Label Assignment in Restrictive Relative Clauses Needs Semantic Information

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Aim

- Provide an unified derivation for restrictive relative clauses that predicts matching and raising behavior of the head noun
- Examine the nature of syntactic labels
- Establish the algorithm responsible for assigning derived structures a syntactic label
- Combine the three above into a convincing analysis

Do Projections matter

- Merge takes A, B and makes a set {A,B}
  - How are the properties of {A,B} computed?
  - Does it matter?

Free relatives

- Citko (2006) attempts to reconcile two possible structures via ambiguous projection

  1a. John plays [DP Ø [CP whatever [TP he likes t]] (Comp Account)

  2 b. John plays [DP whatever [CP Ø [TP he likes t] (Head Account)

Head movement

- Most theories of re-labeling assume head movement
- Cecchetto & Donati (2011)
  - N movement in relative clauses
  - Head movement can re-label the structure

Relative clause formation as

nominalization

- The problem with head movement in relative clause nominalization is that does not work well even for free relatives
  - Complex free relative heads (Citko 2010)
    Ja kupię co+kolwiek ty kupisz
    I buy what+ever you buy
  - In languages like Hebrew, Italian free relative heads can be complex

Complex free relative heads

- Bresnan & Grimshaw (1978)
  I will work on whatever problems John assigns t
- Movement of [whatever problems] is not head movement
- We cannot argue that [problems] is an adjunct of whatever, like C&D argue for restrictive relative clauses

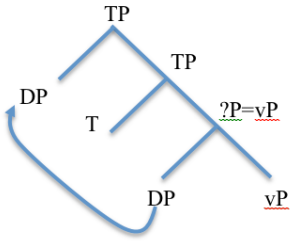
Chomsky 2013

- Merge {A, B}
  - if A, or B is a head then label the set with head category (Minimal Search)
  - if neither A, B a head then move A, or B or not label.

EPP

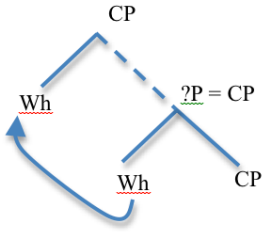
- Chomsky (2102), EPP is an example of rescuing labeling via movement

- Why, assuming copy theory, should movement make a difference for projection?
- Minimal Search bypasses copies
- Then head movement should make constituents invisible



Cyclic movement

- Chomsky (2102)Cyclic movement
  - CP can project after Wh- raises further
  - Why is there no issue at the final landing site?



Feature checking

- In Chomsky's system theta marking is not feature checking, hence projection issues in Spec vP, but not Spec-TP
- Final site of cyclic movement is feature checking, hence projection without further movement

Why does movement rescue labeling

- Minimal search by-passes copies
  - problems with head movement
    - a VP is still a VP even after V->T
- Antisymmetry (Moro 2000)
  - PF linearization requires antisymmetric c-command
  - But why should linearization care about labeling?

Nature of Labels

- Syntax is Phase based
- Semantic composition must also be phase by phase
- To avoid over-generation of semantic category mismatches assume that
- Syntactic computation has access to semantic type information

Labels

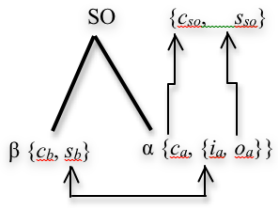
- A label is a two membered set l={c,s}, where c=category, s=semantic type (see Bach 1979)
- semantic type is composed of i= input/ domain, o=output/codomain
- Category is classical: +/- V, +/-N
- There is a relation between c and s, but details not worked out here

Label assignment

- Probing Algorithm: The label of a syntactic object {α, β} is the feature(s) which act(s) as a Probe of the merging operation creating {α, β} (Donati 2006, Donati & Checchetto 2011).
- This is now going to be modified to add semantic type, making the label a two membered set l={c,s}.

Label assignment

- When a is the head that checks features label assignment proceeds in the following manner
- Cso = Ca, Sso = Oa



Cases when label assignment fails

Conditions for partially labeled structures:

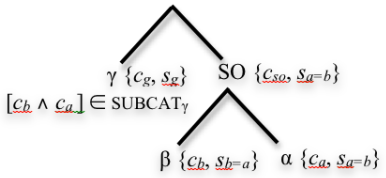
For a given {SO}={α, β} to be Merged with {γ} all the following conditions have to be met in order for {SO} to receive a partial label $l' = \{c_u, s\}$, where c_u is underspecified as either the category {α} or {β}, the following conditions have to be met:

A. The semantic type of {α} has to equal the semantic type of {β}, and both have to be functions: $\langle s_a \rangle = \langle s_b \rangle$

B. For a given {γ} that is merged with {SO}, the sub-categorization frame of {γ} has to be compatible with the category of both {α} and of {β}. $\{c_a\} \in \{\text{Subcat } \gamma\}$, and $\{c_b\} \in \{\text{Subcat } \gamma\}$

C. {γ} has to have a full label, cannot be a phase head, or its projection.

Partial label application



Predicts why movement saves labeling

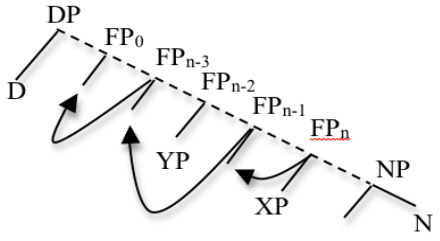
- Copies are type shifted to <e> (QR)
- having a complex label that contains semantic type information automatically distinguishes head from copy
- Movement saves labeling just like QR saves type mismatch

Restrictive Relative clauses

- Cinque (2008) RC's are derived via two Nominal elements
- I will modify his proposal and a adopt a structure incorporating Extended Nominal Projections (Cinque 2010)

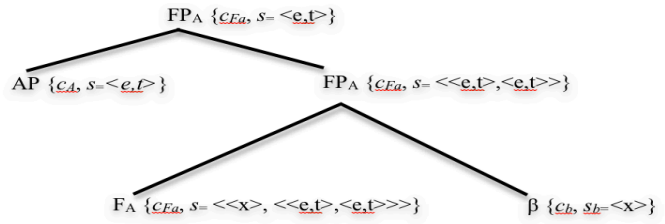
Nominal Functional Architecture

- The operation of Roll-up is the sequential application of Merge to functional projections of a given XP, forming FPh= {FPk, FPh}, where h>k.
- Example of roll-up of DP= D XP N YP
  [$_{DP}$ [$_{D}$The] [$_{XP}$blue] [$_{N}$book] [$_{YP}$ that is on the table]]



Roll up

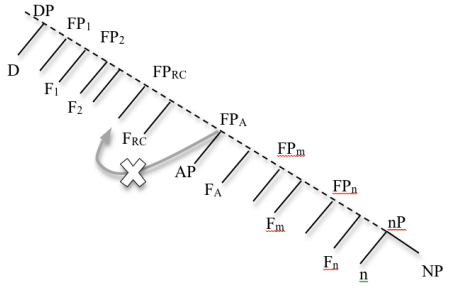
- FP's have to be able to probe and subcategorize for lower FP's. An FP with an XP in its Spec has to be of the same type as the XP by virtue of the fact that these cartographic heads are in part syntactic reflexes of semantic composition.
- This means that an FP with an AP in its Spec will be of the same semantic type as the AP:



Internal head noun

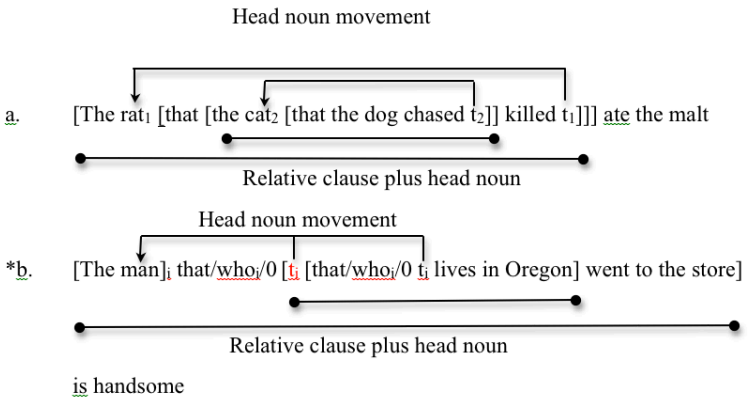
- Internal DP is deficient in that the head F_{RC} does not induce 'roll up' of the extended functional projections. A null dummy AP is inserted into the slot of a potential RC

(F_{RC}= Functional position for restrictive relative clauses, m<n).



