

University of Leipzig, Department of Linguistics
SS2015 – module 04-046-2011/IGRA08
Sharing constructions

Martin Salzmann – martin.salzmann@uni-leipzig.de
www.martinsalzmann.com/teaching.htm#2015_Sharing

Nunes (2004): Sideward Movement

- The challenges posed by parasitic gaps:

(1) Which book did you file __ [without reading __]?

- apparent extraction from two positions simultaneously
- apparent extraction from an adjunct
- can be embedded in exactly one strong island:

(2) *Which book did you file _ [without knowing [the author who wrote __]]?

- how can 2 elements become 1? – structure preservation
- how to escape the island?
- if only 1 element moves – c-command?
- if only 1 element moves – Activity Condition?

- Major results of the paper:

- Move is not an atomic operation but composed of independent operations: Copy + Merge + Chain Formation + Chain Reduction: Merge is the same operation in External and Internal Merge
- separation of Merge from Movement makes *Sideward Movement* possible: Copy of X and Merge of X with an unconnected phrase marker in the workspace
- sideward movement: Nunes (2001): movement to an unconnected phrase marker:

(3) a. [Mary dislike [which book]] b. like [which book]



- Sideward Movement helps eliminate counter-cyclic movement
- Sideward Movement introduces the possibility to derive PGs and ATB by means of movement from both conjuncts by means of just 1 wh-XP

→ Can sideward movement be adequately restricted?

1 Deletion of traces

- Linearization is based on the LCA:

(4) Let X, Y be nonterminals and x,y terminals such that X dominates x and Y dominates y. Then if X asymmetrically c-commands Y, x precedes y.

- The Copy Theory of Movement leads to a problem for linearization: Having 2 instances of the same element leads to contradictory linearization instructions: *John* should both precede and follow *was*

(5) [TP Johnⁱ [T' [VP was [VP kissed Johnⁱ]]]]

- Chain reduction which deletes all but one copy makes linearization possible (no contradictions anymore)
- Realization of multiple copies is taken to be possible if one of the copies undergoes reanalysis with some head: the LCA does not apply word-internally

(6) Wen glaubst du, wen Maria __ liebt?
whom think.2SG you whom Mary loves
'Who do you think Mary loves?'

→ Chain Reduction is an independent operation

- Why does deletion normally affect the non-top-most copies?

(7) *Formal Feature Elimination (FF-Elimination)*

Given the sequence of pairs $\sigma = \langle (F,P)_1, (F,P)_2, \dots, (F,P)_n \rangle$ such that σ is the output of Linearize, F is a set of formal features, and P is a set of phonological features, delete the minimal number of formal features in order for σ to satisfy Full Interpretation at PF.

→ Since the head of the chain does not have any unchecked features left, it is most economical to retain the highest copy (which does not require any instances for FF-Elimination) while retention of a lower copy would require at least one instance of FF-Elimination (note: transderivational economy)

→ if Chain Reduction and Merge are independent operations, Move need no longer be considered an atomic operation → the four parts of Move need not always cluster: Copy + Merge can be dissociated from Form Chain and Chain Reduction: Sideward Movement

2 How Sideward Movement makes counter-cyclic movement cyclic

2.1 Relative Clause adjunction

- (8) a. *Which claim that John₁ was asleep was he₁ willing to discuss?
b. Which claim that John₁ made was he₁ willing to discuss?

