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## The Apex Paradox

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In Phase Theory, the complement domain of a phase head spells out. Depending on the details of Transfer/Spell-Out or the exact formulation of the Phase Impenetrability Condition (PIC), this is done whenever the current phase is complete ('strong PIC') or as soon as the next higher phase head is merged to the derivation ('weak PIC'). Either way, Phase Theory has a dirty little secret that nobody talks about: what happens to the top part? If the Spell-Out domain equals a phase head's complement domain, no matter how the condition is formulated, there remains a problem at the root of any given derivation in its final stage: when, how, and under what condition do the top-most (phase) head and its edge spell out?

At least since Emonds (1970), modern syntactic theory has shown that root (main clause, independent) and embedded (subordinate, dependent) contexts are empirically different. The need to keep root and embedded contexts distinct has occasionally been recognized in the literature (e.g., Bayer 2004, Emonds 2004), but, for the most part, it has gone unnoticed -- root CP and embedded CP are treated as structurally alike. Cartographic approaches to syntax (Rizzi 1997 et seq.) prove to be exceptional: by sketching a more fine-grained picture of the C-domain, a structural distinction of root and embedded contexts has been made possible qua highest functional projections such as Force. These could serve as an explanatory device for the absence of root phenomena under the assumption that they are absent in (a subset of) embedded clauses. There is in fact research within the cartographic program that aims to implement Emonds' notion on root transformations by claiming that embedded clauses lack Force (e.g., Haegeman 2012). Even within cartography, though, an isomorphic conception of root and embedded contexts prevails.

An interesting connection of this root/embedded asymmetry with Phase Theory has remained virtually undetected: a root CP notionally non-distinct from embedded CPs poses a major problem. When syntactic chunks are sent off to the interfaces periodically, phase by phase, the complement XP of a phase head H1 is spelled out only upon External Merge of the next higher phase head, H2, such that H1 and its edge remain available to the derivation (e.g., ensuring successive-cyclic movement):

(1) ... 
$$[_{\text{H2P}}$$
 **H2**  $[_{\text{YP}}$  Y  $[_{\text{H1P}}$  **H1**  $[_{\text{XP}}$  ...  $X$  ...  $]]]]$ 

Subsequent Spell-Out of the complement YP of H2, including H1 and its Edge, is triggered by the next higher phase head, H3, and so forth, according to the 'weak' version of the PIC (Chomsky 2001: 13).

While this mechanism might well capture cyclic Spell-Out of *embedded* phases, it begs the question of how a root CP can ever be spelled out in full. In order to spell out the complete root CP, some kind of 'Spell-Out by default' has occasionally been invoked: "[Spell-Out] must be able to spell out PH [i.e. the root CP] in full, or root clauses would never be spelled out" (Chomsky 2004: 108). This raises a fundamental question: how can C<sub>HL</sub> know whether a given C is free or embedded? Put negatively, how can C<sub>HL</sub> be prevented from treating an embedded CP as a root CP? We call this the *Apex Paradox*.

In our view, current theorizing has not provided a satisfactory solution to the Apex Paradox. One might see recent advances in Phase Theory as providing a direction. Specifically, Cecchetto and Donati (2015), who take the position that labels constitute the driving force behind a derivation (cf. Chomsky 2013), stipulate that a root C must be 'label-less' -- as opposed to an embedded C. The absence of a label might then serve as a stop signal for the computational engine, entailing Spell-Out of whichever syntactic object is available at the end of the derivation. We do not see this as a genuine solution, though. Rather, it seems merely to shift the burden of explanation to a different locus; while it is true that root C shouldn't need a label under this approach, it seems all too convenient that C of all lexical items does not come with a label at all. A similar idea, that root/matrix C is morphologically undetermined, seems to underlie Richards' (2016) suggestion that matrix C in English must be null -- possibly addressing the Apex Paradox by stipulating that the apex is simply different. Lastly, a 'general restriction on merge' could act as "an ineluctable forced end-point of the derivation", as suggested by Larson (2015: 63). As it stands, the Apex Paradox might have been recognized under one guise or another, but its treatment doesn't go beyond description.

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