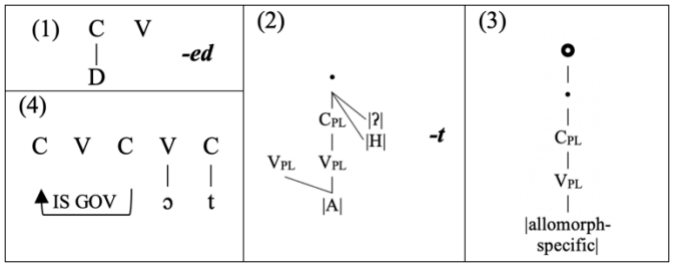
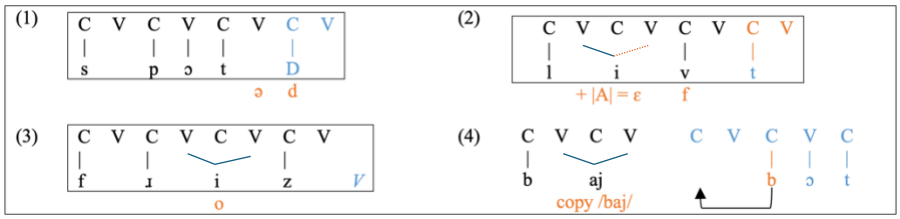
English Irregular Verbs Do Not Condition Allomorphy on T (or vice versa)

Take Home Message: An account of the English Irregular Past Tense (EIPT) (ex. *leave-left*) does not require either (A) multiple phonological levels (Halle & Mohanan 1985), (B) readjustment rules (Embick & Halle 2005, Embick & Schwayder 2018), or (C) the direct conditioning of the allomorphy of the past tense morphemes (ex. *-ed*, *t*...) by the verb root (Embick 2010). All forms are derivable in the phonology proper without V^0 and T^0 interacting directly in the syntax.

Theoretical Import: This analysis of the EIPT is important within the discussion of derivational *myopia*. The EIPT is an oft-used example of how morphemes in the vP and CP phases can *see* each other; it is proposed that the verb √ cannot undergo spell-out until after it has conditioned the allomorphy of T^0. The latter then feeds back to trigger Readjustment Rules on the root. This back-and-forth of morpho-phonological interaction isn't the norm in the regular English Past Tense *(-ed* is always in a separate phonological cycle from the root (ex. *keel-keeled*, where the final 'cluster' [ld] does not trigger V-shortening, cf. *keep-kept* (Kaye 1995)). Nor is it the norm cross-linguistically: abundant evidence shows that verbs that remain in vP are computed in an independent phonological cycle (ex. Malagasy (Mohanan 1982), Turkish, Cupeño (Newell 2008), Ojibwe (Newell 2008, Newell & Piggott 2014), Chichewa (Downing 2016), Chuckchansi Yokuts (Guekguezian 2017), etc.). If the EIPT is also derived in a truly bi-phasal system, it is further evidence that phases, and the phonological cycles they derive, are bi-directional *myopic* systems.

The analysis: This analysis is of a kind with Trommer's (2021) phonological reanalysis of German PL allomorphy, with additional implications for visibility across derivational cycles. It is also inspired by the readjustment rules proposed in Halle & Mohanan (1985), but requires no morpho-phonological information in its phonological operations. It takes insights from Merchant's (2015) span-conditioned allomorphy, and therefore avoids *Pruning* (Embick 2010). ***Allomorphy***: English verb √s are separated in the syntax from T^0 by v^0: [[[peep$_{\surd}$] $\varnothing_{v0}$]ed$_{T0}$]. In the EIPT, even though the v^0 is null, it blocks local allomorphy between √ and T^0. However, I argue that the null exponence of v^0 masks *chain-based allomorphy* in the EIPT; √ conditions (non-overt) allomorphy on v^0, which conditions allomorphy on T^0: there is therefore no morpho-syntactic requirement that the √ spell-out in the same phase as T^0, contra Embick's (2010) pruning analysis. Chain-based allomorphy is also evident in Greek (Merchant 2015) and Comparatives (Bobaljik 2012). ***Representation***: English has one regular past tense morpheme (1) and three major kinds of EIPT morphemes (2-4) (minor variations will be discussed in the talk). The UR of each morpheme is paired with an example derivation. In each derivation the verb √ is in black and has been computed in the vP phase. The UR of each allomorph is in blue, and the changes it implements are in orange. ***Crucial to this analysis is the inclusion of the autosegmental structure that is part of the UR of each affix***. The UR of (1) is syllabified, but is underspecified for voice (/D/). As it is syllabified, it does not affect the syllable structure of the √ cycle, but the √ is visible and the phonology affects the melodic tier (default voicing, schwa epenthesis;





