Accounting for opacity effects at the form interface without the PIC

I. BACKGROUND: Syntactic structure is standardly taken to be transferred to the interfaces in non-trivial chunks. Contrary to traditional wisdom, recent work has claimed that spell-out does not create opacity effects, either in the syntax (Newell 2017, Bešlin 2025) or in the phonology (Embick 2014, Newell 2017, to appear). Yet, theories of the syntax-phonology interface invoke spell-out induced opacity to account for patterns of (im)possible interactions among morphemes. Cyclic spell-out (1) is augmented with (2), reminiscent of the weak Phase Impenetrability Condition (PIC, Chomsky 2001).

(1) SCHEMATIZATION OF CYCLIC DOMAINS (Embick 2014):

    a. Cyclic y merged in [y [X [Y [x √ROOT...]]]]
    b. Cyclic domain centered on x = [X [Y [x √ROOT]]] sent to interfaces

(2) ACTIVITY COROLLARY (AC, Embick 2014):

    In [[.... x] ... y], x and y cyclic, the complement of x is not active in the PF cycle in which y is spelled out.

(1)-(2) arguably account for patterns of (im)possible allomorphy, e.g. the availability of root-conditioned n-allomorphy in *marri-age* ([[ROOT]n]), but not the gerund *marry-ing* ([[[ROOT]v]n), due to the presence of cyclic v. Note, while x and the root are spelled-out in the same cycle per (1b), only the root, but not x, is inaccessible to y per (2); see Embick 2010, 2014, to appear for empirical motivation. Despite its name, (2) is stipulative; it does not follow from (1) nor any existing formalization of spell-out. Also, the consensus view is that (1)-(2) is not restrictive enough for allomorphy, with proposals to limit it to structurally or linearly adjacent elements (Adger, Béjar & Harbour 2001, Embick 2010).

II. PROPOSAL: I argue that the PIC/AC is unnecessary in accounting for locality conditions on allomorphy. Given root-outward Vocabulary Insertion (Bobaljik 2000), cyclic spell-out plays a role in limiting allomorphy in that the root in (1) cannot see y because y is not present in the cycle the root is spelled-out in. Hence, there is no n-conditioned root-allomorphy in gerunds. However, when spell-out of yP is triggered, the spell-out domain includes everything in y's domain, including the root. If there is no PIC, then y should in principle be able to see the root. Since allomorphic conditioning by a hierarchically lower element is highly constrained (indeed, n in gerunds cannot be conditioned by the root), I propose that morpho-syntactically conditioned contextual allomorphy is only available to structurally adjacent terms. This relation must be defined in featural rather than purely geometric terms (contra ABH 2001), (3); see Hornstein 2024 for a discussion (and deduction) of (3) in the domain of subcategorization/selection.

(3) In [A [... B]], A and B are structurally adjacent iff A and B are terms and the features of B are present on A's sister.

(3) permits allomorphic interactions between roots and heads of their complements (Harley 2014) and accommodates the behavior of adjuncts and root-root compounds, discussed below. It rules out allomorphic conditioning across a projecting head. By eliminating the PIC/AC, we can (i) fully eliminate the PIC from the grammar in line with recent work, and (ii) eliminate the stipulation in (1)/(2) w .r. t. when elements are spelled out vs. when they become inactive.

III. ADJUNCTS: It has gone largely unnoticed that most elements claimed to not intervene for allomorphy do not alter the syntactic category of their host phrase: They are adjuncts. Phrases with or without these elements have the same distribution; cf. vP/TP, where only TP is selected by C, only vP is selected by n in derived nominals in English, etc.

These adjuncts include the distributive (Kiowa, Bonet & Harbour 2012), negation (Kiowa, ibid, Bosnian/Croatian/Serbian (BCS), Bešlin to appear), diminutive (Basque, Bobaljik 2012), and space marker (Nez Perce, Deal 2018). Illustrating here with Nez Perce, space markers (SP) may intervene between Asp(ect) and T(ense), with the features of T triggering allomorphy on Asp (4a-b). Deal (2010, 2018) argues SPs to be functional heads because they "select for particular aspects, appear in only one location in the clause, and, like tense, are closed-class, inflectional morphemes with a basic meaning of locating events deictically in spacetime" (Deal 2018:8). However, it is frequently impossible

to iterate adjuncts of the same kind and adjuncts may also modify only certain kinds of phrases (e.g., adjectives modify nouns, adverbs—verbs). To make an argument based on selection, one would need to show that there is a distributional difference between bare AspPs and those that contain a SP. The difference does not exist in this case since they are both selected by Tense. Note also that the SP is truly optional, i.e., it can be fully absent rather than null (Deal 2010:102). I therefore propose that SPs are adjuncts, which makes T and Asp in (4c) structurally adjacent in the sense of (3).

