

Segmental and Subsegmental Allomorphy in the German Noun Plural

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Problem: Plurals in the native stratum of German nouns exhibit a complex combination of phonologically unpredictable lexical classes and broad, virtually exceptionless, generalizations. Thus it is not generally predictable which plural allomorph a non-feminine noun takes (cf. *Fett* (SG) ~ *Fett*-[ə] ‘fats’ vs. *Bett* (SG) ~ *Bett*-[n] (PL) ‘bed(s)’ vs. *Brett* ~ *Brett*-[v] ‘plank(s)’) and whether a given noun exhibits umlaut (vowel fronting) in the plural or not (cf. *Sohn* (SG) ~ *Söhn*-[ə] (PL) ‘son(s)’ vs. *Trohn* (SG) ~ *Trohn*-[ə] ‘son(s)'). On the other hand, allomorph choice interacts in regular ways with umlaut (plurals with -[v] always umlaut, whereas plural -[n] is in complementary distribution with umlaut, Wunderlich 1999) and, as shown by Wiese (2009), plural forms obey a consistent prosodic template of the form $\dots(\sigma_s.\sigma_w)_{Ft}$ (a final bisyllabic trochee with a reduced weak syllable that corresponds to the maximally unmarked foot in German, e.g. *Pelz* (SG) ~ *Pel.z*[ə] (PL) ‘pelt(s)’, *Kind* (SG) ~ *Kin.d*[v] (PL) ‘child(ren)'). This combination of regular and irregular poses an analytic dilemma: If idiosyncrasy in plural forms is captured by full-form listing or selection of stem/affix allomorphs through phonologically arbitrary lexical classes, there is no way to derive the generalizations that hold across allomorphs. On the other hand, if the general shape conditions on noun plurals are derived as an Emergence-of-the-Unmarked effect (McCarthy and Prince 1994, 1995) as proposed by Wiese for the prosodic plural template, we wouldn’t expect allomorphy for noun stems that are phonologically virtually identical.

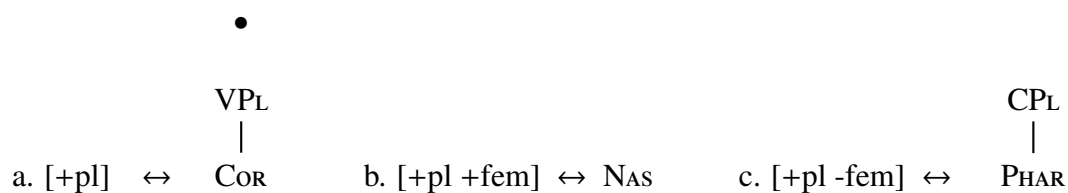
Proposal: I argue that German has just a single, but fully general plural suffix: a featurally underspecified segmental root node accompanied by a floating CORONAL feature. The root node provides phonological material, not available in other morphological contexts, that allows to satisfy general prosodic constraints. Since there is only a single underspecified plural marker it leads to the same Emergence-of-the-Unmarked effects across different nouns. Floating CORONAL may either associate to stem vowels resulting in umlaut, or combine with the underspecified affixal root node yielding affixal *-n*. The availability of only a single CORONAL specification effectively derives the complementary distribution between umlaut and plural-*n*. The root node may in turn combine with additional affixal material that is phonologically floating (markers of plural gender) to yield the full observed range of suffixal allomorphy.

Assumptions: I assume Generalized Nonlinear Affixation (Bermúdez-Otero 2012) in the form of Autosegmental Colored Containment Theory (Trommer 2011; Zimmermann and Trommer 2014), where phonological material cannot be fully deleted in the output of optimality-theoretic computation, and the only morphological information visible to phonology is morphological ‘color’, i.e. whether two phonological objects belong to the same or different morphemes. I use the classical feature geometry of Clements and Hume (1995), but adopt a slight adaptation of the system proposed in Lahiri and Evers (1991); Scharinger (2009) for VPLACE features specifying backness: front vowels are specified as CORONAL, (non-umlautable) back vowels as DORSAL, and umlautable back vowels are underspecified for VPLACE features, but become back by default insertion of DORSAL.

