

Embedding (un)selected clauses

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1 The issue

- **An incomplete conjecture:**
 - a nominal shell introduces finite complements in English, so finite complementation reduces to nominalization (Chomsky 1955/1975; Rosenbaum 1965).
 - a functional D-layer may mediate the association of a verb with its clausal complement; D may be definite or a P(olarity) I(tem) (Kiparsky & Kiparsky 1971, Adger & Quer 2001, Alrenga 2005, Arsenijević 2009, Kayne 2010, Roussou 2010, Takahashi 2010, Knyazev 2016, among others).
 - yet: indefinites are neither included nor excluded from the above picture.
- **Claim:** the nominalizer (N) may also be indefinite ([-wh]).
- **Motivation:** address the following empirical question:
 - (1) Who did Mary see, do you think? (wh-slifiting; Ross 1973, Haddican et al. 2014)
 - (how) is the propositional attitude verb (*think*) associated with the question (Q) clause (CP), on the standard assumption that such verbs may only select propositions (P)?
- **Extension:** deal with two more empirical issues:

(2) Who do you think Mary saw? (long-distance wh-movement; Chomsky 1977, et seq.)

- how is intermediate wh-movement triggered, on the typical assumption that the embedded CP, being P, does not license wh-movement to its specifier?

(3) What do you think? Who did Mary see? (sequential wh-scope marking; Dayal 2000)

- (how) are the two CPs associated?

- **Roadmap**

- Wh-slifiting (section 2)
- Long-distance wh-movement (section 3)
- (Sequential) wh-scope marking (section 4)
- Conclusions (section 5)

2 Wh-slifiting

- The propositional attitude verb loses its original meaning, and acquires a more evidential/evaluative reading (“de-intensification”; Bresnan 1968):
 - restricted distribution of matrix subject (cf., Lahiri 2002; Haddican et al. 2014; many thanks to David Adger for the data)):
- (4)a. How long will the strike take, do *you* think? (2nd person pronoun)
- b. ? How long will the strike take, does *John* think? (proper name)
- c. * How long will the strike take, do *most demonstrators* think? (quantifier)

- d. * How long will the strike take, does *every demonstrator* think? (strong indefinite)
- e. * How long will the strike take, do *some demonstrators* think? (weak indefinite)
- f. * How long will the strike take, do *two demonstrators* think? (numeral)
- g. * How long will the strike take, does *anyone* think? (NPI)

– ungrammaticality under the scope of negation (cf., Haddican et al. 2014):

(5)* Who did Mary see, don't you think?

– incompatibility with *firmly/really* (modelled on Roorick 2001):

(6)* Who did Mary see, do you firmly/really think?

– restricted set of propositional attitude verbs (“weak assertive” predicates, in Hooper’s 1975 terms; from Haddican et al. 2014: 95, (58)):

(7) How old is she,

a. do you

think/suppose/believe/expect/guess/imagine/figure/predict/reckon?

b. did you

say/*insist/*declare/*maintain/*promise/*mutter/*shout?

c. * do you hope?

d. ? does it seem/appear?

e. * do you realize/regret/admit/don't you deny/have you discovered?

- The interrogative CP may or may not reconstruct:
 - Haddican et al. (2014: 93, (50)) judge (8) ungrammatical (or, marginal, at best). They claim that CP2 does not reconstruct to a position c-commanded by CP1, so, *himself* cannot be bound by *he* (Chomsky 1981).
(8) */? [_{CP2} Which picture of himself_i was downloaded most] [_{CP1} did he_i think]?
 - Informal judgement tasks set to 6 native speakers of English—2 of whom are naive in linguistics—resulted in unanimous acceptance of (9), under the corresponding reading. This suggests that CP2 must reconstruct, and so *himself* can be bound by *he*.
(9) [_{CP2} Which picture of himself_i was downloaded most] [_{CP1} does he_i think]?
- Wh-slifiting is sensitive to (*whether*-)islands, as in (10) (from Haddican et al. 2014: 93, (45)).
(10) * How old is she, do you wonder whether she said?
- There are two possible surface linear arrangements (cf., Haddican et al. 2014: 99).
(11) Who (do you think) did Mary see (do you think)?

