

## A Multiple Dominance Approach to Parasitic Gaps

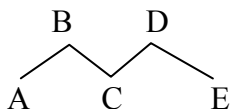
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### 1. Introduction

- (1) Multiple dominance (McCalwley 1982, Wilder 1999, Citko 2005, Svenonius 2006, Bachrach and Katzir 2007, Gracanin-Yuksekk 2007, among many others)



#### Goal of the presentation

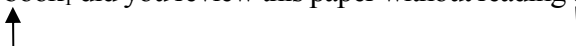
- (2) To argue for the multiple dominance based on Parasitic Gap constructions.

Parasitic Gaps (Taraldsen 1981; Chomsky 1982; Engdahl 1983; Kayne 1983; Williams 1990; Postal 1993; Nissenbaum 2000; Culicover and Postal 2001; Hornstein 2001; Nunes 2001, 2004; Nunes and Uriagereka 2000; Agbayani and Ochi 2008, among many others)

- (3) Which paper<sub>t<sub>1</sub></sub> did you file t<sub>1</sub> without reading pg<sub>1</sub>?

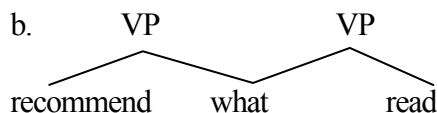
*Extraction out of the adjunct*

- (4) \*Which book<sub>t<sub>1</sub></sub> did you review this paper without reading t<sub>1</sub>?



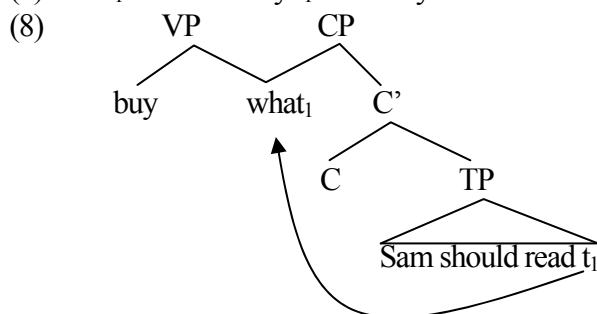
### 2. A multiple dominance approach to PG

- (5) a. I wonder what Gretel recommended and Hansel read?



- (6) Sharing can take place at the derived position. (Citko 2000)

- (7) What<sub>t<sub>1</sub></sub> will John buy t<sub>1</sub> and Mary think Sam should read t<sub>1</sub>? (Citko 2000: 48)



#### Proposal

- (9) PG involves sharing at the derived position.

#### Assumptions

- (10) a. The edges of vP and CP are landing sites of successive cyclic movement. (Chomsky 2000 and Fox 2000).  
 b. English has overt object shift (Johnson 1991, Koizumi 1993).  
 ---- > The object shift is triggered by F. FP is between vP and VP.

Derivation of PG

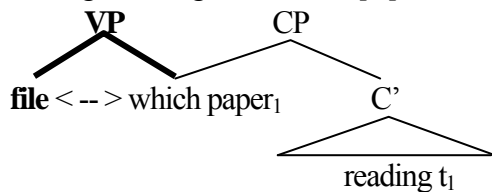
(11) Which paper did you file without reading?

Step 1: Building up the adverbial clause

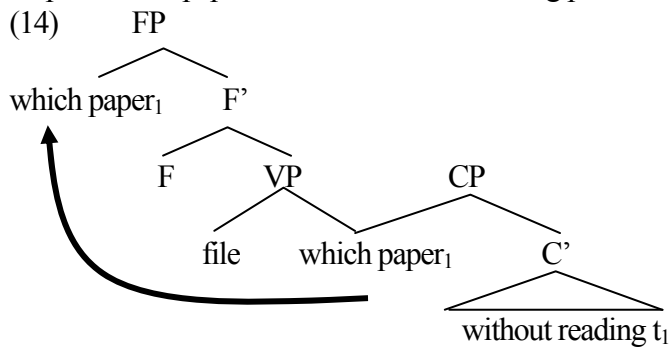
- (12) a. [<sub>VP</sub> PRO v reading which paper] (Building up vP in the adverbial clause)
- b. [<sub>VP</sub> which paper [<sub>VP</sub> PRO v reading which paper]] (*Which paper* moves to the edge of vP.)
- c. [which paper C [T [<sub>VP</sub> which paper [<sub>VP</sub> PRO v reading which paper]]]] (*Which paper* moves to the edge of CP.)

Step 2: Multiple dominance at the edge

(13) *File* undergoes Merge with *which paper*.