Analysis: The only native plural affix of German is the suffix $-\bullet$ VPLACE-CORONAL, (a fully underspecified segmental root node and a floating VPLACE-CORONAL specification, in the following: ©). © associates to the stressed vowels of umlautable (underspecified) stems, otherwise it may surface as part of the suffix. • is realized as [ə] for C-final nouns with final stress, (resulting in maximally unmarked syllable and foot structure), for nouns already ending in schwa, • is realized as [n], the unmarked coda consonant in reduced syllables, and for nouns ending in a reduced consonant-final syllable (e.g. *Anker* ‘anchor’ (SG/PL)), • undergoes fusion with the final syllable nucleus, to avoid violation of the high-ranked constraint $*\sigma_w\sigma_w$ penalizing adjacent

reduced syllables. The prediction that ə-final nouns form their plural with -n is correct without exceptions, however, most feminine nouns take -n even if they don't end in [ə] (e.g. *Angel* (SG), *Angel-n* (PL) 'fishing rod(s)', *Welt* (SG) *Welt-en* (PL) 'world(s)'). I capture this by a feminine gender and plural marker ([+fem +pl]) which is phonologically a floating [NASAL] feature that results in -n by association with • and is protected by high-ranked MAX [NAS]. Almost symmetrically, many (and only) [-fem] nouns take the [-ɐ] allomorph in the plural. I capture this by a [-fem +pl] suffix consisting of a floating PHARYNGEAL feature ((P)). That (P) always COOCCURS with umlaut follows from the fact that it does not carry with it a VPL node; its only option to integrate into • is by usurping the VPL node of (C) which is only available if the affixal CORONAL feature has reassociated to the stressed stem vowel (hence triggers umlaut). (1) summarizes all assumed affixes:

(1) **German Plural (+gender) Affixes**



Truly exceptional nouns such as *Held* (SG) ~ *Hel.d*[ŋ] (PL) 'hero(es) (masc.)' which surfaces with the -[ŋ] allomorph although it is neither feminine nor ends in [ə] bear also floating features, in this case [nasal] that results in -n and - by combination with plural-•. Independent evidence for this assumption is provided by the fact that the major class of nouns that take exceptional plural-[ŋ] also exhibit exceptional [ŋ] in non-nominative singular forms (cf. *dem Hel.d*[ŋ] 'hero' (DAT.SG.) vs. *dem Geld-Ø* 'money' (DAT.SG.)).

References

Bermúdez-Otero, R. (2012). The architecture of grammar and the division of labour in exponence. In Trommer, J., editor, *The Morphology and Phonology of Exponence*, pages 8–83. Oxford University Press, Oxford.

Clements, G. N. and Hume, E. (1995). The internal organization of speech sounds. In Goldsmith, J., editor, *The Handbook of Phonological Theory*, pages 245–306. Cambridge: Blackwell.

Lahiri, A. and Evers, V. (1991). Palatalization and coronality. In Paradis, C. and Prunet, J.-F., editors, *The Special Status of Coronals: Internal and External Evidence*, pages 79–100. Academic Press, San Diego.

McCarthy, J. and Prince, A. (1994). The emergence of the unmarked: Optimality in prosodic morphology. In González, M., editor, *NELS 24*, pages 333–379. Amherst.

McCarthy, J. and Prince, A. (1995). Faithfulness and reduplicative identity. *University of Massachusetts Occasional Papers in Linguistics*, 18:249–384.

Scharinger, M. (2009). Minimal representations of alternating vowels. *Lingua*, 119:1414–1425.

Trommer, J. (2011). Phonological aspects of Western Nilotic mutation morphology. Habilitation Thesis, University of Leipzig.

Wiese, R. (2009). The grammar and typology of plural noun inflection in varieties of German. *Journal of Comparative Germanic Linguistics*, 12(2):137–173.

Wunderlich, D. (1999). German noun plural reconsidered. *Behavioral and Brain Sciences*, 22(6):1044–1045.

Zimmermann, E. and Trommer, J. (2014). The linearization of morphological weight. In Heck, F. and Assmann, A., editors, *Rule Interaction in Grammar Linguistische Arbeits Berichte 90*, pages 123–161.