- Classical account: adjuncts (RCs = adjuncts) unlike complements can be merged late → RC is adjoined after *wh*-movement:

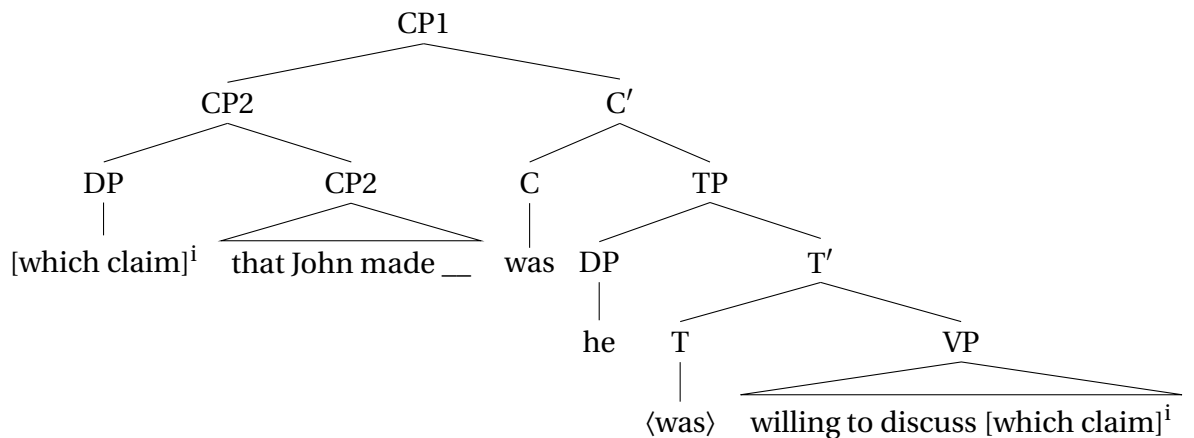
(9) [[which claim] [Op that John made __]] was he willing to discuss [which claim]]

- reanalysis in terms of sideward movement: *wh*-phrase is copied to the unconnected RC, then RC+*wh*-DP are merged into SpecCP:

(10) a. K = [CP₁ was+Q [he willing to discuss [DP which claim]ⁱ]]
b. L = [CP₂ Op that John made __]

(11) a. K = [CP₁ was+Q [he willing to discuss [DP which claim]ⁱ]]
b. L = [CP₂ [DP which claim]ⁱ [CP₂ Op that John made __]]

(12)



- note: this requires a special definition of *checking domain* and c-command: segments don't count (cf. head-movement)

(13) α c-commands β iff X and Y are categories (not segments), no segment of α dominates β ($= \alpha$ excludes β), and every category that dominates α also dominates β .

- what licenses adjunction of DP to CP? Does this give us the correct semantics of an RC?

2.2 Head movement

- The verb to be moved is copied to an unconnected phrase marker, thereafter, the complex head is merged with the original structure:

(14) a. $K = [_{VP} \dots V \dots]$
 b. $L = T$

(15) a. $K = [_{VP} \dots V^i \dots]$
 b. $M = [_{T} V^i [_{T} T]]$

(16) $[_{TP} [_{T} V^i [_{T} T]] [_{VP} \dots V^i \dots]]$

- the result is the same as under the traditional head-adjunction theory (note that for chain formation one needs the more liberal definition from above)
- what licenses/triggers sideward movement here? There cannot be attraction/Agree as there is no c-command

2.3 Covert movement

- covert movement is replaced by cyclic movement (phrasal and feature movement)
- Non-cyclic movement of formal features (= precursor of Agree) is reanalyzed as cyclic feature movement via sideward movement → works like head-movement:

(17) a. $K = [_{VP} \dots V^i \dots]$
 b. $M = [_{T} FF(V^i) [_{T} T]]$

(18) $[_{TP} [_{T} FF(V^i) [_{T} T]] [_{VP} \dots V^i \dots]]$

3 Parasitic Gaps

- the challenges posed by PGs
 - PGs can be separated from their licensor by one but not more islands
 - Parasitic gaps are licensed at S-Structure
 - Parasitic gaps cannot be c-commanded by the readl gap
 - Parasitic gaps cannot be licensed by A-chains

3.1 Basic idea

- Sideward movement applies if a numeration does not include enough arguments for the predicates → DPs can bear more than one θ -role
- (19-a) is reduced to (19-b), building (20-a); then (20-b) is introduced