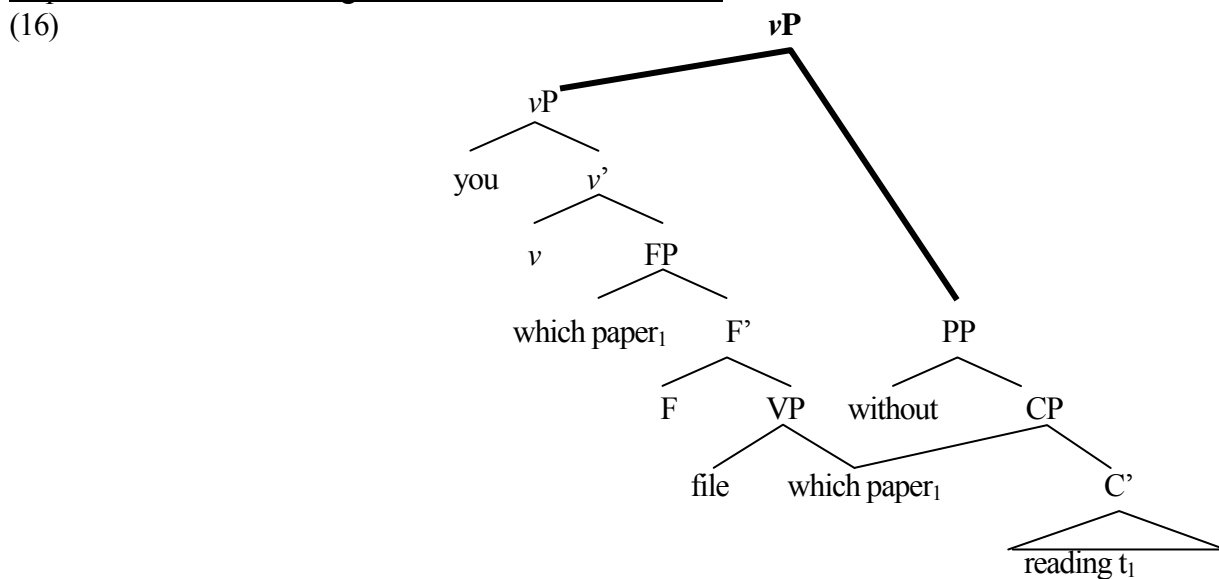


Step 3: Which paper moves to a Case-checking position [Spec, FP].

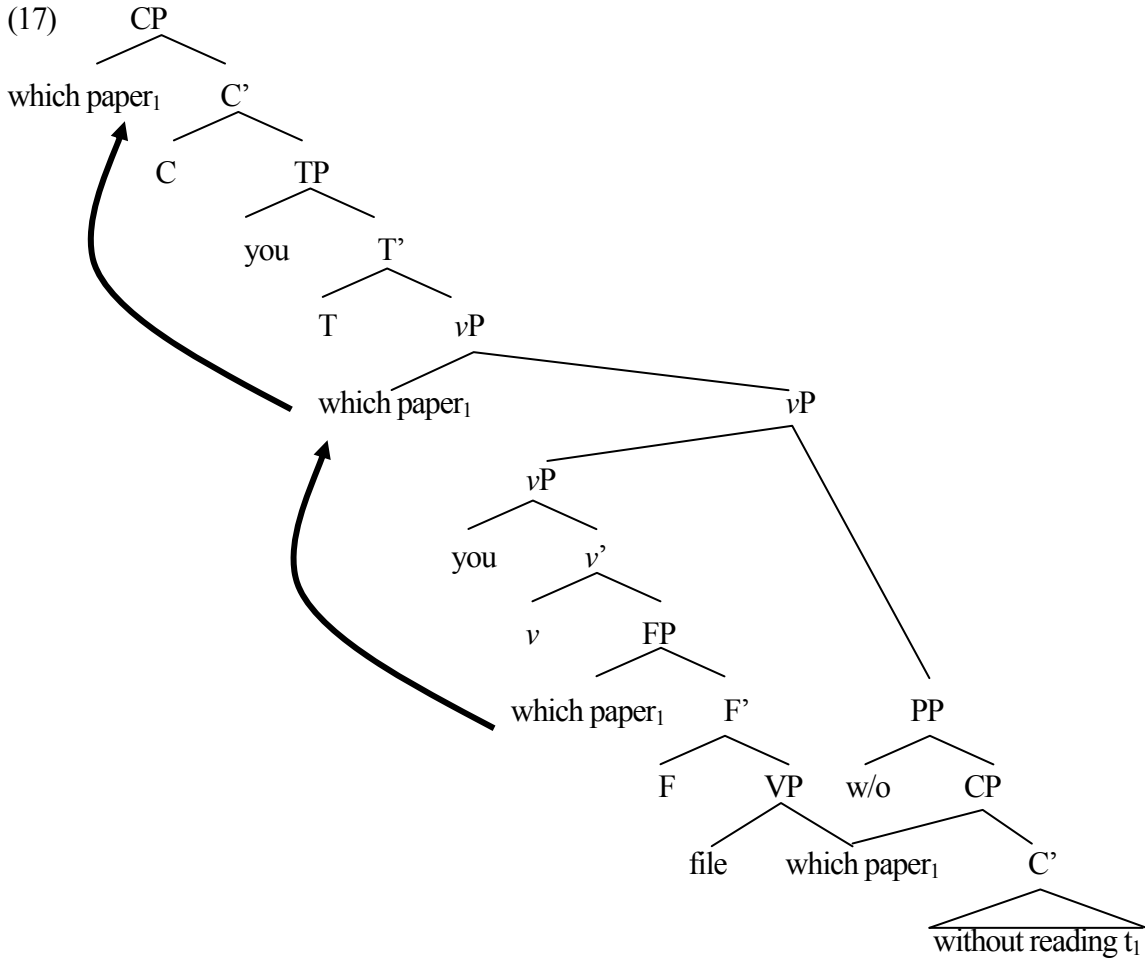


(15) When *which paper* moves out of the adverbial clause, the adverbial clause is still an independent syntactic object. ---> No adjunct island violation (cf. Nunes 2001; 2004, Nunes and Uriagereka 2000)

Step 4: The matrix vP is merged with the adverbial clause PP.



