The Apex Paradox: A Technical Issue for the Explanation of *Main Clause Phenomena*

Kleanthes K. GROHMANN University of Cyprus (kleanthi@ucy.ac.cy) ▪ Markus PÖCHTRAGER, Boğaziçi University Istanbul (markus.pochtrager@boun.edu.tr) ▪ Tobias SCHEER, CNRS/University of Nice (scheer@unice.fr) ▪ Michael SCHIFFMANN, University of Heidelberg (mikschiff@t-online.de) ▪ Neven WENGER, University of Frankfurt (neven.wenger@gmx.net)

Phase Theory as initiated in [1] prompts an issue that appears to be understudied thus far: *Spell-Out of the highest CP* — the root domain. In contemporary theorizing (cf. [2] *et seq.*), where derivational chunks are sent off to the interfaces cyclically ('cyclic Spell-Out'), 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) ...[$_{H2P}$ **H2** [$_{YP}$ Y [$_{H1P}$ **H1** [$_{XP}$ ... X ...]]]]
Spell-Out XP

Subsequent Spell-Out of the complement of YP of H2, incl. H1 and its Edge, is triggered by the next higher phase head, H3, and so forth (according to the 'weak PIC'; cf. [2]: 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) given that no other phase head is merged after root C:

(2) [$_{CP}$ **C** ... [$_{TP}$ ... T ... [$_{vP}$ ... ***v*** [$_{VP}$ ... V ...]]]] □ [$_{CP}$ **C** ... [$_{TP}$ ... T ... [$_{vP}$ ... ***v*** [$_{VP}$ ... V ...]]]]
?

In order to spell out the complete root CP, some kind of 'Spell-Out by default' is occasionally invoked: "S-O [*Spell-Out*] must be able to spell out PH [*i. e. the root CP*] in full, or root clauses would never be spelled out" ([3]: 108; also cf. [6]: 58, [4]: 37). This raises a fundamental question: *How can C_{HL} know whether a given C is free or embedded?* Put negatively, how can C_{HL} be prevented from treating an embedded CP as a root CP? Let's call this the *Apex Paradox*.

Even though the *root–embedded asymmetry* (REA) has long been recognized in generative theory (explicitly, at least since [5]), it has been tacitly assumed by mainstream generative theory that root and corresponding embedded CPs are of equal complexity. Interestingly, while the bulk of the phenomena investigated in the domain of the REA (notably under the rubric of *Main Clause Phenomena* [MCP] and, conversely, *Embedded Root Phenomena* [ERP]; cf. [5] and [9]) are narrow-syntactic (3), and, to a lesser amount, 'LF'-related (4) — e. g.,

(3) *NS: Left Dislocation (in English root vs. embedded clauses)*
a. [$_{CP}$ Giorgio$_i$, he$_i$ likes boys].
b. *Deborah regrets [$_{CP}$ that Giorgio$_i$, he$_i$ likes boys].

(4) *LF: Locus of referential force in complex nominals* (cf. [8]: 7)
[$_{DP}$ The$_{[+REF]}$ vase [$_{PP}$ on [$_{DP}$ the$_{[-REF]}$ table]]] (is beautiful).

— there is also a (genuinely) phonological clue to it: *utterance-initial processes* (5), as discussed recently by [12]. In Belarusian, where phonological processes apply across word boundaries, word-initial *i-prothesis* occurs after consonant-final words and *utterance-initial* contexts (as well as when the word is pronounced in isolation), but not after vowel-final word:

(5) *Phonology: utterance-initial i-prothesis before CVC roots in Belarusian* ([12]: 11)

CONTEXT	*EXAMPLE*	*GLOSS*
##_CVC	*lev*	LION.NOM.SG
##_CØC-V	*i-lv-a*	LION-GEN.SG

The same pattern is found in languages where phonological processes apply across word boundaries (e. g., *Gorgia Toscana* in Tuscan, *Sievers Law* in Vedic, and spirantization/gemination in Corsican).

