title: *Phases and Ellipsis*
keywords: cycle, ellipsis, sluicing, semantic identity

1. INTRODUCTION: It has long been observed that the movement operation obeys strict cyclicity ([2]). To capture the step-wise nature of movement various attempts have been made in the history of generative grammar (see [1,2], and references therein). This paper argues that one of the current theories of cyclicity, [3,4]'s *Phase Theory*, captures the properties of ellipsis in so-called *Antecedent Container Sluicing* construction (ACS) in a straightforward fashion. In so doing, we show that, similarly to movement, the relation between the ellipsis site and its antecedent is established in cyclic nodes, and provide support to a particular theory of cyclicity.

2. BACKGROUND (PROPERTIES OF ACS): [12] proposes that ellipsis is licensed if antecedent and elided sites hold a mutual entailment relation. Under this semantic identity approach, it is predicted that ellipsis can obtain whenever the elided site is semantically identical to the antecedent site. Two such cases have been reported in the recent literature: swiping ((1); [13]) and what we called ACS ((2); [17]). In both cases, VP is taken to serve as an antecedent for sluicing (TP ellipsis).

Focusing on the ACS case, [17] shows it has two major properties: (i) unavailability of functional categories above v*P in the elided site; and (ii) antecedent containment ([7]). Consider each trait in (2), where, first, modal and negation in the antecedent are not interpreted in the sluiced site and, second, constituency tests indicate that the PP is attached to the matrix VP ((3)), therefore it is in a configuration where an infinite regress problem arises ((4)).

To account for these properties, [17] claims that the antecedent of ellipsis in ACS is the matrix VP rather than the matrix TP, following [13]'s analysis of swiping; also, it is argued that, given that the PP is attached to the matrix VP, a lower segment is available as antecedent for sluicing (à la [12]), thus solving infinite regress. Crucially, since this lower VP segment excludes both the PP and the functional material (negation and modals), the two key properties of ACS are captured.

3. NEW PROPERTIES OF ACS: ACS exhibits another curious property that does not follow straightforwardly from semantic identity accounts: if the PP containing the elided TP is attached to a projection higher than the matrix VP, modals and negation can be recovered in the ellipsis site. One of the clearest cases is when adverbs are inserted between the matrix clause and the PP ((5)). Assuming that the PP after the temporal adverb is attached to the TP, this suggests that there is a correlation between the PP's position and the possible antecedents for the elided site. In other words, antecedent selection in ACS depends on which phrase the PP is attached to: if it is the VP, this phrase is selected as an antecedent and higher functional elements are unavailable in the ellipsis site; however, if the PP is attached higher up, TP is selected as an antecedent and the functional elements become available.

4. PHASE AND ELLIPSIS: These properties of ACS naturally follow from taking v*P and CP to be cyclic domains that are cyclically transferred to the interfaces ([3,4]). If the PP is merged within the v*P, the antecedent selection is done in the v*P cycle, resulting in the unavailability of functional elements such as modals and negation, because these do not exist at that derivational stage ((6)). On the other hand, if the PP is merged within the CP cycle, the matrix TP can be taken as an antecedent, and modals and negation become available ((7)). Finally, assuming –as above– that a TP/VP segment can be an antecedent for sluicing, the infinite regress problem does not arise.

5. PROBLEMS: There are, nevertheless, some technical problems with our current approach that we must point out, and we would like to explore potential solutions too. (i) The first problem is how the semantic identity can be calculated if only the *complement domain* of phase heads (i.e., VP and TP) is transferred and targeted for semantic operations, as [3,4] contends. For this problem, we have to assume that the external argument is merged with the VP, below v*, along the lines of [11] (see also [5,6,8,9,10,15]). (ii) Second, for the calculation of semantic identity, the information in the ellipsis site must be preserved (must 'wait') until the elements in the matrix clause are transferred –this is the only way to make sure that the elided domain and its antecedent are computed within the same cycle/phase. We can account for this if the infinitival "C" within the PP is defective, analogous to passive and unaccusative "v" (a possibility supported by the fact that its tense interpretation is always parasitic, like in raising environments; see [4,14]). If correct, then [3,4]'s system does not force the transfer of the infinitival TP to the interfaces, allowing for both the adjunct PP and the ellipsis antecedent to be cashed out simultaneously. (iii) Finally, the ambiguity of (5) must be explained. This can be accommodated by assuming that LF is using a different PP copy in each case: when modals and negation are interpreted, LF uses the fronted copy (the one feeding PF as well); when they are not, LF uses the v*P-internal copy.

6. CONCLUSION: In sum, we argued that phases define the local domain in which the antecedent selection process of ACS takes place, and, therefore, much like other syntactic operations, ellipsis is handled within a relevant domain (a cycle). Crucially, the fact that TP and VP be the antecedents supports the hypothesis that not any given cycle can be taken for ellipsis computation: only the *complement domain* of [3,4]'s phases is. We take this to be a promising conclusion, further reinforced by NP ellipsis ((8)) if, as [16] argues, D, together with v* and C, is a phase head.

(1) John was dancing, but I don't remember who with.

(2) John must not kiss anyone [$_{PP}$ without [$_{CP}$[$_{IP}$ PRO knowing [$_{CP}$ who [$_{IP}$ Δ]]]]].
*… without knowing who he must not kiss.
(= if he does not know who he must not kiss)
… without knowing who he is kissing.

(3) a. *VP-preposing*
John was kissing someone without knowing who and
[kissing someone without knowing who], Bill was too.

b. *Do so substitution*
John was kissing someone without knowing who and
Mary was doing so (= kiss someone without knowing who) too.

c. *Ellipsis/Deletion*
John was kissing someone without knowing who and
Mary was [~~kissing someone without knowing who~~] too.

(4) [$_{IP1}$ John [was [$_{VP}$[$_{VP}$ kissing someone][$_{PP}$ without [$_{CP}$[$_{IP2}$ PRO [$_{VP}$ knowing
[$_{CP}$ who [$_{IP1}$ he [was [$_{VP}$[$_{VP}$ kissing someone][$_{PP}$ without [$_{CP}$[$_{IP2}$ PRO [$_{VP}$ knowing
[$_{CP}$ who [$_{IP3}$ e]]]]]]]]]]]]]]]]

(5) John must not kiss anyone today [$_{PP}$ without [$_{CP}$[$_{IP}$ PRO knowing [$_{CP}$ who [$_{IP}$ Δ]]]]]
… without knowing who he must not kiss.
(= if he does not know who he must not kiss)
… without knowing who he is kissing.

(6) At the VP Cycle
[$_{VP}$[$_{VP}$ John kiss someone] [$_{PP}$ without [$_{CP}$[$_{IP}$ PRO [$_{VP}$ knowing [$_{CP}$ who [$_{IP}$ Δ]]]]]]]

(7) At the CP Cycle
[$_{CP}$[$_{IP}$[$_{IP}$ John must not [$_{VP}$ t_{John} kiss anyone]] [$_{PP}$ without [$_{CP}$[$_{IP}$ PRO [$_{VP}$ knowing [$_{CP}$ who [$_{IP}$ Δ]]]]]]]]

(8) Juan leyó [$_{DP}$ el artículo de Chomsky], y yo leí [$_{DP}$ el Δ de Kayne] (Spanish)
Juan read-3SG the paper of Chomsky, and I read-3-SG the of Kayne
'Juan read Chomsky's paper, and I read Kayne's'

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