Step 5: *Which paper* undergoes further movement to [Spec, CP].

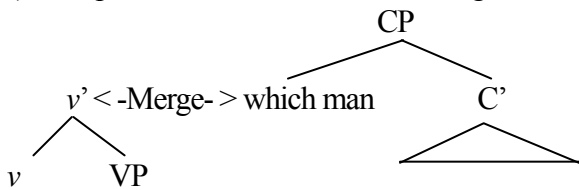


### 3.3. Empirical support

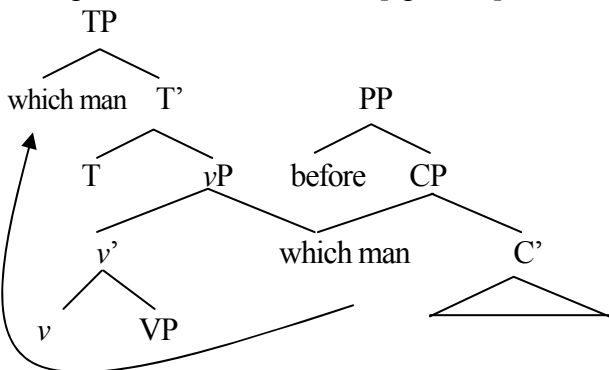
<1> Anti-c-command requirement (Engdahl 1983)

(18) \*I wonder which man<sub>1</sub> t<sub>1</sub> called you before you met pg<sub>1</sub>. (Nunes 2001:332)

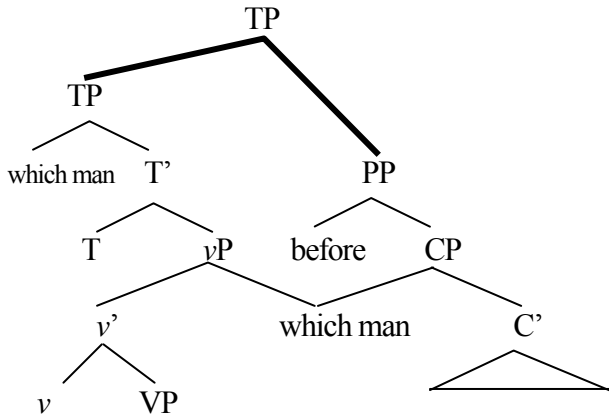
(19) a. Step 1: *Which man* moves to the edge of the adverbial CP and then it is merged with v'.



b. Step 2: *Which man* moves to [Spec, TP].



c. Step 3: The adverbial PP is merged with the matrix TP.

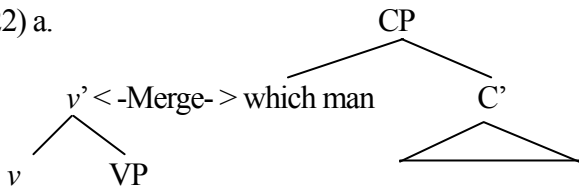


(20) Adverbial PPs should be in the c-command domain of the subject. ---- > *Adjunction to vP*

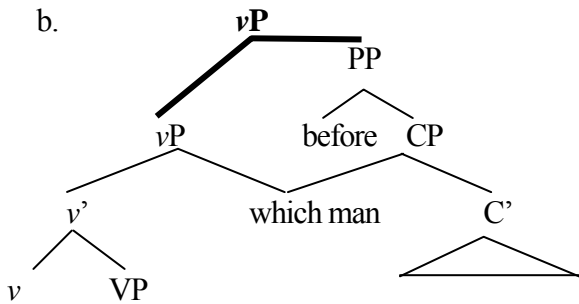
- (21) a. \*He<sub>i</sub> left the party without talking to John's<sub>i</sub> friend.  
 b. John<sub>i</sub> left the party without talking to his<sub>i</sub> friend.

Another derivation

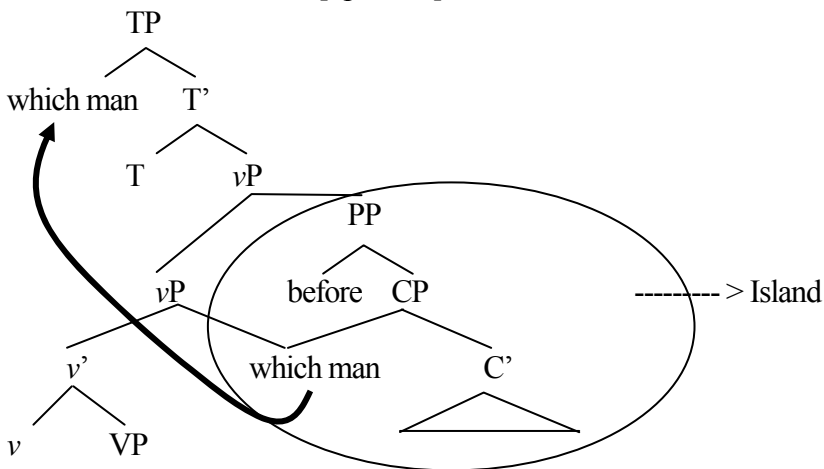
(22) a.



b.



