

What final empty Nuclei are good for

A genuine claim made by Government Phonology is the fact that word-final consonants belong to Onsets whose Nucleus is empty. The existence of final empty Nuclei (FEN) has been challenged in recent work by Dienes & Szigetvári (1999), Szigetvári (2000) and Polgárdi (1988, in press). This talk discusses two reasons why FEN are desirable and necessary, that is "extrasyllabicity" and the Coda-context $_\{ \#, C \}$.

As a matter of fact, Standard Government Phonology (SGP, Kaye et al. 1990) is unable to refer to the Coda-context in a uniform and non-disjunctive fashion. This is a direct consequence of the existence of FEN, which stand in place of the traditional word-final Codas. Hence, the only remaining Codas¹ occur word-internally. Accordingly, "before a heterosyllabic consonant and word-finally" translates into SGP as "belonging to Coda or to an Onset that precedes a FEN", which is a disjunctive statement.

The reason for the existence of FEN is a solid empirical record showing that in many languages, Coda-effects fail to occur in word-final position (e.g. Kaye 1990, Harris 1994, Gussmann & Harris 1998). That is, typical lenition processes that affect consonants in Codas do not apply to word-final Codas, and typical closed-syllable effects have no bearing on vowels that are followed by word-final Codas. An example for the former distribution is l-vocalisation in the evolution of French (l > w in word-internal, but not in word-final Codas), while a typical representative of the latter is closed syllable shortening in English (Kaye 1990) or Icelandic (Gussmann 2001), which occurs before internal, but not before final Codas.

The conclusion that is drawn upon this kind of evidence by all phonologists is that word-final consonants cannot belong to Codas in these languages. Since the mainstream interpretation cannot conceive of final consonants being an Onset, it declares them extrasyllabic. Extrasyllabicity supposes that syllable structure is achieved through some syllabification algorithm, and also that extrasyllabic items are reintegrated into the prosodic structure at "some later derivational stage". This is the reason why nothing of that kind may exist in Government Phonology: strings are fully syllabified in the lexicon, and there is no serialism. Hence, if word-final consonants are no Codas, they must belong to Onsets, which in turn supposes the existence of a following empty Nucleus.

This move, however, dismisses the very simple fact that there are many segmental processes that affect both internal and final Codas alike, and both internal and final closed syllables alike. For instance, the same processes mentioned earlier, l-vocalisation and closed syllable shortening, are very often observed in both Codas (e.g. Brazilian Portuguese) and both closed syllables (e.g. Czech, Turkish). In other words, the substantial corpus regarding $_\{ C \} \{ \#, C \}$ that has been produced during the 70s and early 80s does not lose any of its relevance because Government Phonology has introduced evidence that puts final Codas off-side. It looks like phonological theory is called to be able to eat its cake and have it. Since the early 80s, the evidence reviewed was taken as a typical motivation for extrasyllabicity. In order to cover the entire picture, the conventional account simply sets a parameter "extrasyllabicity ON" (= the word-final location does not react) vs. "extrasyllabicity OFF" (= the word-final location does react).

The empirical situation obviously calls for a parameter setting: there are languages that do count word-final consonants as Codas, while others do not. Significantly, there is no language that reverses the status of both Codas: there is no case on record where consonants would be affected in final, but not in internal Codas, and no closed syllable effect is ever produced on a vowel in word-final position to the exclusion of the word-internal location. This is strong evidence for the exceptional status of word-final consonants (they may or may not count as Codas), as opposed to internal Codas that enjoy a cross-linguistically stable Coda-interpretation. The exceptional status of the right margin of the word of course does not come as a surprise, and it calls for a parameter

¹ I continue using this familiar term in its classical meaning " $_\{ \#, C \}$ " instead of "Rymal Adjunct".

related to the right margin in the fashion of extrasyllabicity.

SGP is unable to set such a parameter, and this is, I argue, a consequence of remaining areas of "vertical causality". This term subsumes interpretations whereby a contrasting syllabification is held responsible for the existence of phonological processes. It is opposed to lateral causality where a syntagmatic relation between two constituents is viewed as the trigger for segmental processes. The original research programme of Government Phonology was to establish a "syntax of phonology", i.e. reinterpreting vertical causalities in terms of lateral relationships. A typical case in point is the lateralisation of vowel-zero alternations: while conventional accounts use the closed syllable context that entirely relies on the different arboreal status of Codas and Onsets ("vowels occur before Codas, zeros before Onsets"), SGP interprets the same distribution as a consequence of a lateral internuclear relation ("vowels occur iff they do not communicate with the following Nucleus, zeros are observed if this relation is established"). However, the lateralisation of phonological causalities has gone out of breath half way: in SGP, the reason for closed syllable shortness (in internal location) and lenition in (internal) Codas is nothing else than the presence of a Coda. Hence a vertical, not a lateral interpretation of the facts.

This is the reason why SGP is unable to formulate a parameter concerning the final location: supposing that Coda-effects (on either the Coda itself or the preceding vowel) are due to a contrasting status in syllabic arborescence (Coda vs. Onset), word-final consonants would have to be interpreted as Onsets in one type of language, but as Codas in the other. This, of course, is not a possible option.

If Government Phonology wants to achieve the same empirical coverage as conventional extrasyllabic accounts, I contend, it needs to eliminate the remaining islands of non-lateral causality: no phonological process is ever due to a contrast in syllabification. Only lateral relations among segments or constituents are responsible for alternations. A step on this way has been made by Harris (1994,1997) who sets out to eliminate vertical causality. However, he sticks to vertical arboreal structure. For the reasons shown, this cannot solve the problem addressed here. I submit that only systems where both structure and causality are entirely non-vertical allow for an appropriate solution.

The syllabic model known as CVCV (absence of Codas and branching constituents, Lowenstamm 1996, Scheer 1999) fulfills this condition. Under this analysis, the identity of consonants that occur in the Coda-context $_ \{ \#, C \}$ enjoys a non-disjunctive and purely lateral definition: they occur before a governed empty Nucleus. In the Coda Mirror (Ségéral & Scheer 2001), lenition in Codas is also interpreted as a consequence of a lateral relation: Coda-consonants are both ungoverned and unlicensed because their Nucleus is empty and hence disqualified for lateral action. However, it is an established fact² that internal and final empty Nuclei possess a different lateral potential: internal empty Nuclei can be laterally active under no circumstance and in no language, while FEN can do "more" than their internal peers (but "less" than full vowels). Given these premises, a very simple parameter can be set in order to cover the empirical situation encountered word-finally: FEN can or cannot dispense Licensing. If they do not, both internal and final Codas will behave alike (vowel length in "closed-syllable shortening" systems is also a consequence of (internuclear) Licensing). If they do, damage/ short vowels will be observed word-internally, while word-final consonants and their preceding vowels are protected through Licensing and thus will not show any damage/ may be long.

In sum, this talk intends to: 1) expurgate the inability of SGP to reduce the Coda-context $_ \{ \#, C \}$ to a non-disjunctive statement, 2) achieve the lateralisation of both phonological structure and causality, 3) provide an account for the word-final situation that does away with extrasyllabicity, and 4) show the crucial functional load that is assumed by final empty Nuclei. I submit that their existence is a condition on an appropriate approach to "extrasyllabicity".

² For example, SGP has to assume that the FEN in a word such as *parc* = /parkø/ is able to government-license its Onset. By contrast, word-internal empty Nuclei can never act as government-licensors.

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