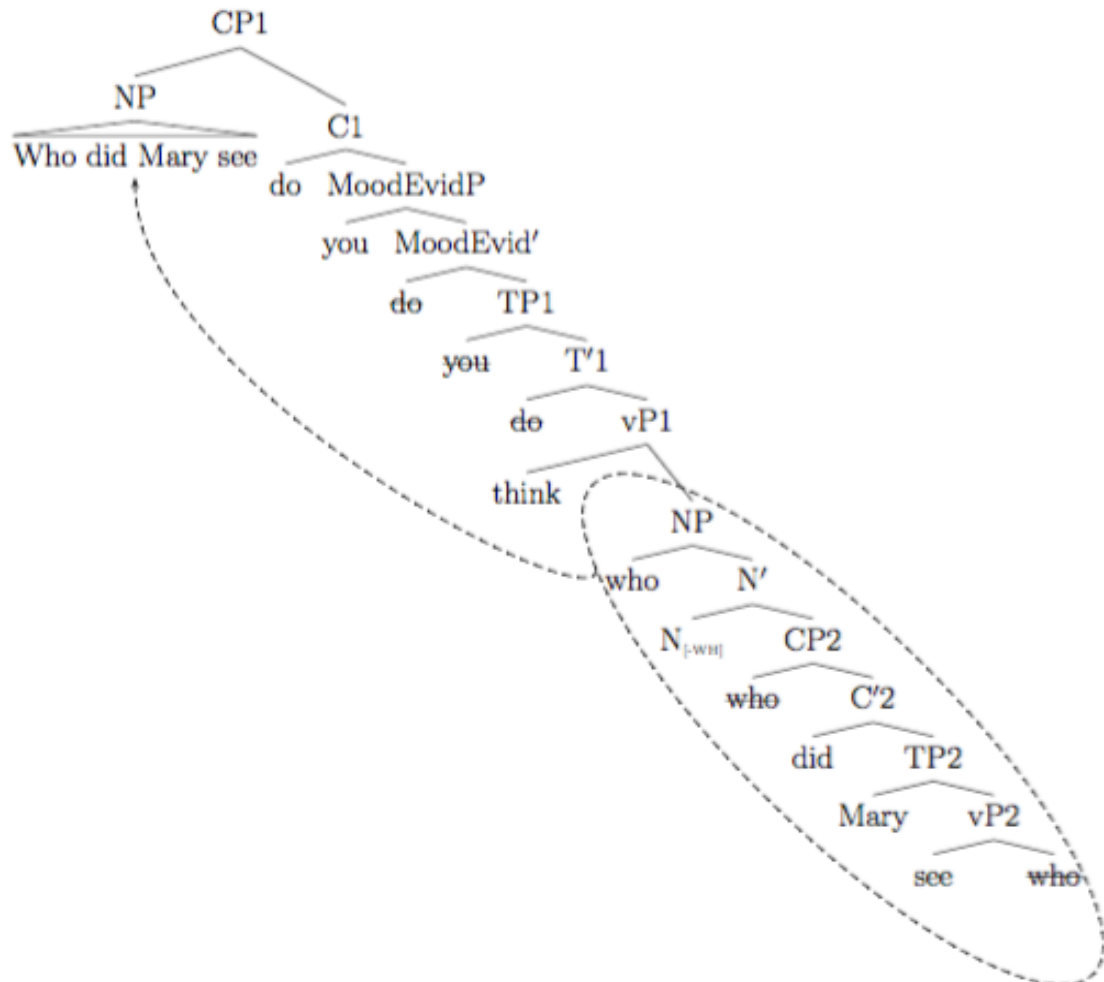
2.1 Proposal

- The propositional attitude verb bears two modalities: evidential/evaluative and interrogative. MoodEvid is responsible for the “de-intensification” of the propositional atti-

tude verb (cf., (4)-(7)), and licenses the selection of the constituent $[_{NP} N_{[-wh]} CP_Q]$. This, in turn, makes pied-piping of CP_Q possible. In fact, there are three wh-slifting strategies:

- wh-movement with clausal pied-piping:

(12)

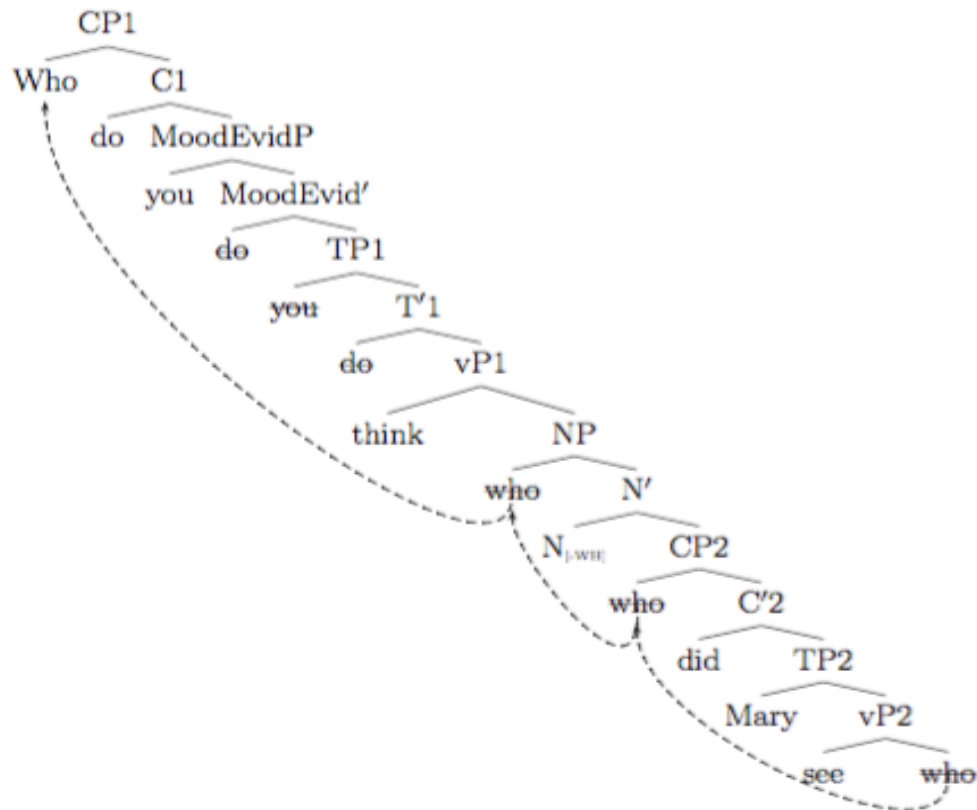


- the auxiliary *do* moves from T to MoodEvid, and from there, to interrogative C.
- the subject of CP1 moves from [Spec,TP1] to [Spec,MoodEvidP]
- CP2 is a typical wh-question, where *who* moves from its argument position to [Spec,CP2].

- $N_{[-wh]}$ agrees with *who* ([+wh]), which subsequently moves to [Spec,NP], due to the EPP of N.
- C1 agrees with *who*, which moves to [Spec,CP1], pied-piping CP2.
- Subject-auxiliary inversion (SAI) in CP2 is possible, although CP2 is embedded, on the assumption that CP2 is not lexically selected by *think* (v), but is functionally selected by N (cf., McCloskey 2006).
- CP2, then, reconstructs (cf., (9)), while wh-movement is typically blocked by islands (cf., (10)).