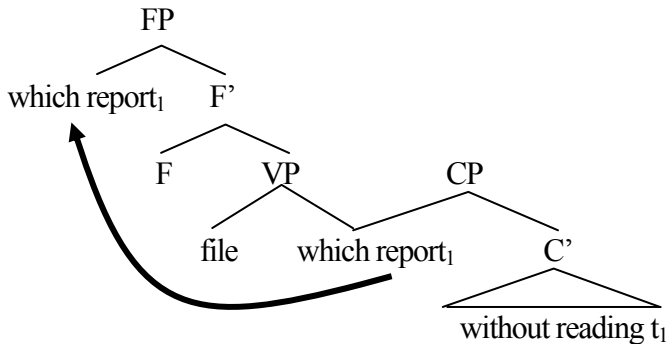
c. *Which man* moves to [Spec, TP].



(23) Subjects and adjuncts independently undergo Spell-Out before they are merged with structures.  
 (Uriagereka 1999, Nunes and Uriagereka 2000)

<2> Licensing at S-structure (Engdahl 1983)

- (24) a. \*Who filed which report<sub>i</sub> without reading pg<sub>1</sub>?  
 b. *Which report* stays at [Spec, FP] without further movement.



The Activation Condition (Chomsky 2000)

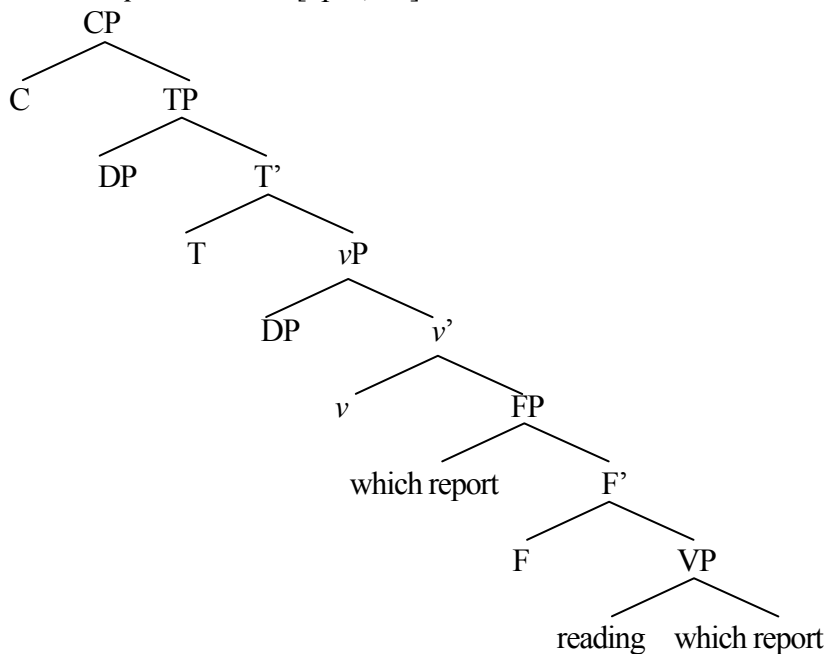
- (25) a. A constituent has to have an uninterpretable feature to be visible for movement --> Activation feature.  
 b. The activation feature cannot be checked at the intermediate step of successive cyclic movement.

- (26) *Which report* has an activation feature [-wh], which is supposed to be checked as a reflex of Q-feature-checking in C. ---> [-wh] feature remains unchecked.

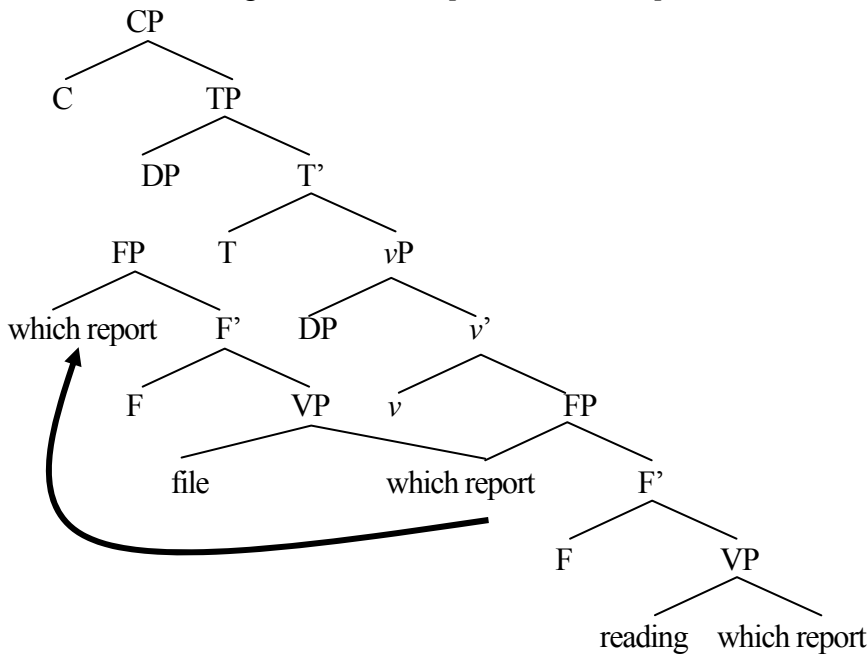
Another derivation

- (27) How about the derivation where *which report* stays in-situ without *wh*-movement?  
 ----> *Which report* has no activation feature.  
 ----> If the matrix verb could be merged with *which report* in-situ, (24a) would be grammatical.

