hard evidence that the number of ways in which morphemes interact is higher than two. What is attested is that adjacent phonological exponents of morphemes either interact in the relevant sense or they do not. This slashes the Halle — Mohanan architecture for English. What is also attested is that prefixes in Polish are semantically, and thus morphologically, closer to roots than inflectional affixes are. This slashes the Booij — Rubach architecture for Polish.

The present proposal is to retain a split-component architecture like the one used in LP, where the word level and the phrase level in phonology are handled by separate components, but to allow for a representational (or rule-free), and yet non-diacritic means of performing Class 2 (non-cyclic, non-cohering) concatenation at the word level. This can be done if the representational machinery used is neither a linear string of feature bundles nor autosegments attached to x-slots alone. Rather, the present paper postulates that Government Phonology-based CVCV (Scheer 2004 et seq.) is used at the word level. Its lexically-stored syllabic space, consisting of strictly alternating C and V slots, makes it possible to represent a Class 2 boundary (and possibly a word boundary, if desired) as a break in melodic continuity, where an empty CV unit—this means an onset and an adjacent nucleus with no melody, an object known in Government Phonology since Lowenstamm (1996)—separates the phonological exponents of adjacent non-cohering morphemes at the word level. The optional assimilation of English nasal + plosive sequences or Polish coronal fricatives is only effected at the phrasal level—this level of description is found in LP, but the split-component architecture has been avoided in mainstream GP so far—where the pairing of the Class 2 and the word break contexts has the same representational trigger, viz. the break in melodic continuity.

It will be shown that this solution has the advantage of making it phonologically irrelevant in which order the root is flanked by affixes. No longer do Class 2 morphemes need to be concatenated after Class 1 morphemes, and no longer does the word level require two (Booij — Rubach) or more (Halle — Mohanan) levels or strata to handle all morpheme concatenation.

Examples:

- (1)
- (1a) *anger* [ŋg]  
*im-possible* [mp]
- (1b) *un-productive* [np] (optionally [mp])  
*in Greece* [ŋg] (optionally [ŋg])
- (2)
- (2a) *spa-ć* [spatɕ] ‘sleep, v. (inf.)’  
*spa-t* [spaw] ‘(he) slept’  
*spal-i* [spali] ‘(they) slept’
- (2b) *śpi-ę* [ɕpi(j)ɛ] ~ [ɕpi(j)ɛ̃w̃] ‘(I) sleep’  
*śpi-sz* [ɕpi] ‘(you (sg.)) sleep’  
*śpi-j* [ɕpij] ‘(sg.imperat.)’  
*śpi-a* [ɕpi(j)ɔ̃w̃] ‘(they) sleep’
- (3) *ros-n-ać* [rɔsnɔ̃wtɕ] ‘grow, v. (inf.)’  
*ros-n-ę* [rɔsnɛ] ‘(I) grow’  
*roś-n-ij* [rɔɕnij] ‘grow (sg.imperat.)’
- (4) *zł-y* [zwi] ‘bad, masc.nom.sg.’  
*zł-i* [zli] ‘bad, masc.nom.pl’
- (5) *s-pi-ć* [spitɕ] ‘make (sb.) drunk (inf.)’  
*s-pij-a-ć* [spijatɕ] ‘(imperf.inf.)’  
*s-pij* [spij] ‘(sg.imperat.)’
- (6) *nos Pinokia* [nɔs piɲɔca] ‘Pinocchio’s nose’, never \*[nɔɛ piɲɔca] in standard spoken Polish  
*noś Pinokia* [nɔɛ piɲɔca] ‘carry Pinocchio’
- (7) *ś-cier-ać* [stɛɛratɕ] ~ [tɛɛɛratɕ] ‘rub out (iter.inf.)’
- (8) *pies ciotki* [pi(j)ɛs tɔtci] ~ [pi(j)ɛɛ tɔtci] ‘aunt’s dog’

References:

- Booij, Geert E. — Jerzy Rubach. 1984. Morphological and Prosodic Domains in Lexical Phonology. *Phonology Yearbook* 1: 1–27.
- Chomsky, Noam — Morris Halle. 1968. *The Sound Pattern of English*. New York: Harper & Row. [Reprinted 1991, Cambridge, MA: The MIT Press.] [=SPE].
- Durand, Jacques — Bernard Laks (eds.). 1996. *Current Trends in Phonology. Models and Methods*. Salford, Manchester: ESRI.
- Gussmann, Edmund. 1980. *Studies in Abstract Phonology*. Cambridge, MA: The MIT Press.
- Halle, Morris — K. P. Mohanan. 1985. Segmental Phonology of Modern English. *Linguistic Inquiry* 16, 1: 57–116
- Lowenstamm, Jean. 1996. CV as the Only Syllable Type. In: Durand — Laks (eds.): 419–441.
- Rubach, Jerzy. 1984. *Cyclic and Lexical Phonology. The Structure of Polish*. Dordrecht: Foris.
- Scheer, Tobias. 2004. *A Lateral Theory of Phonology. What is CVCV, and why should it be?* [Volume 1] Berlin: Mouton de Gruyter.
- SPE → Chomsky — Halle. 1968.