

Word-final onsets: the evidence from suffix allomorphy

Renate Raffelsiefen & Sandra Hansen, IDS Mannheim

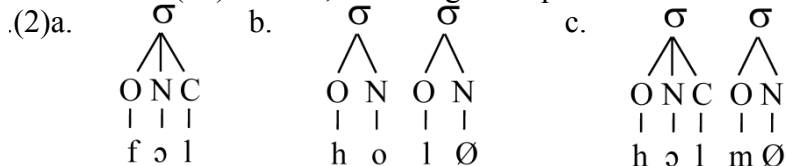
Some languages exhibit phonotactic restrictions holding everywhere except for at the right edge of words. Analyses of this pattern refer either to the prominence of the word-end (e.g. positional faithfulness (Broselow 2003, Krämer 2003), perceptual cue approaches (Steriade 1999, Henke, Kaisse, & Wright 2012) or to prosodic representation, such that the final consonant(s) must not associate with the coda. One variant of the latter approach assumes final consonants as the onsets of catalectic syllables, which contain an empty nucleus (Kaye, Lowenstam and Vergnaud 1990). Evidence for such representations would be significant in that it supports the view that phonotactic restrictions have their source in abstract prosodic structure. Here we will present evidence from suffix allomorphy for the assumption of catalexis in German and English, with the provision that catalectic syllables are posited only when necessary to satisfy constraints also satisfied in non-final positions. Evidence for an affinity between vowel-initial allomorphs and words ending in empty nuclei would indicate satisfaction of syllable structure correspondence constraints, which presuppose the presence of the relevant syllable organization at the lexical level.

1. Restricted catalexis

The data in (1a) show the restriction to lax vowels in closed syllables in English and German. Tense vowels or diphthongs are disallowed in such syllables and so are final consonant clusters. In both languages, these restrictions appear to be lifted in word-final position (1b).

(1)	a.	Lack of potential contrast	b.	Contrast at the right edge
	English:	s/ɪl/ver, *s/il/ver, *s/ɛil/ver, *s/Iɪm/ver 'silver'		/ɪl/ : /il/ : /ɛil/ : /ɛɪlm/ 'ill' 'eel' 'ale' 'elm'
	German:	W/ɔl/ke, *W/ol/ke, *W/ɔlm/ke 'cloud'		f/ɔl/ : h/ol/ : h/ɔlm/ 'full' 'hollow' 'holm'

The restrictions in (1a) reflect markedness constraints against certain complex syllable structures (No tense vowels in closed syllables, No complex codas). These constraints are satisfied in (1b) as well, assuming the representations with final onsets shown in (2).



The differentiation between the regular coda association of final consonants after lax vowels in (2a), as opposed to the onset association after tense vowel or consonant in (2b,c) is captured by the grammar in (3). A constraint requiring faithfulness to segmental input structure is sandwiched between "*COMP" (the relevant markedness constraints against complex syllable structure mentioned above) and the markedness constraint *N/Ø, which prohibits empty nuclei. The restriction to the word edge indicates high-ranking CONTIGUITY. PARSE-SYL enforces the association of the last consonant with coda or onset, as opposed to no association or organization as an appendix (Kager 1999).

(3) CONTIGUITY, PARSE-SYL, *COMP >> FAITHFULNESS >> *N/Ø

2. /əs/-/s/-allomorphy in German genitive suffixes.

A possible consequence of a distinction between words ending in an empty nucleus as in (2b,c) and others concerns the distribution of allomorphs. A higher rate of occurrence of vowel-initial suffixes with words of type (2b,c), as opposed to type (2a), would support the relevant representations, as the effect would follow from correspondence constraints on syllable structure. German genitives were chosen to test the relevant distributions because of the (mostly free) variation, also reflected in writing, between a vowel-initial and a

consonantal allomorph, i.e. /əs/ ‘-es’, vs. /s/ ‘-s’. The study is based on a subcorpus of genitive forms consisting of 7,334,500 tokens, which was extracted from DeReKo (<http://www.ids-mannheim.de/DeReKo/>) (cf. Schneider et al. forthcoming). That subcorpus also contains phonetic information such as vowel tenseness as a result of incorporating CELEX data. Stems ending in /s/, /z/, /ʃ/ and /ʒ/ have been omitted. The absolute frequencies of the relevant words given in (4) show a clear preference for genitives ending in *-es* over those ending in only *-s* for all classes, but the preference is significantly lower for words of type (2a). The numbers in the shaded areas indicate the respective fractions of words ending in *-es* along with the margins of error.