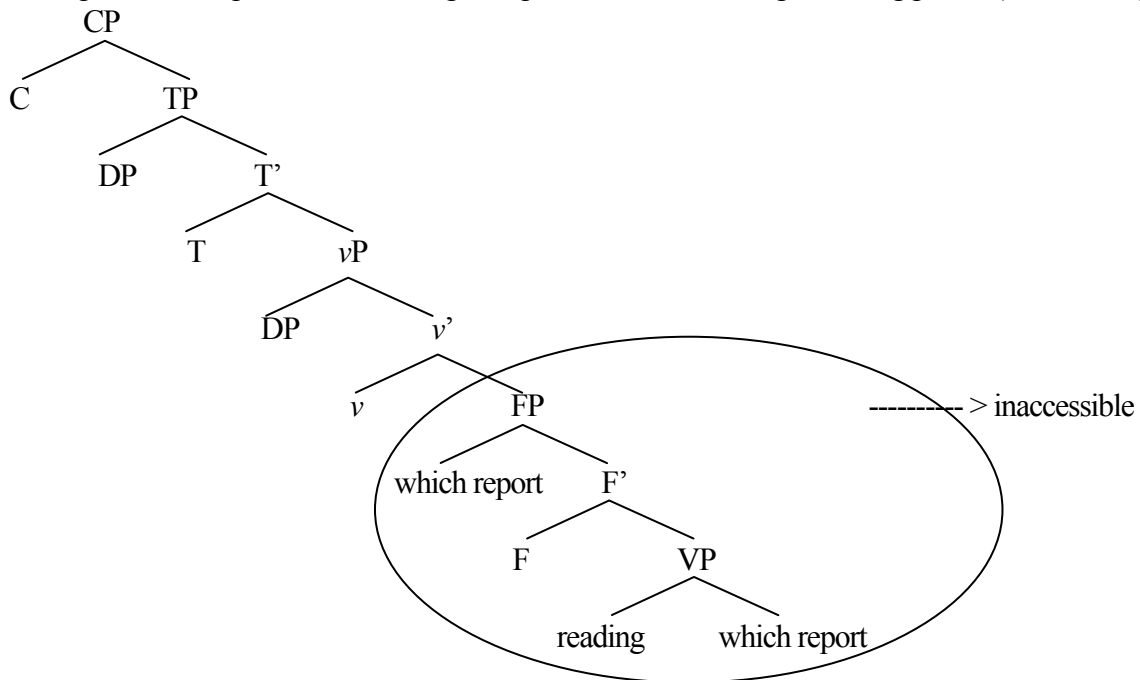
- (28) *Unwelcome derivation*  
 a. *Which report* moves to [Spec, FP].



b. *File* is merged with *which report* and *which report* moves to the matrix [Spec, FP].



(29) The complement of a phrase head undergoes Spell-Out at the next higher strong phase. (cf. Chomsky 2001)



----> At CP -level, FP is not accessible. *File* cannot be merged with *which report*.

### <3> Licensing by A-bar movement

(30) \*The book<sub>1</sub> was filed t<sub>1</sub> without my reading pg<sub>1</sub> first. (Chomsky and Lasnik 1993: (114))

(31) *The book* has no activation feature and it stays at the embedded [Spec, FP] like *which report*, because *the book* has no activation feature. When the adverbial CP is built up, *the book* is not accessible to the computational system in the same way as (28).

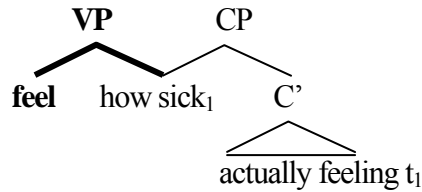
**<4> Categorical restriction**

(32) The antecedent of a PG should be a noun phrase.

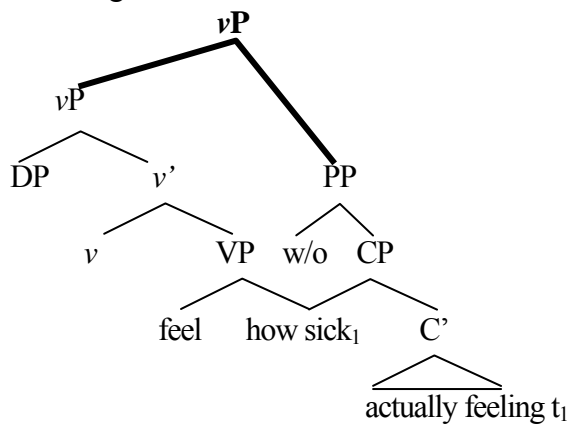
- (33) a. \*How<sub>1</sub> did Deborah cook the pork t<sub>1</sub> after cooking the chicken pg<sub>1</sub>?
- b. \*[How sick]<sub>1</sub> did John look t<sub>1</sub> without actually feeling pg<sub>1</sub>?
- c. \*This is a topic [about which]<sub>1</sub> you should think t<sub>1</sub> before talking pg<sub>1</sub>? (Postal 1993)

Derivation of (33b)

