A Derivational Approach to the ECP

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1. P&P Theory of the 1980s (Chomsky 1986)

1.1 Subjacency

(1) a. In a well-formed chain with a link (α_i, α_{i+1}), α_{i+1} must be m-subjacent to α_i. $(0 \leq m < 2)$

b. β is *n*-subjacent to α iff there are fewer than *n+1* barriers for β that excludes α.

c. γ excludes α if no segment of γ dominates α.

(2) a. γ is a barrier for β iff (i) or (ii).

(i) γ immediately dominates δ, δ a BC for β.

(ii) γ is a BC for β, $\gamma \neq$ IP.

(iii) γ is a BC for β iff γ is not θ-governed by a lexical category.

b. In the structure [... α ... [$_\gamma$ ... δ ... β ...]], γ is a barrier for β if γ is a projection/the immediate projection of δ, a zero-level category distinct from β.

1.2 ECP

(3) a. A non-pronominal empty category must be properly governed.

b. α properly governs β iff α θ-governs or antecedent governs β.

(4) a. α antecedent governs β if in a link (α,β) of a chain α governs β.

b. α θ-governs β iff α is a zero-level category that θ-marks β, and α, β are sisters.

c. α governs β iff α m-commands β and there is no γ, γ a barrier for β, such that γ excludes α.

1.3 Weak/Strong Violations

(5) a. *?Who are [[pictures of t] on sale]?

b. *Why did [[that John was late t] disturb Mary]?

(6) a. *?Who did [they leave [before they saw t]]?
b. *How did [they leave [before you fixed the car t]]?

(7) a. *?What do you wonder whether John bought t?
b. Who do you think (*that) t won the prize?

(8) a. Adjunction is possible only to a maximal projection that is a nonargument.
b. Subjacency constrains S-structure whereas the ECP applies at LF.

(9) a. comp vs non-comp
b. argument vs adjunct
c. properties of C

2. Minimalist Program (Chomsky 1999, 2001)

2.1 Agree and Move

(10) a. S- and LF-structures being eliminated, the ECP effects should be captured in terms of Agree or Move.
b. Move is induced by the EPP-feature or the EPP property on a feature.
c. Once PH is completed, exhausting the lexical subarrary from which it is derived,H of PH may be assigned an EPP-feature.

(11) a. The EPP-feature (OCC) cannot be satisfied by Merge alone. Internal Merge requires Agree. Therefore, Move=Agree + Pied Piping + Merge.
b. For a probe α and a goal β to agree,
(i) α and β should match,
(ii) β is in the domain of α,
(iii) α and β are activated,
(iv) no potential goal intervenes between α and β.
c. Defective Intervention Constraint: a locality condition which prohibits an establishment of an Agree relation when a closer but inactive goal intervenes between a probe and another goal in the configuration, α>β>γ.
(*Agree (α,γ), when α is a probe and β is a matching goal and β is inactive.)

2.2 Derivation by Phase

(12) a. Phase Impenetrability Condition:
In phase α with head H, the domain of head H is not accessible to operations outside HP but only H and its edge.
b. The complement of H must be spelled out at PH, but evaluation of H and its edge is done at the next phase.--Φ spells out elements that undergo no further displacement.
c. Operations at the phase level are in effect simultaneous.

(13) a. FL takes scopal and discourse-related properties to be "edge phenomena."
b. Internal Merge (Move), required for duality of semantic properties, can apply *either before or after* TRANSFER.
c. EPP should be available only when necessary: That is when it contributes to an outcome at SEM that is not otherwise expressible.
d. Internal Merge must be successive cyclic, passing through the edge of successive phases: No EPP option is ruled out in successive cyclic movement because of the PIC.