Why need deficient NP

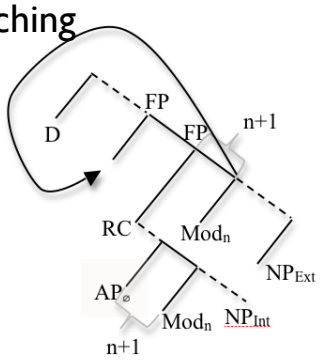
- The internal nominal cannot host an RC



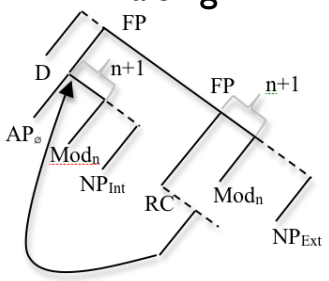
Why a null AP

- NP deletion requires identity of amount of modifiers

Matching

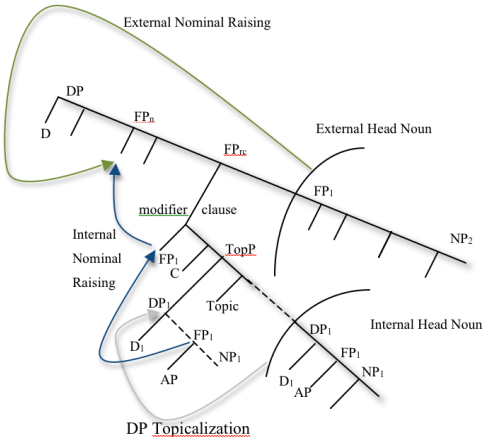


Raising



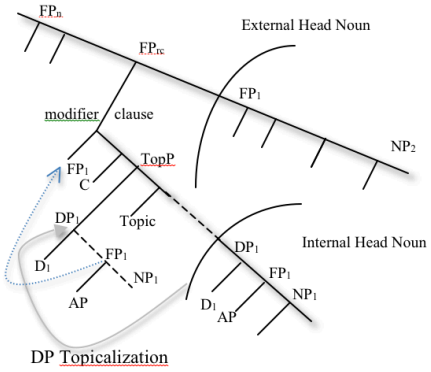
Two derivations in one

- Internal DP is topicalized (Bianchi 2000)
- Deleted via Topic-Drop (Huang 1984)
- Subpart of DP (FP_I with AP) cyclic moves to Spec CP
- Giving SO= $\{FP_A, CP\}$



Relative clause re-labeling

- Cyclic movement of Functional Head with AP drived by the fact that there is a possible landing site in extended NP domain
- look ahead like any other successive cyclic movement
- This is a partial label configuration

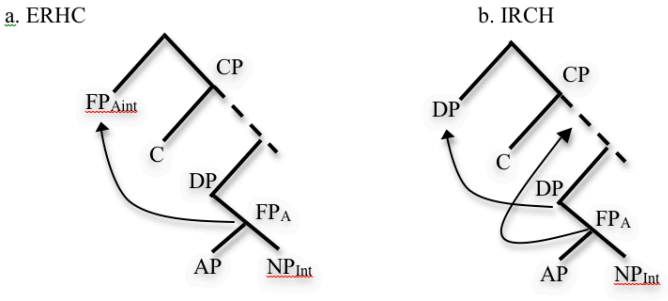


Indefinite nature of internal NP

- Cinque provides arguments from Italian that the internal Nominal is indefinite in nature.
- I argue that this is not because the DP layer is missing, but because the DP is split and lower part an raise.
- Indefinite nature similar to Split topic Ott (2011)

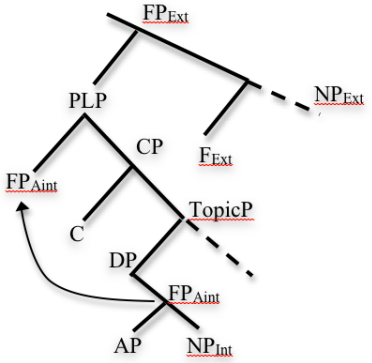
IRHC vs ERCH

- Depends what part of Split DP can move out of the clause. Korean and Japanese show both



Partial label in RC's

- FPext is not a phase head
- FPA and CP sate semantic type
- FPext can take both CP, or FPA
- No feature checking

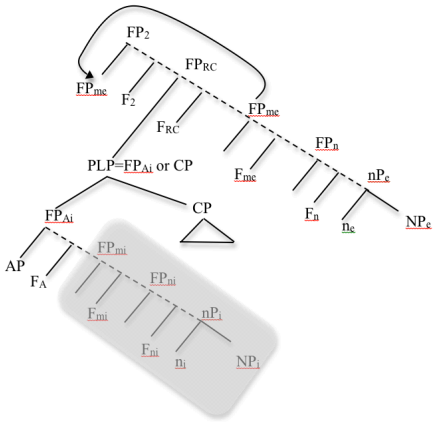


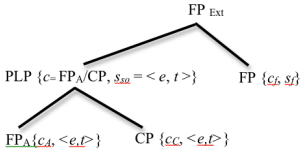
Matching can be AP

- Relative clauses derived where the external nominal deletes the internal can be AP's
- That is why DegP modification is possible in Matching
- The clausal modifier is an AP