Thus, our examination aims to draw a broader, cross-modular picture of the REA, of which traces are

not only found in NS and at LF, but also in Phonology — and, since this seems to play a role as well, to see how PF and Phonology proper can be distinguished. The rationale of our argument is:

> *Given the cross-modular occurrence of the asymmetry at hand (on the assumption of the inverted T-model, syntax, LF, and PF are distinct computational systems, i. e. distinct modules), the various effects cannot be coincidental; rather, they must stem from a unique source, and this source must lie in Narrow Syntax (NS), which is the only location in the generative architecture that can irradiate into all other components.*

Given the cross-modular view just outlined, the phase-based system offers three logically possible, potentially overlapping sources of the REA, one inherent to the general workings of C_{HL} [A], one contained in NS itself (ultimately, in the Lexicon) [B], and one in semantics/pragmatics ('LF') [C]:

[A] *C_{HL}-internal* — C_{HL} possesses one of the following capacities:

(i) it can *look ahead* to check if more is to come;

(ii) it can check the *derivational workspace* for remaining numerations;

(iii) it can switch to halt mode, producing a *computational delay* of some sort, in order to check whether more is to come.

[B] *NS-internal* — The REA is produced by lexical features operated on in NS:

(i) a *featural specification* (binary or privative) such as [±ROOT] of root C instructs C_{HL} accordingly (cf. [10]);

(ii) a *dedicated functional projection* such as Force^0 (cf. [11] *et seq.*) produces the REA □ difference in *phrase-structural complexity*: embedded domains lack the relevant head Force^0 or C^0 (i. e. 'truncation'; cf. [11]: 314, [7] *et seq.*)

[C] *LF-internal* — LF imposes an interface condition on NS:

a semantic/pragmatic condition (e. g. ASSERTION; cf. [9]) licenses MCP/ERP, filtering out according derivations incompatible with assertability (e. g. factive complements; cf. [4b])

In principle, [A], [B] and [C] are all capable of explaining the REA, but [A] seems to have remained unexplored in the literature. Fleshing out the cross-modular approach sketched here, we will thus explore [A], in particular the possibility whether (and if so, how) the REA might fall out from more general principles pertaining to C_{HL}.

References

[1] CHOMSKY, N. (2000). Minimalist inquiries: The framework. In R. MARTIN, D. MICHAELS & J. URIAGEREKA (eds.), *Step by Step: Essays on Minimalist Syntax in Honor of Howard Lasnik*. Cambridge, MA: MIT Press, 89–155. ▪ [2] — (2001). Derivation by phase. In M. KENSTOWICZ (ed.), *Ken Hale: A Life in Language*. Cambridge, MA: MIT Press, 1–52. ▪ [3] — (2004). Beyond explanatory adequacy. In A. BELLETTI (ed.), *Structures and Beyond*. New York: OUP, 104–131. ▪ [4] DEN DIKKEN, M. (2007). Phase extension: Contours of a theory of the role of head movement in phrasal extraction. *TL* 33, 1–41. ▪ [5] EMONDS, J. (1970). *Root and Structure-preserving Transformations.* Ph. D. thesis, MIT. ▪ [6] GALLEGO, Á. J. (2007). *Phase Theory and Parametric Variation*. Ph. D. thesis, Universitat Autònoma de Barcelona. ▪ [7] HAEGEMAN, L. (2004). Topicalization, CLLD and the left periphery. In B. SHAER, W. FREY & C. MAIENBORN (eds.), *ZAS Papers in Linguistics 35: Proceedings of the Dislocated Elements Workshop*. Berlin: ZAS, 157–92. ▪ [8] HINZEN, W. (2009). An argument against compositionality. Ms., Universities of Amsterdam & Durham. ▪ [9] HOOPER J. & S. THOMPSON (1973). On the applicability of Root Transformations. *LI* 4: 465–97. ▪ [10] NISSENBAUM, J. (2000). *Investigations of Covert Phrase Movement*. Ph D. thesis, MIT. ▪ [11] RIZZI, L. (1997). The fine structure of the left periphery. In L. HAEGEMAN (ed.), *Elements of Grammar: Handbook of Generative Syntax*. Dordrecht: Kluwer, 281–337. ▪ [12] SCHEER, T. (2009). Representational and procedural sandhi killers: Diagnostics, distribution, behaviour. In M. DOCEKAL & M. ZIKOVÁ (eds.), *Czech in Formal Grammar*. Munich: Lincom, 155–174.