2.3 Motivation for the EPP

(14) a. EPP for Case/agreement (PHON)
b. EPP for duality of semantic properties at the C-I interface (SEM)

3. Illegitimate Movement

3.1 Wh-island and Super-raising

(15) a. DIC violation
b. $T(_{\alpha}\Phi)$ $T(\Phi)$ $DP(\Phi)$
c. $C(_{\alpha}Q)$ $WH(Q,wh)$ $C(Q)$ $WH(Q,_{\alpha}wh)$

3.2 CED

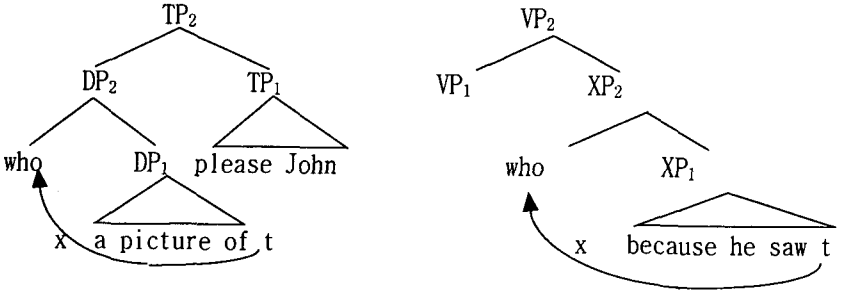
3.2.1 Condition on Adjunction (Agabayani 2000)

(16) a. Category movement proceeds by adjunction.

b. The target for adjunction of α must dominate α.

c. Adjunction of a phrase α makes α an island.

d. In the following structure, DP/XP and TP/VP do not dominate *who*.

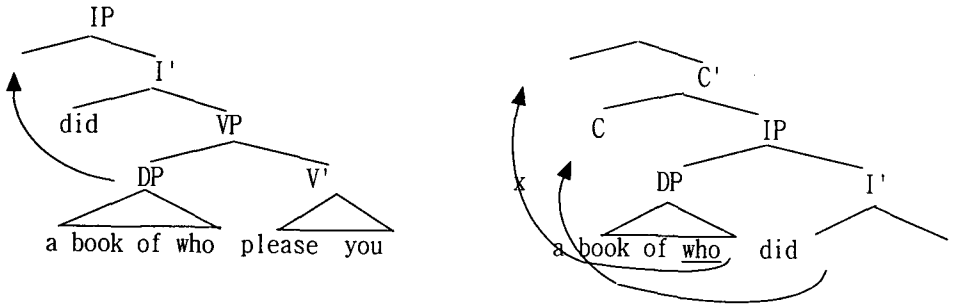


3.2.2 Derivational CED (Toyoshima)

(17) a. A feature *F* is accessible for Attract triggered by another feature *F'* iff *F* and *F'* are both introduced as a part of the same process.

b. A process *P* is a sequence of operations (OP), Merge or Attract, such that if OP (α,β) = γ is in *P*, then Merge (δ,γ) is also in *P*.

(18) In the following structure, DP *a book of who* merges to V' *please you* and forms a VP.



When C is merged, it can attract the auxiliary *did*, but *who* cannot be attracted. This is because *who* was introduced in the process of constructing the subject DP, in parallel to constructing V', before the subject DP was merged to the V'.

3.2.3 Command Unit (Uriagereka 1999)

(19) a. Principle of Strict Cyclicity: All syntactic operations take place within the derivational cycles of CUs.

b. Two elements assembled through monotonic applications of Merger (command

unit CU) belong to the same derivational cascade.

c. A complement is different from any other dependent of a head in that the element a complement dominates are within the same CU of the 'governing' head, whereas this is not true for the elements a non-complement dominates.

d. Extraction from a complement can occur within the same derivational cascade, whereas this is not possible for extractions from a non-complement.

e. Spell Out proceeds by CU. After Spell-out, the phrase marker that has undergone Spell-Out is like a giant lexical compound, whose syntactic terms are obviously interpretable but are not accessible to movement.

f. Cross-cascade relations of any sort—be they Attract, Move, or any others—are strictly forbidden.

3.3 *That-t* Effect

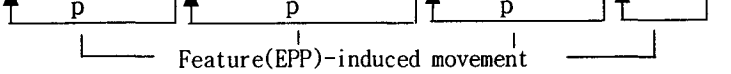
3.3.1 Chomsky (1999)

(20)a. The extra edge position in α required by internal Merge is optional.

b. Assuming options to be determined in LEX, the head H of α must have a feature that makes this position available.

c. Because of the PIC, every step in successive cyclic movement is forced to check the EPP property.

d. [Spec,C_2] $\underline{C_2}$ - [Spec,v_2] $\underline{v_2}$] ⋯ [Spec,C_1] $\underline{C_1}$ - [Spec,v_1] XP



(21)a. If EPP-option is determined in LEX, what blocks movement of the subject over overt C?

b. What/*Who do you think that ⋯ ?

