

Dual attachment of affixes: phonology, locality, or (base-driven) stratification?

Pavel Iosad
pavel.iosad@ed.ac.uk

Itamar Kastner
itamar.kastner@ed.ac.uk
University of Edinburgh

Anna Laoide-Kemp
anna@laoidekemp.net

In this paper we highlight the importance of a hitherto underappreciated source of evidence relevant to adjudicating between competing approaches to morphophonological locality and opacity effects. Our empirical focus is on *dual-attaching affixes* (sometimes called *chameleon affixes*). These are cases where apparently similar or identical morphemes differ in morphophonological behaviour in ways that signal differences in stratal affiliation. In principle, we envisage that such mismatches may have (at least) three different accounts: differences in the morphemes' phonological representation; independently established morphosyntactic differences; or a non-trivial 'grammar of stratification' mapping between morphosyntactic and phonological domains in potentially lexically specific ways. In this paper, we consider several cases that are challenging to account for in a purely phonological or purely morphosyntactic manner.

A typical example of the pattern comes from the 'umlaut' (*przegłos*) alternation of Polish, whereby a back vowel (either [a] or [ɔ], lexically determined) alternates with front [ɛ]. Not all morphemes alternate, but in those that do, the front vowel occurs before a palatal(ized) consonant, including those whose palatalization is derived from a following suffix.

- (1) Back context *miasto* [mʲastɔ] 'city-NOM' *anioł* [aɲɔw] 'angel-NOM'
Front context *mieście* [mʲɛɕtɕɛ-ɛ] 'city-LOC' *aniele* [aɲɛl-ɛ] 'angel-LOC'

The alternation meets many diagnostics of the stem-level syndrome (Kaisse & McMahon 2011). In particular, it shows a classic pattern of stratally determined opacity: a surface-unmotivated back vowel can occur before consonants palatalized by inflectional suffixes, but the expected front vowel surfaces in the same root in plausible stem-level constructs, such as relatively unproductive derivatives or part-of-speech-changing derivations:

- (2) Back *piana* [pʲan-a] 'foam-NOM' *brzoza* [bzɔz-a] 'birch-NOM'
WL front *pianie* [pʲan-ɛ] 'foam-LOC' *brzozie* [bzɔz-ɛ] 'birch-LOC'
SL front *pienisty* [pʲɛɲ-istɨ] 'foamy' *brzezina* [bzɛz-ina] 'birchwood'

The pattern of opacity in (2) is straightforwardly amenable to a stratal/cyclic account if the LOC forms are treated as word-level constructs: $[[[pʲan]_{\mathcal{SL}}-iɛ]_{\mathcal{WL}}]$ but $[[[pʲɛɲ-ist]_{\mathcal{SL}}-i]_{\mathcal{WL}}]$. If so, however, the alternations in (1) must be treated as exceptionally undergoing stem-level phonology: $[[[aɲɛl-iɛ]_{\mathcal{SL}}]_{\mathcal{WL}}]$ 'angel-LOC' like $[[[aɲɛl-isk]_{\mathcal{SL}}-i]_{\mathcal{WL}}]$ 'angelic'.

This behaviour of the palatalizing LOC suffix is reminiscent of 'dual class membership' of affixes such as English *-able* (*compárable* vs. *cómparable*) or *-ize* (normally SL, but WL in forms like *tenderize*), a key motivation for the hypothesis of Base-Driven Stratification (Giegerich 1999, Bermúdez-Otero 2018). The exceptionality of (1), in this case, is formalized in terms of the inflectional suffix attaching directly to the root and thus triggering a stem-level cycle: $[[[\sqrt{mʲɛst-iɛ}]_{\mathcal{SL}}]_{\mathcal{WL}}]$.

Such behaviour has been amply treated in the literature with reference to the distinction between stem-level and word-level derivation. Dual attachment patterns in inflection are less well attested, although Bermúdez-Otero (2012), Kiparsky (2020) discuss (different) examples from English. We provide examples from Slavic varieties, Irish, and Icelandic. The evidence from these languages is especially useful given their richer inflectional systems.

