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# A local approach to the Williams Cycle

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**Abstract**

Asymmetries between movement types have standardly been derived by theories of improper movement that preclude certain configurations where different kinds of movement steps are mixed in the course of displacement of a single item. However, closer inspection reveals that none of the existing accounts of improper movement can be maintained under a strictly derivational, local approach to displacement in which syntactic structure is generated bottom-up, by successive application of structure-building operations (such as internal or external Merge), and only very small parts of the structure are accessible at any given point in the derivation (cf. Chomsky, 2001). In view of this state of affairs, the present paper pursues a fairly modest goal: it implements a specific constraint against improper movement going back to Williams (1974, 2003) – viz, what I will refer to the *Williams Cycle* – in a local way, without a need for backtracking or look-ahead.


*Keywords:* Improper movement; Long-distance scrambling; Super-raising; PIC; Edge feature; f-seq; Cyclicity

## 1. Introduction: improper movement

Different movement types can be distinguished by the different landing sites (or 'criterial positions', in Rizzi's (2007) terms) that they target. For instance, at least for present purposes and against the background of a clause structure consisting of CP, TP, vP, and VP, it can be assumed that scrambling in languages like German or Dutch targets a Specv position; the same may go for object shift in the Scandinavian languages. EPP-driven raising to subject in English ends up in a SpecT position. Wh-movement targets a SpecC position; and so on. When one considers locality restrictions on the various movement types, an interesting generalization emerges. It seems that there is a correlation between the position targetted by a movement type (low vs. high) and the distance over which it can apply (short vs. long): movement types that have landing sites which are low in the clausal structure (e.g., SpecT, Specv) typically cannot be applied long-distance; and movement types that have landing sites which are high in the clausal structure (e.g., SpecC) typically can be applied long-distance. Thus, (1-ab) shows that scrambling in German is clause-bound; in contrast to, e.g., wh-movement or topicalization in the same language, a CP boundary cannot be crossed.

(1) a. dass das $Buch_1$ keiner $t_1$ liest
that the $book_{acc}$ no-one$_{nom}$ reads

b. *dass Karl das $Buch_1$ glaubt [$_{CP}$ dass keiner $t_1$ liest ]
that $Karl_{nom}$ the $book_{acc}$ thinks that no-one$_{nom}$ reads

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The same goes for object shift; see the Icelandic examples in (2-ab) (from Vikner (2005)).

(2) a. Ég veit [$_{CP}$ af verju þau seldu bókina$_1$ ekki $t_1$ ]
I know why they sold books$_{acc}$ not
b. *Ég veit bókina$_1$ [$_{CP}$ af verju þau seldu ekki $t_1$ ]
I know books$_{acc}$ why they sold not

Fronting of unstressed pronouns in German is also an operation that targets a TP-internal position in the clause, and it may not apply long-distance; see (3-ab).

(3) a. dass es$_1$ Fritz $t_1$ gelesen hat
that it$_{acc}$ Fritz$_{nom}$ read has
b. *dass ich es$_1$ glaube [$_{CP}$ dass Fritz $t_1$ gelesen hat ]
that I$_{nom}$ it$_{acc}$ think that Fritz$_{nom}$ read has

The prohibition against non-clause-bound raising in English ('super-raising') is illustrated in (4).

(4) a. Mary$_1$ seems [$_{TP}$ $t_1$ to like John ]
b. *Mary$_1$ seems [$_{CP}$ that $t_1$ likes John ]

(5-ab) shows that whereas clitic movement in Italian does not have to be maximally local (it may target a matrix verb in restructuring infinitive constructions, as an instance of 'clitic climbing'), it can never cross a CP boundary (in non-restructuring environments).

(5) a. Mario lo$_1$ vuole [$_{TP}$ leggere $t_1$ ]
Mario it wants to read
b. *Mario lo$_1$ odia [$_{CP}$ C [$_{TP}$ leggere $t_1$ ]]
Mario it hates to read

Finally, extraposition in English may selectively violate certain island constraints (e.g., it may take place from subject DPs), but it cannot cross a CP (see Ross's (1967)) Right Roof Constraint/Upward Boundedness Constraint); cf. (6-ab). This conforms to the above generalization if it is assumed that extraposition targets a low position in the clause.

(6) a. [$_{DP}$ A review $t_1$ ] will appear [$_{PP_1}$ of his new book ]
b. *John always maintains [$_{CP}$ that [$_{DP}$ a review $t_1$ ] will appear shortly ] whenever he is asked about it [$_{PP_1}$ of his new book ]

The generalization correlating the height of the landing site and the possible length of the displacement path is standardly accounted for by a conspiracy of two constraints: a locality constraint and a constraint against improper movement. Thus, first, there is a locality constraint that permits extraction from a CP only via SpecC. For present purposes at least, this role can be played by the Phase Impenetrability Condition (PIC; Chomsky (2001)), according to which only specifiers and the head of a phase are accessible to operations outside the phase (given that CP is a phase, and phrasal movement cannot target C). This precludes skipping the embedded SpecC position in (1-b), (3-b), (4-b), (5-b), and (6-b). Second, there is a constraint on improper movement according to which movement to a TP-internal position may precede movement to SpecC so as to permit (7-a) (where raising is followed by wh-movement), or indeed (7-b) (given that subjects are merged in Specv and then undergo EPP-driven movement to SpecT); but not vice versa: Movement from SpecC to a TP-internal position is blocked. This asymmetry can be taken to reflect the hierarchy of the target positions in the tree.

(7) a. [$_{CP}$ Who$_1$ C [$_{TP}$ $t'_1$ T seems $t_1$ to like John ]] ?
b. [$_{CP}$ Who$_1$ C [$_{TP}$ $t'_1$ T [$_{vP}$ $t_1$ likes John ]]] ?

In the following section, I will briefly discuss a number of proposals of how to formally capture this constraint against improper movement; and I will show that none of them meets all the requirements imposed by three general potential problems that I will assume to restrict the space for analyses: (a) the generality problem, (b) the locality problem, and (c) the promiscuity problem.