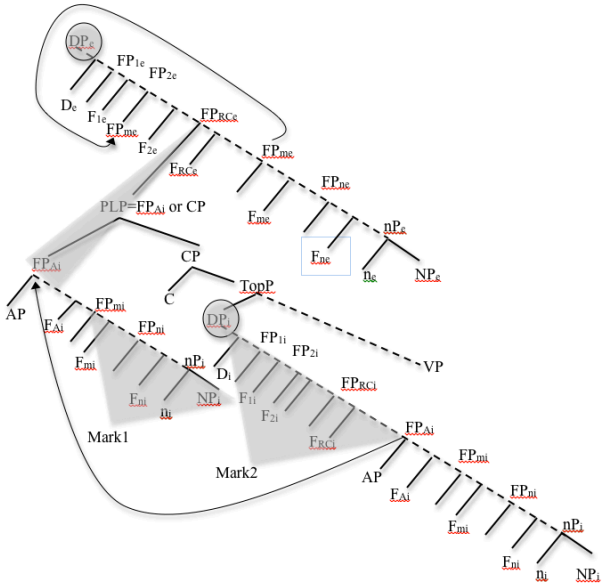
Matching possible relabeling

- PLP can be CP, or AP after Spell out.
- NP deletion under identity (shaded)



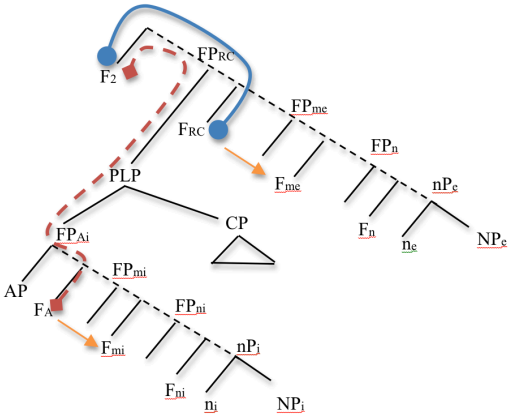


Relative markers spell out of deletion

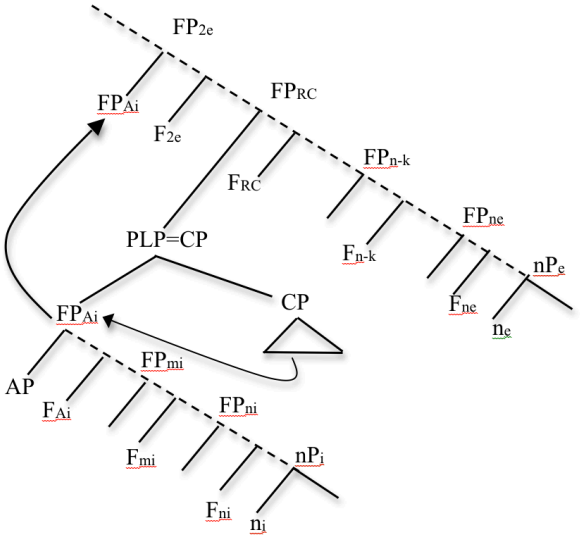


Raising is grafting

- Two possible paths for F2 to probe. Solid line probing down the root, via the head resulting in matching (internal nominal raised). Dashed line probing down the Spec, and grafted structure resulting in internal nominal raising and a raisng structure. Orange arrow points to the functional head down which subsequent roll-up will proceed.



Raising PLP= CP



Relative markers

- There is correlation between type of derivation and relative markers.
- But it is not 100%
- This is predicted here

Resumptive pronouns

- Functional relative clauses (Sharvit 1999) will be assumed always raisisng
- But possible with both resumptive and non-resumptive
- Predicted since resumption results from Topicalization which can feed nominal raising out of CP
- But amount readings are not possible with functional RC's, because they are CP's

DP->TP

- The Subject is merged with vP
- Either can project provided we assume the DP and VP are same type
- T obviously selects for both
- T is not a phase head

Free relatives

- We need to assume that wh-element, here XP, allows to re-label
- SO={XP, CP} = XP
- A lot of speculation, is there ever a real wh word like what, which in the internal relative
- whatever, whichever has to be the same type as CP

Wrap up

- We need semantic information in labels
- Syntax can do more with than we think

- Thank you for inviting me!