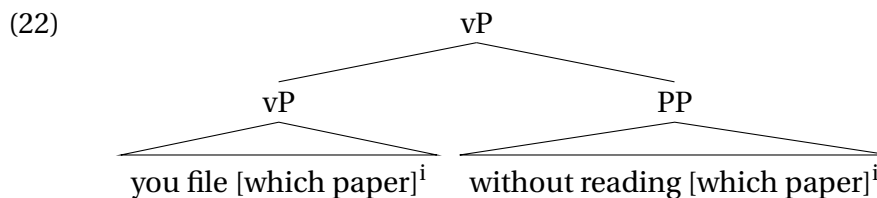
- (19) a. {which₁, paper₁, Q₁, you₁, did₁, v₂, file₁, without₁, C₁, PRO₁, T₁, reading₁}
 b. {which₀, paper₀, Q₁, you₁, did₁, v₁, file₀, without₁, C₀, PRO₀, T₀, reading₀}

- (20) a. K = [CP [TP PRO_j [T' T [vP t_j [v' [VP reading [DP which paper]]]]]]]
 b. file

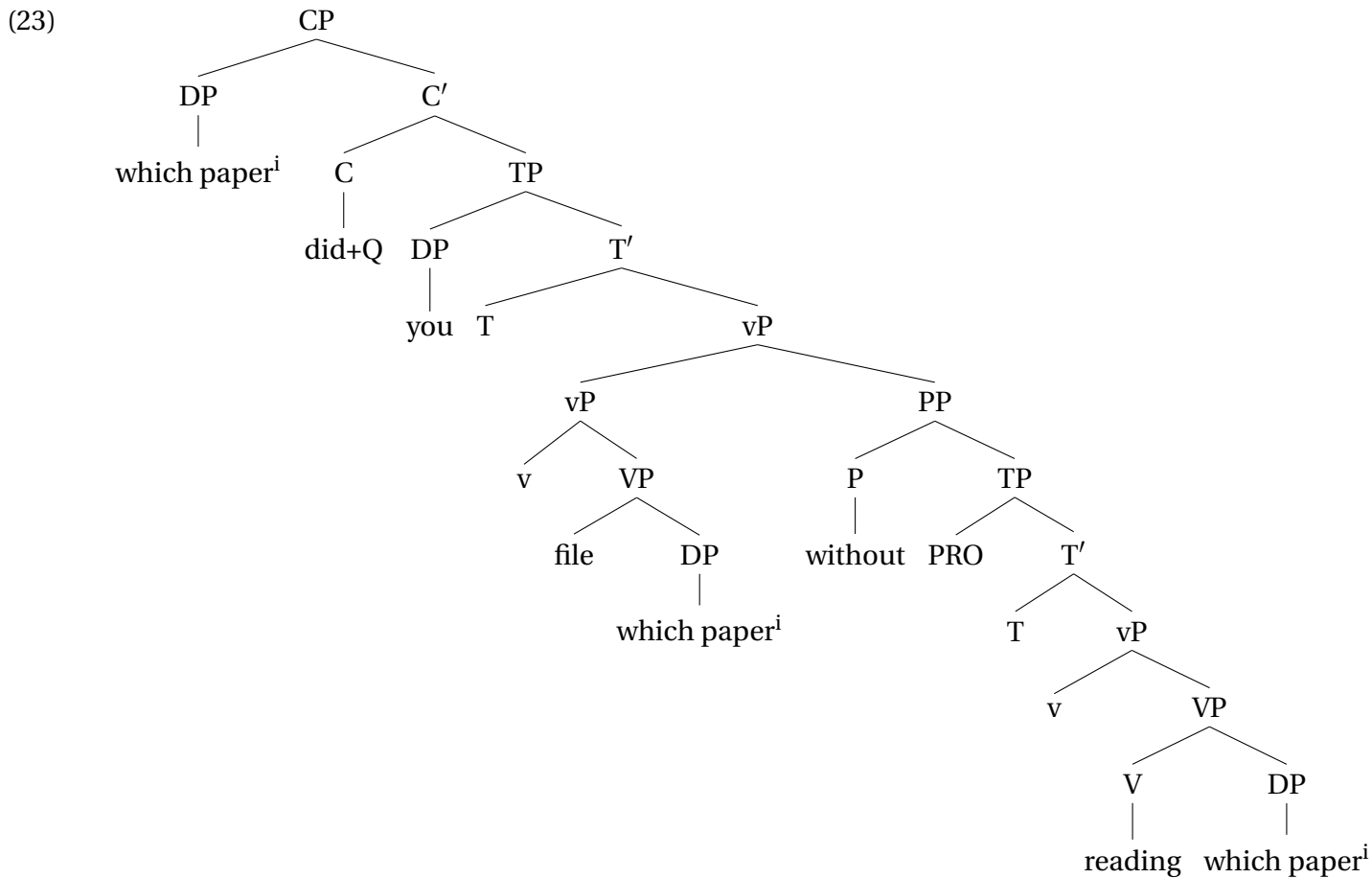
- There are still 2 θ -roles to be discharged (by *file* and v) but there is only one item in the numeration left, *you*. → [which paper] is copied to *file*