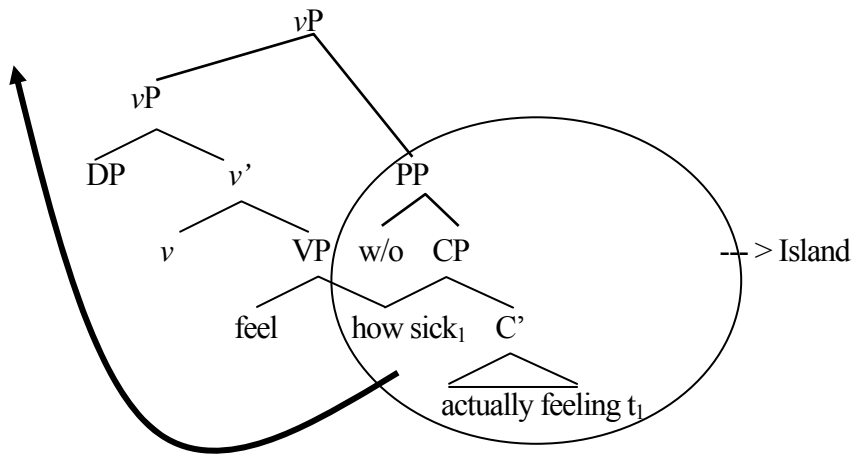
(34) a. *How sick* moves to the edge of CP and is merged with *feel*.



b. The adverbial PP is merged with vP.



c. Extraction of *how sick* --- > Island violation

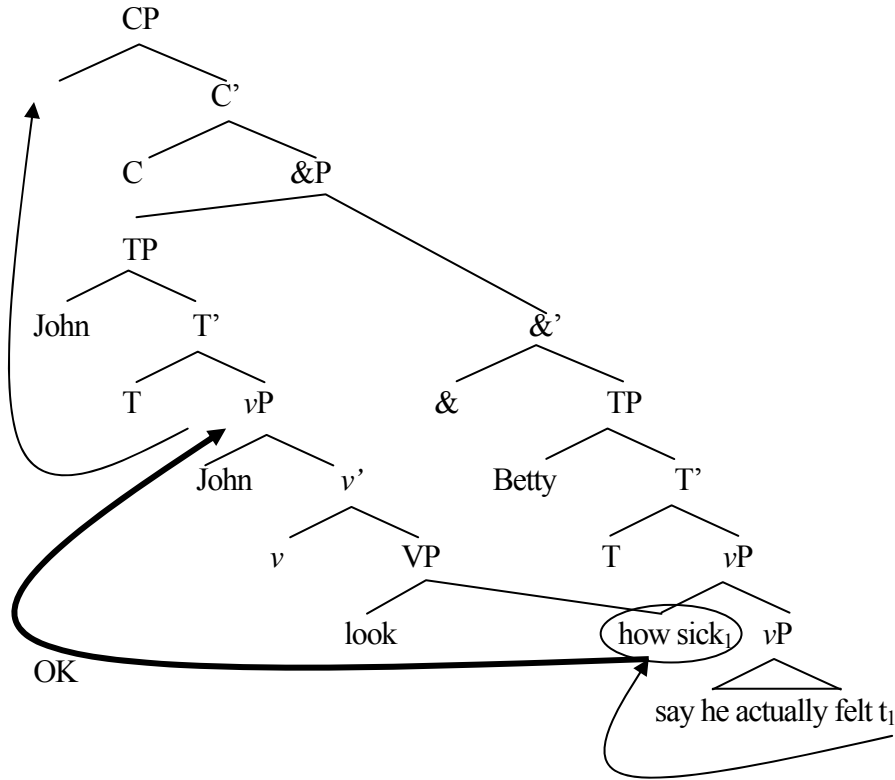


(35) *How sick* cannot move out of the adverbial clause before the adverbial clause is merged with the matrix clause because it does not move to [Spec FP] for Case.

No categorial restriction with ATB movement

- (36) a. How<sub>1</sub> did Deborah cook the pork t<sub>1</sub> and Jane cook the chicken t<sub>1</sub>?
- b. [How sick]<sub>1</sub> did John look t<sub>1</sub> and Betty say he actually felt t<sub>1</sub>?
- c. This is a topic [about which]<sub>1</sub> you should think t<sub>1</sub> and I should talk t<sub>1</sub>? (Postal 1993)

(37) [How sick]<sub>1</sub> did John look t<sub>1</sub> and Betty say he actually felt t<sub>1</sub>?