(4)		2a		2b		2c	
	es	93515	$P_{es} = 0.7818$	286790	$P_{es} = 0.8454$	237675	$P_{es} = 0.8100$
	s	26093	± 0.0012	52460	± 0.0006	55753	± 0.0007

The relatively high frequency of syllabic endings in type-2c words has alternatively been explained with reference to a constraint against clusters consisting of three or more consonants (cf. Drosdowski et al 1984:234, Fehringer 2011:99). By contrast, reference to the presence versus absence of empty nuclei as in (2) makes sense of the relatively high rate of syllabic endings in both type-2c and type-2b words, compared to type-2a words. The higher rate of syllabic endings in type-2b versus type-2c words indicates that clusters may in fact inhibit syllabic endings.

The sort of differences seen in (4) can also be demonstrated for other contexts, that is, bi- or trisyllabic words with different stress patterns. These results will also be presented, along with the results of a study based on types, rather than tokens. There is also independent evidence for restricted catalexis illustrated in (2). Word-final obstruents exhibit voicing alternations in German only when they are organized as an onset of a catalectic syllable according to the grammar in (3) (e.g. *Pari[s] – Pari[z]er*, after a tense vowel), not when they are organized as a coda (e.g. *Madri[t] – Madri[t]er*, after a lax vowel). An OT-analysis of this pattern will also be presented.

3. /əd/ - Ø-allomorphy in English past tense forms.

In English, past tense forms of type-2a verbs ending in a coronal stop are often homophonous with the base form (e.g. *cut, put, knit, wed, shed, bid*). By contrast, with the single exception of the verb *beat*, the past tense forms representing the types in (2b,c) are not homophonous to the base forms. Instead, when belonging to the weak class, they exhibit the syllabic suffix /əd/ (e.g. *hunted, wasted, waited, needed, opted, shouted*). A complete overview of the relevant English data, including generalizations concerning the relevance of catalexis for the past tense formations of strong verbs, will also be presented.

Broselow, E. (2003) Marginal phonology: phonotactics on the edge. *The Linguistic Review* 20: 159-193.

Drosdowski, G. et al. (1984). *Die Grammatik*. 4. Aufl. Mannheim: Dudenverlag.

Fehringer, C. (2011): Allomorphy in the German genitive. A paradigmatic account. In: *Zeitschrift für Germanistische Linguistik* 39/1, S. 90–112.

Henke, E., E. M. Kaisse and R. Wright (2012). Is the Sonority Sequencing Principle an epiphenomenon? In Parker, S. (ed.), *The sonority controversy*. Berlin: de Gruyter Mouton, 65–100.

Kager, R. (1999) *Optimality Theory*. Cambridge University Press.

Kaye, J., J. Lowenstamm and J. Vergnaud (1990). Constituent structure and government in phonology. *Phonology* 7: 193-231.

Krämer, M. (2003). 'What is wrong with the right side? Edge (a)symmetries in phonology and morphology.' Ms. University of Ulster. (ROA 576-0203)

Schneider, R, N. Bubenhofer, S. Hansen, M. Konopka (to appear), Die Genitiv-Datenbank. <http://www.ids-mannheim.de/kogra>.

Steriade, D. (1999). Alternatives to syllable-based accounts of consonantal phonotactics. In *Proceedings of the 1998 Linguistics and Phonetics Conference*, O. Fujimura, B.D. Joseph, and B. Palek (eds.), 205-242. Prague: The Karolinum Press.