- (21) a. K = [CP [TP PRO_j [T' T [vP t_j [v' [VP reading [DP which paper]ⁱ]]]]]]
 b. M = [vP file [DP which paper]ⁱ]

- Structure building continues, the adjunct PP is adjoined to the matrix vP:



- the final structure obtains after another copy of *which paper* is made and merged in SpecCP:



- chain formation: top-most copies forms 2 chains, with each lower wh-XP
- no intervention: lower copies do not c-command each other
- result: 1 antecedent, 2 gaps

3.2 Islandhood

- Why is regular extraction from an island blocked?
- Why do island effects show up if the pg is embedded in another island?

- (24) a. *Which book did you review this paper without reading __?
 b. *Which book did you borrow __ after leaving the bookstore without finding __?

- regular islands (24-a): The wh-phrase is stuck within the island because there is no trigger in the matrix clause to make a copy of the wh-XP (such as θ -roles) → the wh-phrase is still within the adjunct when the adjunct is merged → extraction is blocked (CED)
- regular parasitic gaps: copying proceeds before the adjunct is merged with matrix vP
- double islands (24-b): at the point where the matrix verb becomes accessible, the lower adjunct is embedded within an adjunct → extraction is blocked by the CED

- timing is crucial: verbs in the numeration are not freely accessible (to be targeted by SM) but only after they have been selected – and at that point the wh-phrase will be embedded within an island
- said to follow from cyclicity, but given that adjuncts are generally built separately, this is not completely obvious! There are arguably 2 adjuncts and one matrix vP to be built and it is

not obvious why they cannot be built in parallel so that extraction would be possible *before* the adjuncts are merged with the matrix vP → arguably, the numeration has to be highly structured?

- the crucial part seems to be the assumption (see book, p. 142) that the P belongs to the array of matrix v. → to complete the adjunct, one has to merge the P, and since it belongs to the matrix v of the higher adjunct, one has to continue building there – but why does the PP have to be finished first? Are the subarrays ordered?
- Perhaps one cannot have a CP without P dangling around ..