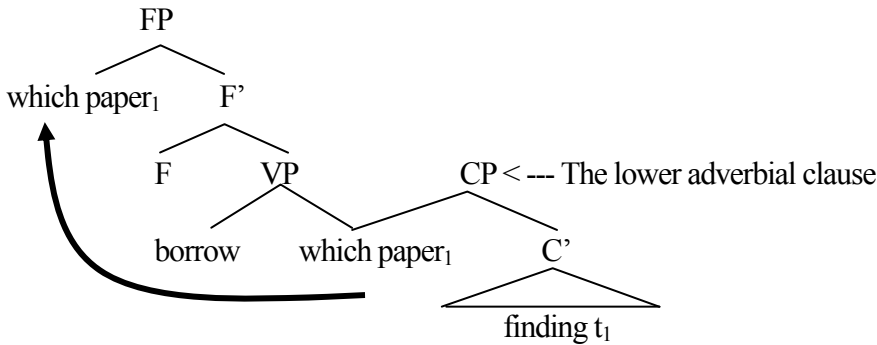


<5> Island effects

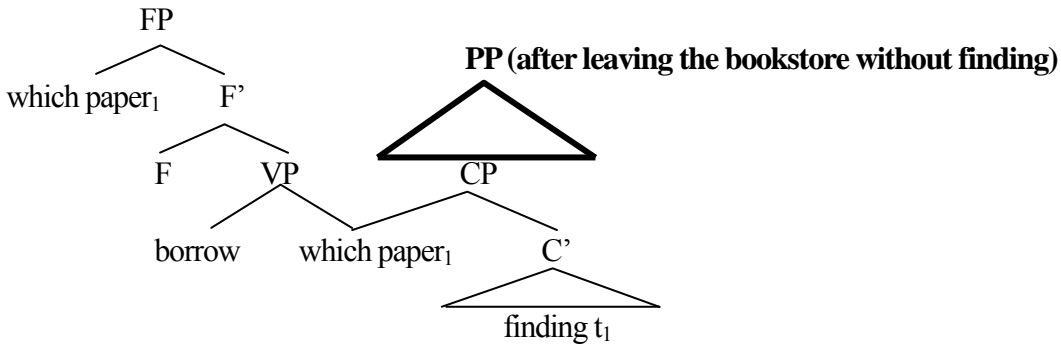
(38) \*Which book<sub>1</sub> did you borrow t<sub>1</sub> after leaving the bookstore without finding pg<sub>1</sub>?

Unwelcome derivation

(39) a. Which paper<sub>1</sub> moves to a Case-checking position [Spec, FP].



b. The higher adverbial clause is built up and the derivation proceeds.....



----- > Nothing so far blocks this derivation.

Nunes and Uriakereka's (2000) solution

(40) a. The computational system cyclically accesses the Numeration.

b. The Numeration involves subarrays.

(41) Each subarray involves either  $v$  or C. (Chomsky 2000)

(42) Prepositions that select clausal complements must belong to the “subordinating array”, and not to the array associated with the complement clause. (Nunes and Uriagereka 2000: 40)

(43) Which paper<sub>1</sub> did you file t<sub>1</sub> without reading pg<sub>1</sub>?

(44) N = { {<sub>A</sub> PRO,  $v$ , reading, F, which, paper}  
          {<sub>B</sub> C, T}  
          {<sub>C</sub> you,  $v$ , file, F, **without**}  
          {<sub>D</sub> C<sub>Q</sub>, did} }

(45) a. The computational system works with one subarray at a time.  
      b. A subarray must be used up before a new subarray is selected.

(46) Subarray A --- > [<sub>VP</sub> PRO  $v$  F reading which paper]

Possibility (i) --- > Subarray C --- *without* cannot be used. --- > \* We cannot select a new subarray.

Possibility (ii) --- > Subarray B --- > [which paper C [T [<sub>VP</sub> PRO  $v$  which paper F reading which paper]]]

--- > Subarray C: *without* is merged with CP.

--- > Subarray D --- > OK

(47) \*Which book<sub>1</sub> did you borrow t<sub>1</sub> after leaving the bookstore without finding pg<sub>1</sub>?

(48) N = { {<sub>A</sub> PRO,  $v$ , finding, F, which, book}  
          {<sub>B</sub> C, T}  
          {<sub>C</sub> PRO,  $v$ , leaving, F, the, bookstore, without}  
          {<sub>D</sub> C, T}  
          {<sub>E</sub> you,  $v$ , borrow, F, after}  
          {<sub>F</sub> C<sub>Q</sub>, did} }

Unwelcome derivation illustrated in(39)

(49) Subarray A --- > [PRO  $v$  finding which book F which book]

--- > Subarray B: [which book C [T [PRO  $v$  finding which book F which book]]]

---- > Subarray E (to build up the matrix clause): *after* cannot be used. --- > Subarray E cannot be used up.

--- > \* We cannot select a new subarray.

Derivation consistent with (45)

Subarray A --- > [PRO  $v$  finding which book F which book]

Subarray B --- > [which book C [T [PRO  $v$  finding which book F which book]]]

Subarray C --- >

[PRO  $v$  leaving the bookstore F the bookstore **without [which book C [T [PRO  $v$  finding which book F which book]]]**]

*Adjunct Island*

### 3. A comparison with Nunes’s (2001, 2004) sideward approach

(50) Move --- > Copy + Merge + Form Chain + Chain Reduction (Nunes 2001, 2004)

(51) a. [<sub>K</sub> .....  $\alpha^i$  .....]       $\alpha^i$  < --Merge --> [<sub>L</sub> .....]      (K and L are independent syntactic objects.)

Copy     $\uparrow$

b. ---- > [<sub>K</sub> .....  $\alpha^i$  .....]      [<sub>M</sub>  $\alpha^i$  [<sub>L</sub> .....]]

Derivation of PG

(52) Which paper did you file without reading?