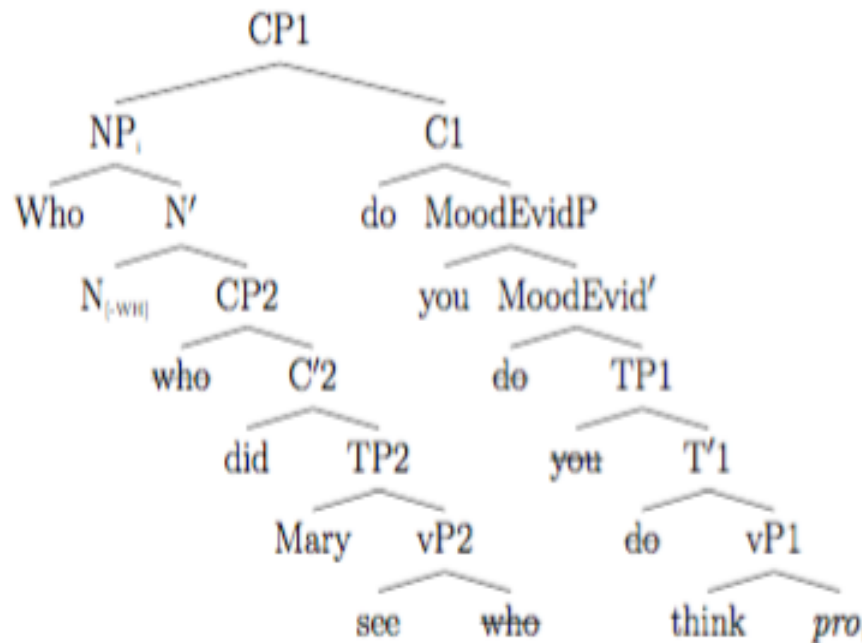
– wh-movement without clausal pied-piping:

(13)



- Pied-piping of CP2 is optional, hence the two possible arrangements in (11).
 - Notice that this sentence looks similar to long-distance wh-movement, except for SAI in CP2.
- no wh-movement, but left-peripheral base-generation:

(14)



- NP is base-generated at [Spec,CP1], while the argument of *think* is (the null element) *pro* (Manzini & Roussou 2000; Adger & Ramchand 2005), which is co-indexed with NP. This is possible on the typical assumption that the composite operation “Move” boils down to the primitives Merge and Agree (Chomsky 2004).
- Despite wh-movement, iteration is illicit:
 (15) * Who did Bill see do you think does John believe?
 (from Lahiri 2002: 506, (22))

- Two interrelated scenarios rule iteration out:
 - MoodEvid is a root phenomenon; so, embedding MoodEvid in “does John believe” is ungrammatical.
 - if we assume that “does John believe” lacks MoodEvid, selection (and pied-piping) of the wh-question “who did Bill she” becomes illegal.

3 Long-distance wh-movement

- The “triggering problem” of long-distance wh-movement:
(16) [_{CP1} Who do you think [_{CP2} Mary saw]]?
 - CP2 is a proposition, and so, may not license wh-movement to its specifier.
- Unlike in wh-slifiting, in long-distance wh-movement, the propositional attitude verb retains its original meaning:
 - unrestricted distribution of matrix subject (cf., (4)):
(17) a. How long do *you* think the strike will take? (2nd person pronoun)
b. How long does *John* think the strike will take? (proper name)
c. How long do *most demonstrators* think the strike will take? (quantifier)
d. How long does *every demonstrator* think the strike will take? (strong indefinite)
e. How long do *some demonstrators* think the strike will take? (weak indefinite)
f. How long do *two demonstrators* think the strike will

take? (numeral)

g. How long does *anyone* think the strike will take?
(NPI)

- grammaticality under the scope of negation (cf., (5)):

(18) Who don't you think Mary saw?

- compatibility with *firmly/really* (cf., (6)):

(19) Who do you firmly/really think Mary saw?

- unrestricted set of propositional attitude verbs (cf., (7)):

(20) How old,

a. do you

think/suppose/believe/expect/guess/imagine/figure/
predict/reckon?

b. did you

say/insist/declare/maintain/promise/mutter/shout?

c. do you hope?