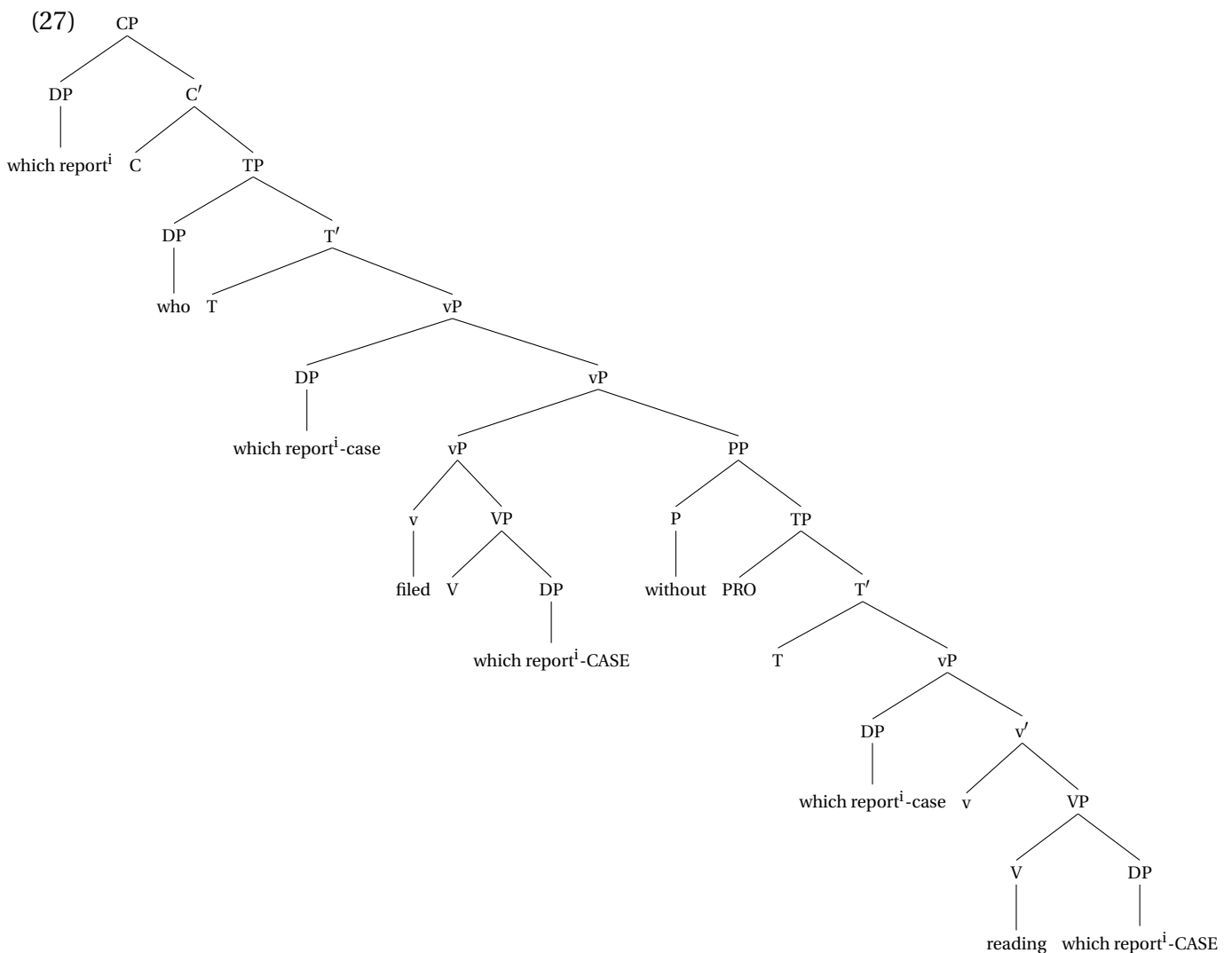
3.3 S-Structure effects

- (25) a. Which report did you file without reading?
b. *Who filed which report without reading?