(53) a. K= [CP C [TP PRO<sub>j</sub> [T' T [vP t<sub>j</sub> [v' v [VP reading [which paper]<sup>i</sup>]]]]]] (Adverbial clause)  
 b. L= file

(54) a. K= [CP C [TP PRO<sub>j</sub> [T' T [vP t<sub>j</sub> [v' v [VP reading [which paper]<sup>i</sup>]]]]]]  
 b. L= file [which paper] ← *Copy and Merge (Sideward movement)*

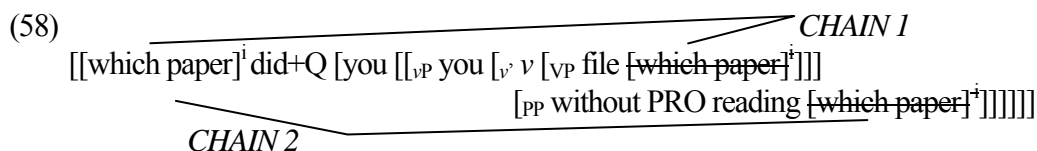


*Movement of which paper to [Spec, CP]*

(56) [[which paper]<sup>i</sup> did+Q [you [[vP you [v' v [VP file [which paper]<sup>i</sup>]]] [PP without PRO reading [which paper]<sup>i</sup>]]]]]]

---- > Form Chain applies.

(57) The *wh*-phrase in the matrix [Spec, CP] forms a chain with the *wh*-phrase in the object position and with the *wh*-phrase in the adverbial clause. --- > The lower copies are deleted.



(59) Non-distinct copies are problematic in terms of linearization at PF.

(60) a. *which paper* (at [Spec, CP]) precedes *file*.  
 b. *file* precedes *which paper* (at the complement of *file*). -- > *violation of antisymmetry*

(61) Antisymmetric: Not (xLy & yLx)

(62) Deletion of the lower copy of *which paper* makes the ill-formed structure linearizable at PF.

(63) *Chain Reduction*

Delete the minimal number of constituents of a nontrivial chain CH that suffices for CH to be mapped into a linear order in accordance with the LCA. (Nunes 2001: 308)

Residual issues with Nunes (2001, 2004)

<1> C-command requirement on Form Chain

(64) For the nontrivial chain CH = (α, β), α has to c-command β.

**Licensing at S-structure**

(65) a. \*Who filed which report without reading?  
 b. Who [[filed [which report]] [without PRO reading [which report]]]?  
 ← *Not c-command* →

(66) a. \*Who read what before John read pg?  
 b. \*Who read what before John did? (Agbayani and Ochi 2008)

(67) Who read what before John did [~~read what~~]? --- > should be ok in terms of linearization, but...

Under the proposed multiple dominance analysis of

(66b)

(68) a. Derivation 1: *What* has an activation feature. --- > The activation feature is not checked.

b. Derivation 2: *What* has no activation feature.

--- > *What* stays at [Spec, FP] in the adverbial clause. When the adverbial CP is created and then the matrix verb is going to undergo merge with *what*, FP is not accessible to the computational system anymore.

--- > VP-ellipsis taking place in the adverbial clause can neither eliminate the unchecked activation feature nor solve the cyclicity problem.

Conceptual question

(69) Why is “c-command” necessary for Form Chain?

(70) *PRO* gate

a. [PRO<sub>1</sub> being kissed by his<sub>1</sub> mother at graduation] made everyone<sub>1</sub> angry at her.

(Kiguchi and Hornstein’s (2005) (1d))

b. [everyone<sub>1</sub> being kissed by his<sub>1</sub> mother at graduation] (building up the gerundive subject)

c. [everyone<sub>1</sub> being kissed by his<sub>1</sub> mother at graduation] [everyone<sub>1</sub> angry at her]

→ Sideward movement

(Sideward movement of *everyone* to the small clause)

d. [~~everyone~~<sub>1</sub> being kissed by his<sub>1</sub> mother at graduation] made everyone<sub>1</sub> angry at her.

(71) There is no c-command relation between the copies of *everyone*, but the copy in the gerundive subject is deleted.

<2> Categorical restriction

(72) The antecedent of a PG should be a noun phrase.

(73) a. \*How<sub>1</sub> did Deborah cook the pork t<sub>1</sub> after cooking the chicken pg<sub>1</sub>?

b. \*[How sick]<sub>1</sub> did John look t<sub>1</sub> without actually feeling pg<sub>1</sub>?

c. \*This is a topic [about which]<sub>1</sub> you should think t<sub>1</sub> before talking pg<sub>1</sub>? (Postal 1993)

(74) PP arguments behave like adjuncts with respect to being unable to cross a weak island.  
(Hornstein and Nunes 2000)

(75) a. \*How<sub>1</sub> do you wonder whether Jane cooked the chicken t<sub>1</sub>?

b. \*this is a topic [about which]<sub>1</sub> I wonder whether you want to talk t<sub>1</sub>? (Nunes 2004:137)

*Contrast between PP argument and Adjunct* (cf. Agbayani and Ochi 2008)

(76) a. ?Which shelf do you wonder whether to put the book on t?

b. ??On which shelf do you wonder whether to put the book t?

c. \*Why do you wonder whether to put the book on the shelf t? (Lasnik and Saito 1992:148)

#### 4. Summary

(77) PG involves multiple dominance. The proposed analysis naturally captures the following properties of PG:

- a. Anti-c-command requirement
- b. Licensing at S-structure
- c. Licensing by A-bar movement
- d. Categorical restriction
- e. Island effects

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