spot-spotted). (2) is a specified /t/ with an additional V_{PLACE} node, but is not syllabified and has no timing slot in its UR: it is a floating segment. (2) therefore probes into the √ structure for an empty syllable slot. Once inside the domain of the √, not finding C-slot, it triggers re-syllabification of the entire string: V-shortening before clusters applies (*leave-left*). The segmental structure of /t/ also explains the V-lowering seen (|A|=[coronal] and [low] in Element Theory, |H| = [-voice], |ʔ| = [-cont]) and [-voice]). V-lowering is the *only* melodic effect on vowels in the EIPT when the /t/ allomorph is present. This lowering is also blocked in predictable environments, if the √ vowel is short (*build-built*), as short vowels do not have the structural complexity to host the floating |A| (Pöchtrager 2018). (3) represents various fully specified floating vowel suffixes, with a node on the timing tier **o**; they overwrite the underlying vowel of the root (ex. *freeze-froze*). In cases involving (3), vowel length is generally stable (*wake-woke*), unless the quality changes from short to long-non-high (*come-came*), which is also due to the 'space' taken up by mid vowels. (4) is templatic and involves copying the root and inserting its onset into the template (*buy-bought*) (see Arad 2003:747 for a similar account of denominal verb phonology in Hebrew).

Previous Analyses: Recent analyses (ex. Embick 2010) propose that English verb roots in V^0 do not spell-out until after merger of C^0 by PIC2 (Chomsky 2001), which itself is a weakening of Phase Theory (cf. PIC1, Chomsky 2000). PIC2 allows T^0 and V^0 to co-participate in allomorphy (ex. T[past] → -t/{LEAVE…}), but only after the v^0 head that intervenes between them undergoes the weakly-motivated operation of pruning. *Pruning* induces the proposed linear locality required for allomorphy. Then, after spell-out of the root, syntactic features ([past]) condition *Readjustment Rules* on the roots (ex. /ɪ/ → /æ/ /X__ Y [past], X= √SING…). Readjustment rules are often accurately criticized for being non-modular, but it is also of note that modern readjustment analyses often do not elaborate on the number and complexity of the proposed readjustment rules necessary to derive the surface forms of the EIPT (at least 10, across 3 phonological levels, in Halle & Mohannan 1985), masking their morphophonological computational weight.

Why the proposed analysis is superior: Readjustment-type analyses fail to account for (I) that the regular past tense suffix *-ed* is in a separate phonological domain from the verb root, but the irregular suffix *-t* is not (II) that the melodic effects of irregular *-t* are coherent: (i) voicing assimilation goes R→L as *-t* is the only *specified voiceless* C in English to have the properties of a Level 1 floating affix in the sense of Newell (2021) and (ii) there is a correlation between the place features of *-t* and the vowel-changes it induces (|A|), and (III) that what has been dubbed *pruning* is a predictable effect of allomorphy chains. If null morphemes did *not* undergo allomorphy, that would be a fact needing an independent explanation within syntactic theory; one that would be difficult to motivate.

Conclusion: This elaborated autosegmental + chain-based-allomorphy account of EIPT allows for all English Past Tense forms to be derived in the phonology proper. It captures links between the URs of the different affixes and their phonological effects in a more explanatory manner than accounts that list readjustment rules. And, importantly, it does not require any allomorphy of the verb roots themselves (leaving aside v^0 light verbs and syntactically higher modals and auxiliaries). An account of the EIPT that is myopic with regards to allomorphy permits the expulsion of modularity-violating Pruning and Readjustment Rules from the analysis, gaining in explanatory simplicity. It also allows for a more nuanced understanding of the workings of phases and the Phase Impenetrability Condition, which is clearly inoperative in the phonology-proper (underspecified exponents probe already-interpreted phonological material). Further implications of these conclusions for the architecture of grammar will be elaborated upon in the talk.