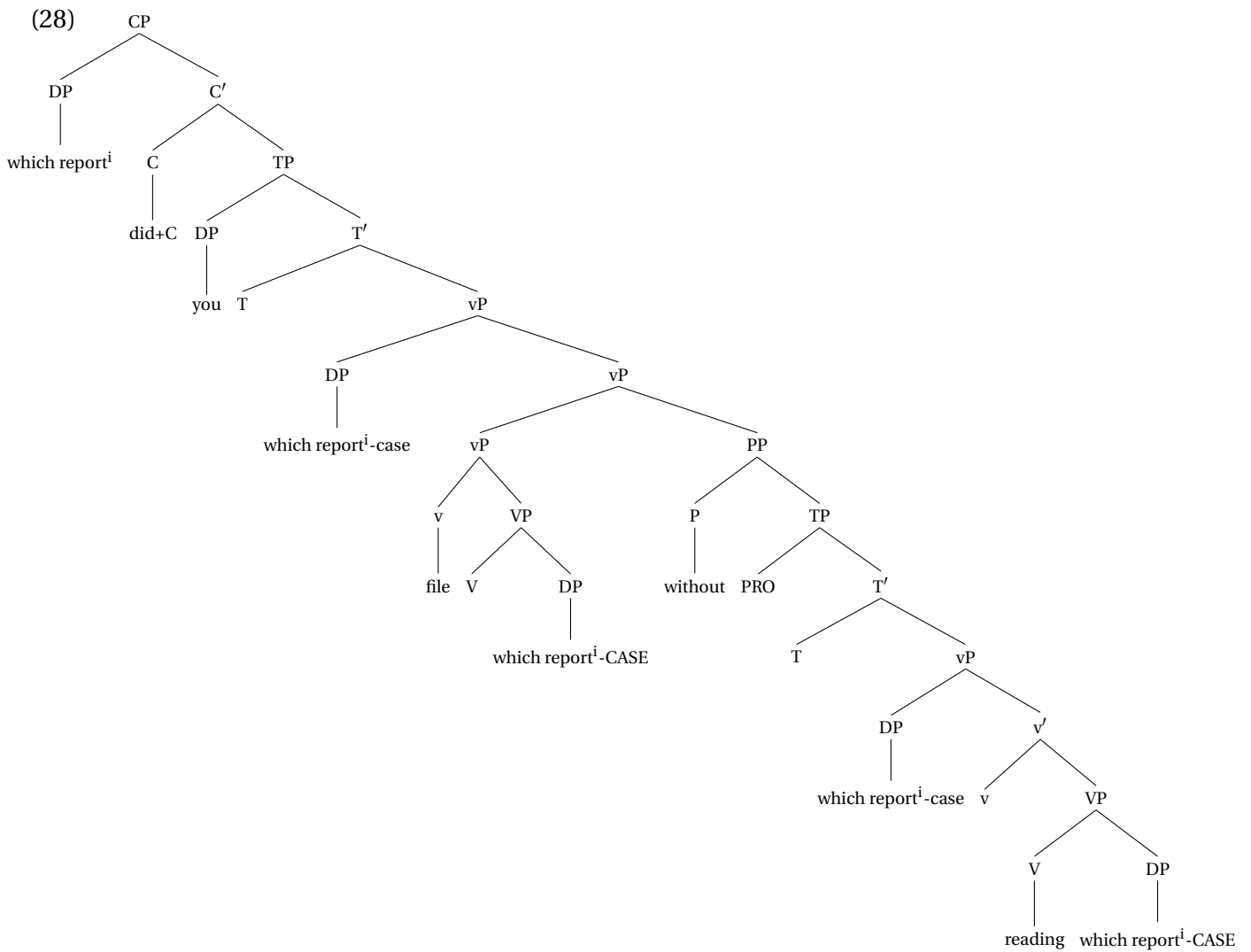
- trivial explanation: covert wh-movement takes place after spell-out → at PF no copy in SpecCP → no chain reduction, linearization fails

(26) [Who [[filed [which report]] [without PRO reading [which report]]]]

- what if covert movement takes place cyclically?
- claim: movement for Case-checking to SpecvP, crucially above the adjunct!