3.3.2 Szczegielniak (1999)

(22)a. Overt C has no feature that can be checked, whereas the null one can check ϕ- and *wh*-features.

b. *That* has no subject agreement feature: subject is stuck in [Spec,TP].

c. [Spec,TP] is a non-phase periphery position, hence further cyclic movement is not allowed.

d. *[Who [do you [think [that [T [bought the house]]]]]]?

(23)a. If C is null, there is subject-C agreement. Hence the subject moves to [Spec,CP], which is a phase periphery position.

b. [[do you [think [that Mary [said [C [T [who left early

F-checking PH PH PH F-checking

c. Movement through intermediate landing sites is not for feature checking but for minimal link condition (MLC).

e. Successive cyclic movement involves

(i) the initial movement to a periphery position for feature checking (FC),

(ii) intermediate stages of movement which are not feature driven, but phase hopping (PH), and

(iii) the final stage which is feature driven for Spell Out.

(24) a. The approach eliminates unwarranted features on v and C.

b. It predicts that intermediate periphery positions are not final landing sites.

c. If C is null, the subject can move to [Spec,CP] for agreement. If the *wh*-object moves [Spec,CP] for successive cyclic movement, [Spec,CP] would be doubly filled.

What do you think [$_{CP}$ t_{what} [$_{TP}$ John [t_{John} bought t_{what}]]]?

d. The subject moves to [Spec,CP] only if it involves further movement (like OS). In all other cases the subject remains in [Spec,TP] and checks agreement feature via Agree.

3.3.3 Pesetsky and Torrego (2000)

(25) a. *That* is a form of T which is moved to C.

b. If *that* moves to T to check $_{u}$T, $_{u}$wh on C should be checked by movement of the *wh*-subject.

c. Without T-to-C, a single instance of movement of the *wh*-subject suffices to check both $_{u}$T and $_{u}$wh on C, which is more economical.

d. The option with *that* is ruled out by economic reasons.

(26) a. Availability of overt complementizer and *do*-support can be accounted for as manifestations of T-to-C.

b. T and its Spec are equidistant to C.

c. Why T-to-C is realized as an instance of auxiliary verb movement in certain

environment and as *that* in other cases?

3.3.4 Ishii (1999)

(27) a. The *that-t* effect follows from cyclic Spell-Out coupled with the Vacuous Movement Hypothesis.
b. VMH: Vacuous movement of a *wh*-subject is prohibited. (Chomsky 1986)
c. Only Agree takes place, with a *wh*-subject remaining in-situ.

(28) a. Overt category movement creates adjunction structure, a multi-segmented category.
b. The EPP-feature of C requires the *wh*-subject to be merged in the minimal domain of C.
c. The minimal domain Min(δ(H)) of H is the smallest subset K of δ(H) such that for any γ∈δ(H), some β∈K sreflexively dominates γ.
d. The *wh*-subject, which is adjoined to TP and thus not dominated by TP is in the MD of C and thus locally related to C. Since *who* is already in a position locally related to C, the EPP-feature of C undergoes erasure without any further operation.
e. An alternative derivation where *who* undergoes movement to the Spec of C is banned, given the economy condition that simpler operations should be preferred over more complex ones.

4. Proposals and Remaining Issues

4.1 CED

(1) a. Spell Out by Phase/CU
b. Intermediate C and υ are defective.
(2) a. Phase Hopping
b. Long distance Agee
c. Successive cyclic movement for MLC
(3) a. No Move but OCC
b. The goal should be c-commanded by every head on the pass to the target.

4.2 *That-t*

(1) T-to-C and Economy on feature checking/valuation
(2) *That* is a C-checker.

4.3 Remaining Issues

(a) Locality condition determines whether to continue or cancel the derivation:
  (i) How can the argument/adjunct asymmetries be explained?
  (ii) What features are valued by Agree in displacement of an adjunct?

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