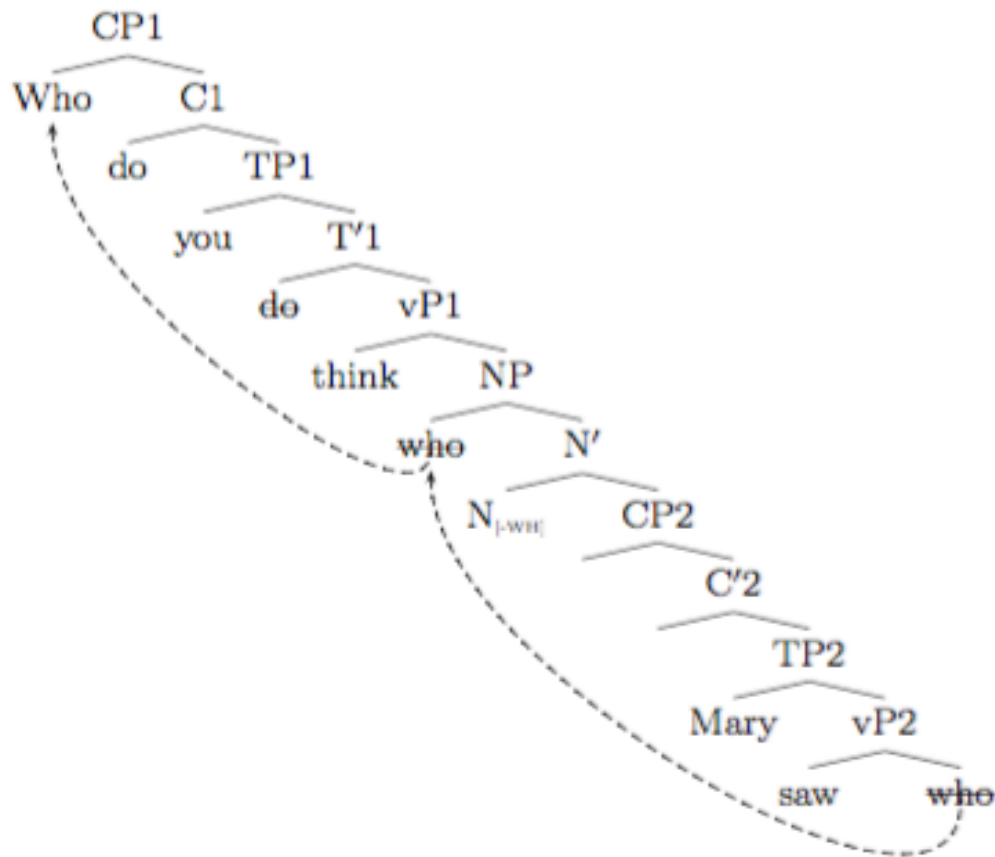
d. does it seem/appear?

e. do you realize/regret/admit/don't you deny/have
you discovered? she is?

3.1 Proposal

- Long-distance wh-movement lacks MoodEvid. The verb selects [_{NP} N_[-wh] CP_P], which means that N triggers wh-movement, but lack of MoodEvid renders pied-piping of CP_P impossible:

(21)



- *who* agrees with N—not the declarative C—and moves to [Spec,NP] (like in *wh*-slifting).
- C1 agrees with *who*, which moves to [Spec,CP1], without pied-piping CP2 (unlike in *wh*-slifting).
- In the absence of MoodEvid, long-distance *wh*-movement may iterate:

(22) [_{CP1} Who do you think [_{NP} t_{who} [_{CP2} John believes [_{NP} t_{who} [_{CP3} Bill saw]]]]]? (cf., (15))

4 (Sequential) *wh*-scope marking

- The “*wh*-scope marking” problem:

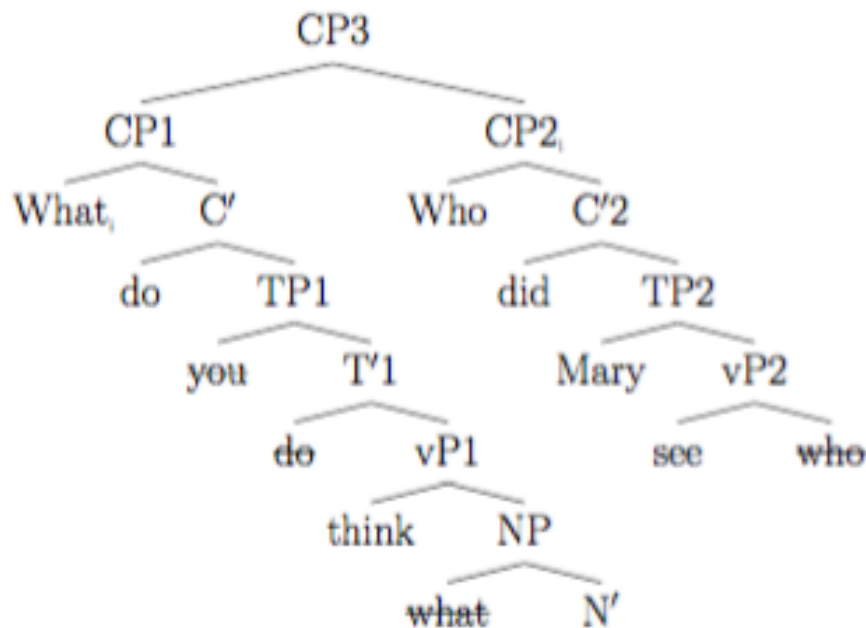
(23) What do you think? Who did Mary see?

- Dayal (2000) (also Haddican et al. 2014): clausal sequences like (23) are comparable to wh-scope marking in Hindi, German, etc.
- Lahiri (2002): (23) features two independent clauses, and is not comparable to wh-scope marking (unlike, wh-slifiting, which is).

4.1 Proposal

- Sequential wh-scope marking suggests that the nominalizer N may agree with a wh-element that is not part of the interrogative CP (i.e., CP2):

(24)



- N agrees with *what*, which merges at [Spec,NP], and from there moves to [Spec,CP1] after agree with C1.
- CP2 is “juxtaposed”, and is co-indexed with *what*, which takes a propositional argument. Juxtaposition

of CP2 is supported by the unacceptability of variable-binding readings:

(25) # What does everyone_i think? Where should he_i go?
(from Dayal 2000: (32b))

- CP2 is not subordinate to CP1, otherwise the intended reading (cf., the co-indexing) would be acceptable, contrary to facts.
- So, in wh-slifing and long-distance wh-movement, the wh-element “internally merges” in [Spec,NP], while in sequential wh-scope marking, the wh-element “externally merges” in [Spec,NP].
- This system is generalizable to wh-scope marking strategies cross-linguistically:
 - N agrees with the wh-scope marker, which projects either at [Spec,NP], if it’s a phrase (as in English), or adjoins to N, if it’s a head (as in, e.g., Bangla (Bengali); cf., Bayer 1996).
 - CP2 is either subordinate (e.g., indirect syntactic/full-blown subordination) or adjoined (juxtaposition) to CP1, depending on the language (Dayal 2000).

5 Conclusions

- The modality of the selector (and not only of the selectee, as standardly assumed; e.g., Control, Raising, ECM) is implicated in selectional restrictions: depending on its modality, a propositional attitude verb may select either a P or Q complement.

- Cyclic wh-movement is probed by (an indefinite) N not (a declarative) C.
- An N-probe may externally or internally merge with a wh-Goal. This nominalization strategy generates various “wh-constructions” cross-linguistically, some of which are: wh-slifiting, long-distance wh-movement, and (sequential) wh-scope marking.
- The “wh-scope marker” (in German/Hindi) may be the overt manifestation of the nominalizer N (which is covert in English).

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