Diacritic accounts of the exceptionality patterns, such as Gussmann's (2007) 'lexical indices' for Polish, can be rejected on grounds of modularity. The Inalterability as Prespecification (Inkelas & Cho 1993) framework, as practised in Logical Phonology (Bale & Reiss 2018), offers a principled phonological account: non-alternating nouns like *piana* and *brzoza* in (2) contain fully specified

vowels, whilst alternating ones like *miasto* in (1) are underspecified for [BACK]. A unification rule $[-HI] \sqcup [-BK]$ yields $[\varepsilon]$ in appropriate contexts. However, this approach counterfactually predicts that a given root resists the umlaut alternation in all morphological contexts; such a phonological analysis, therefore, must be at least supplemented.

The other alternative we consider is deriving differences in morphophonological stratification patterns ‘for free’ from morphosyntactic structure. Proposals to similar effect can be found in the literature. One example is De Belder, Faust & Lampitelli’s (2014) account of ‘high’ and ‘low’ diminutives in Italian and Hebrew, which differ markedly in morphosyntactic behaviour. Ingason & Sigurðsson (2015) identify a consilience of morphophonological and morphosyntactic evidence in Icelandic: they show that a morphosyntactic difference between deradical and $v \rightarrow n$ agent nominals coincides with a blocking of the $\mathcal{SL}$ process of velar palatalization in the latter.

We consider whether the cases of dual-attaching inflectional affixes that we focus on easily submit to such morphosyntactic analysis. Ultimately, we suggest that the precise structure of stratal domains must allow for a degree of lexical specification. Some of our data appears to challenge the analysis of Kiparsky (2020), who treats dual attachment as a function of whether the base is stored as a stem or word; this approach is difficult to sustain when roots are generally bound. Examples of devices that are able to capture relevant differences include Grestenberger & Kastner’s (2022) Root Augmentation (framed in Distributed Morphology) or the non-trivial interface envisaged by the Stratal Phonology as set out by Bermúdez-Otero (2018). We conclude that dual attachment presents a set of fruitful criteria for theory development and comparison relevant to the morphosyntax-phonology interface.

References

- Bale, Alan & Charles Reiss. 2018. *Phonology: A formal introduction*. London & Cambridge, MA: The MIT Press.
- Bermúdez-Otero, Ricardo. 2012. The architecture of grammar and the division of labour in exponence. In Jochen Trommer (ed.), *The phonology and morphology of exponence: The state of the art* (Oxford Studies in Theoretical Linguistics 41), 8–83. Oxford: Oxford University Press.
- Bermúdez-Otero, Ricardo. 2018. Stratal phonology. In S. J. Hannahs & Anna R. K. Bosch (eds.), *The Routledge handbook of phonological theory*, 100–134. London, New York: Routledge.
- De Belder, Marijke, Noam Faust & Nicola Lampitelli. 2014. On a low and a high diminutive: Evidence from Italian and Hebrew. In Artemis Alexiadou, Hagit Borer & Florian Schäfer (eds.), *The syntax of roots and the roots of syntax*, 149–163. Oxford: Oxford University Press.
- Giegerich, Heinz J. 1999. *Lexical strata in English: Morphological causes, phonological effects* (Cambridge Studies in Linguistics 89). Cambridge: Cambridge University Press.
- Grestenberger, Laura & Itamar Kastner. 2022. Directionality in cross-categorical derivations. *Glossa: A Journal of General Linguistics* 7(1).
- Gussmann, Edmund. 2007. *The phonology of Polish*. Oxford: Oxford University Press.
- Ingason, Anton Karl & Einar Freyr Sigurðsson. 2015. Phase locality in Distributed Morphology and two types of Icelandic agent nominals. In Thuy Bui & Deniz Özyıldız (eds.), *Proceedings of the 45th Annual Meeting of the North East Linguistic Society*, 217–226. Amherst, MA: GLSA.
- Inkelas, Sharon & Young-Mee Yu Cho. 1993. Inalterability as prespecification. *Language* 69(3). 529–574.
- Kaisse, Ellen M. & April McMahon. 2011. Lexical Phonology and the lexical syndrome. In Marc van Oostendorp et al. (eds.), *The Blackwell companion to phonology*. Oxford: Blackwell Publishing.
- Kiparsky, Paul. 2020. Morphological units: Stems. In *The Oxford research encyclopedia in linguistics*.