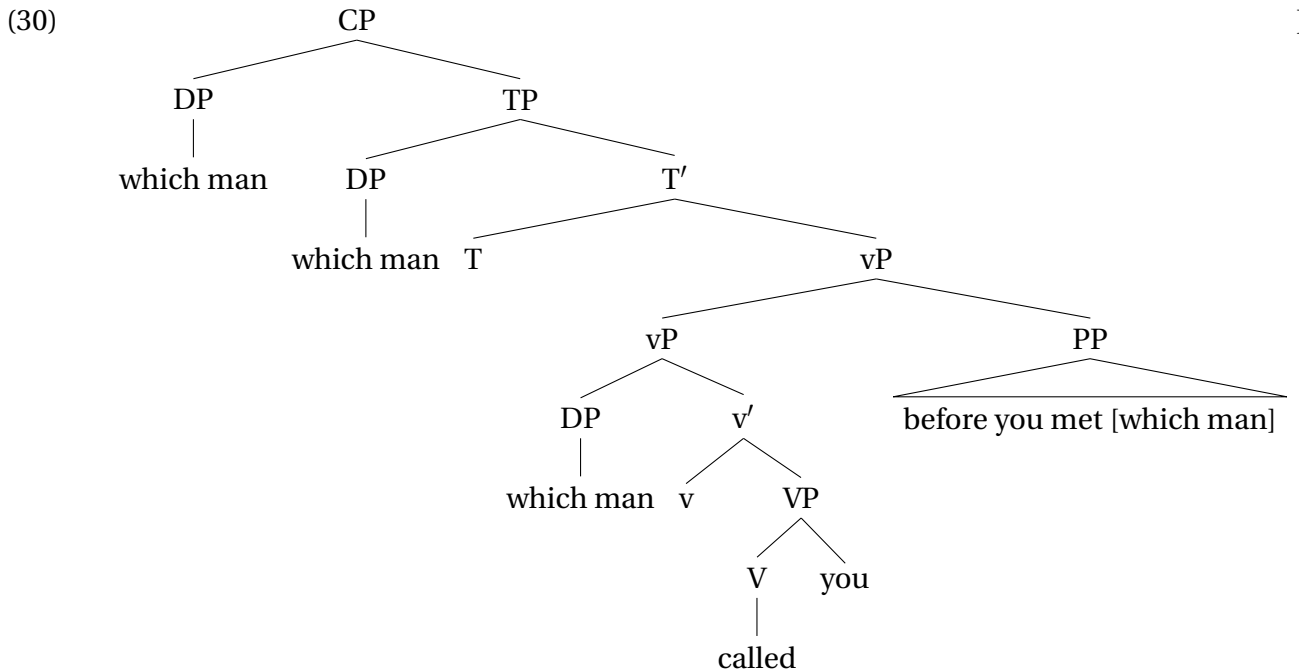
- argument: copy in matrix SpecvP can form a copy with the one in matrix VP but not with the one in SpecvP of the adjunct: PRO intervenes (MLC) + there would be multiple Case-checking → defective intervention (PRO has its case checked)
- crucially, this only works if the intermediate copy is *above* the adjunct; if it were below the adjunct, there would be no problem as the copy in SpecCP could form a copy with the two intermediate ones in SpecvP
- problem: What does this imply for parasitic gaps derived by overt wh-movement? – shouldn't the intermediate copy cause a problem?



3.4 Structural requirements

- the PG may not be c-commanded by the licensing gap:

- (29) a. *I wonder which man __ called you before you met __
 b. I wonder which papers John said were __ unavailable before reading __



- the copy inside the adjunct cannot be part of a chain:
 - not with the intermediate in matrix SpecTP: MLC-problem *you* intervenes
 - not with the one in SpecCP: now the one in SpecTP intervenes because it also has an unchecked wh-feature
- (29-b) is grammatical because there is (by assumption) no intermediate copy above the adjunct → the top copy can form a chain with the copy inside the adjunct

4 Discussion

- What is the role of intermediate copies? Would they affect chain formation?
- Case checking - what about the activity Condition?
- ATB-movement is also possible with adjuncts - how could SM be triggered?

References

Nunes, Jairo (2001): 'Sideward Movement', *Linguistic Inquiry* 32(2), 303–344.