(4) a. hi-weqi-**teetu**(-m)-∅   b. hi-waqi-**qa**(-m)-qa   c.

    3SUBJ-rain-HAB-SP-PRES   3SUBJ-rain-HAB-SP-REC.PAST

    'It rains here.'   'It used to rain here (recently).'

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            TP
          /    \
         T     ASPP
              /    \
            SPP    ASPP
                  /    \
                ASP    vP …
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Similarly, Bešlin (to appear) shows the BCS comparative may trigger allomorphy on an *a*(djective), regardless of the intervention of NEG(ation). *a*s with and without NEG appear in the same syntactic environments, which indicates that they are of the same category (*a*P). In contrast, comparison changes the *a*'s distribution: Comparative *a*s appear with *od* 'than' phrases and cannot be modified by *veoma* 'very' available with (negated) *a*s in the positive degree, instead only combining with *mnogo* 'very'. These two cases illustrate a more general pattern: Contextual allomorphy is possible across interveners, if those interveners do not disrupt the structural adjacency relation in (3).

IV. ROOT-ROOT COMPOUNDS: There is one more pattern of non-disrupting intervention reported in the literature, that of root-root (symmetric) compounds. Bešlin (to appear) shows that BCS exhibits a pattern of non-local root-conditioned *n*-allomorphy in agent nominals, across the morpheme AV(A) (5). She argues on independent grounds that AV(A) must be a root. In fact, the language provides evidence that categorizers must be able to see both roots in uncontroversial instances of root-root compounds. (6a) shows that the choice of *n*-allomorph cannot depend solely on the first root and (6b) that it cannot depend solely on the second. I take this to mean that, when two roots combine, both roots' features project to the resulting phrase, making both of them structurally adjacent to the categorizer, as in (3). I contrast this with the behavior of compounds involving categorized elements (omitted for space reasons).

(5) a. prouč-ava-telj b. prod-av-ac c. pred-av-ač (6) a. dub-o-rez-**ac** (cf. rez-**ač**) b. zemlj-o-rad-**nik** (cf. zemlj-**ak**)

    study-AV-N   sell- AV-N   lecture- AV-N   deep-L-cut-N   cut-N   earth-L-work-N   earth-N

    'examiner'   'seller'   'lecturer'   'woodcutter'   'cutter'   'farmer'   'countryman'

This analysis may extend to English verbs like *understand*. Embick 2016 argues that *understand* contains the root STAND, given its irregular past tense (*under-stood*). He claims such examples argue against a structural adjacency restriction on allomorphy, assuming without argument the structure [[UNDER [STAND]] T+PST]. If *understand* is instead a root-root compound (or if UNDER is an adjunct to STAND, as in III), such examples are fully in line with (3).

V. RAMIFICATIONS: Handling allomorphy patterns without the PIC/AC is both desirable and feasible. Allomorphy is constrained by cyclic spell-out and structural adjacency. To demonstrate genuine long-distance allomorphy, one would need to establish that the intervening head projects—most straightforwardly by showing distributional differences between phrases with and without the putative intervener. Since no convincing examples of this pattern have been documented so far, their absence lends initial support to the present proposal.

Selected references: Bešlin, M. to appear. On locality conditions for allomorphy and the ordering of interface operations. *In Proceedings of NELS 55*. ●Bešlin, M. 2025. Lexical categories, (re)categorization, and locality in (morpho)syntax. PhD thesis, University of Maryland. ●Deal, A. R. 2018. Locality in allomorphy and presyntactic bundling: A case of tense and aspect. *Snippets 34*, 8-10. ●Embick, D. to appear. Abstract morphemes and local contexts. In *Cambridge Handbook of Distributed Morphology, CUP*. ●Hornstein, N. 2024. *The Merge hypothesis: A theory of aspects of syntax*, CUP. ●Newell, H. to appear. Phases and phonology. In *Wiley-Blackwell Handbook of Phonology* (vol. 2), Wiley-Blackwell.