

Revisiting Postal's DOC: Lethal A-positions*

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Postal's puzzle

The predicates in (1) license ECM, as well as other operations that take such a representation as their input like passive raising.

(1) ECM infinitives

- a. Melvin believed/considered/held/understood **Bill to be a liar**.
- b. **Bill** was believed/considered/held/understood **e to be a liar**.

Postal noticed that some verbs do not allow ECM (2a), but appear to allow traces of movement from that position: passive raising (2b), *wh*-movement (2c), and complex NP shift (2d), as well as expletives (2e): ('derived object condition' verbs DOC)

(2) DOC-class infinitives (adapted from Postal (1974, 1993))

- a. *John said/wagered/alleged/thought/assumed **Bill to be a liar**.
- b. **Bill_e** was said/wagered/alleged/thought/assumed **e to be a liar**.
- c. **The person_e** John said/wagered/claimed/thought/assumed **e to be a liar** was in fact telling the truth.
- d. John said/wagered/claimed/thought/assumed **e to be a liar** [any person who disagreed with him]_e.
- e. John said/wagered/claimed/thought/assumed **there** to be stolen documents in the drawer.

Since in general objects *are* licensed with DOC verbs (cf. *John said mean things*), the DOC paradigm presents a real puzzle in requiring the offending term to vacate its embedded position, or not be an interpreted term there (e.g. expletives).

DOC Generalization: a term cannot be interpreted in embedded subject position in DOC class verbs.

Solution: no terms can be interpreted as subjects of these infinitives, the so-called tenseless propositional infinitives (Stowell 1982). So the subjects have to move, but different types of complements make certain movements available.

* Thanks to Kyle Johnson. Thanks to Angelika Kratzer. And to Peggy Speas for starting me on to the difference between *think* and *believe*.

Roadmap

1. **Different Structures because of root semantics:** DOC verbs are not attitude verbs in that they do not provide propositional content. The infinitive, then, is not a complement of the verb; it has to sit higher in the structure as an argument of a modal.

2. **Lethal Movement positions:** certain infinitival subject A-positions are lethal, in that they do not allow material to be interpreted there because the functional head lacks the ability to provide a binder index.

3. **Getting the embedded subject out:** The embedded subjects get licensed in the same way in (1) and (2), but where they end up (how they vacate the lethal A-position) depends on where the infinitival clauses end up.

Remaining Issues to be discussed at end:

- Pronouns: It's been claimed pronouns can be ECM'd in DOC verbs position; re-examine the data.
- Previous proposal: Bošković (1997) derives DOC from the Agentivity restrictions on ECMing predicates (Pesetsky 1992).

1. Motivating different structures

Only ECM verbs select for propositional content. Certain nominals (Bach 1977) denote what propositions of this sort denote (roughly, veridical complements, see Giannakidou 2007).

ECM roots select for propositional meanings:

- (3) Melvin believes the proposition/notion/idea/nonsense/theorem (that Iran is supplying weapons to insurgents).

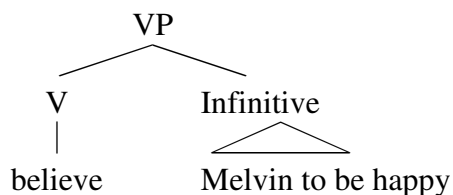
DOC roots do not:

- (4) *Melvin said/wagered/claimed/thought the **proposition/notion/idea/nonsense/theorem** (that Iran is supplying weapons to insurgents).

→ DOC verbs do not take propositional complements.

So how do they *appear* to take propositional complements?

(5) Classical semantics for attitude verbs: built-in intensionality via quantification over worlds



$[[\text{believe}]] = \lambda p. \lambda x. \lambda w. \forall w' \in \text{Dox}(x, w). p(w') = 1$

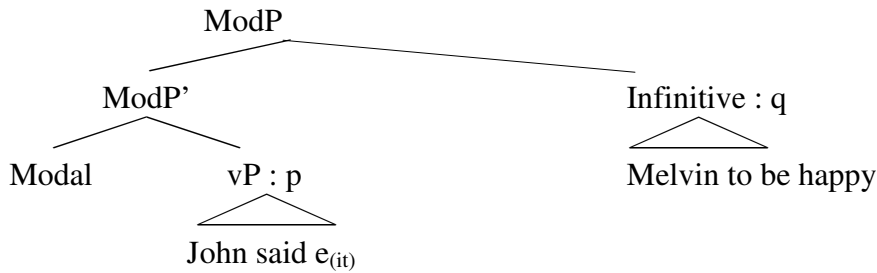
$[[x \text{ believes } p]]$ is true iff in all worlds w' compatible with what John believes in w (via Dox function), p is true in w' .

→ *believe* selects for propositions; the infinitive is an internal argument

DOC predicates are simply extensional predicates; relations between individuals and events.

- Quantification is provided by another head (a modal).
- The matrix predicate serves as restrictor (modal base) for it: *according the content of what John said, ...*
- The infinitive is in the nuclear scope.
 [Alternaitvely, the modal base could be an event as proposed in Hacquard (2006); we would just QR the vP in that case leaving an event variable]

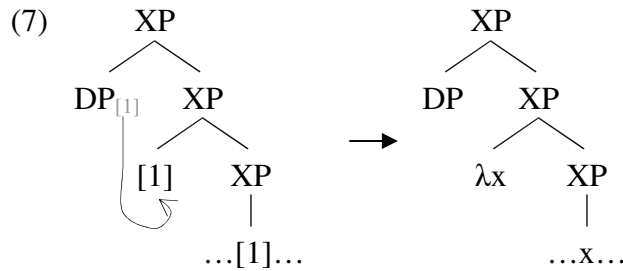
(6) Tripartite structure for DOC sentences: ‘matrix vP’ serves as restrictor



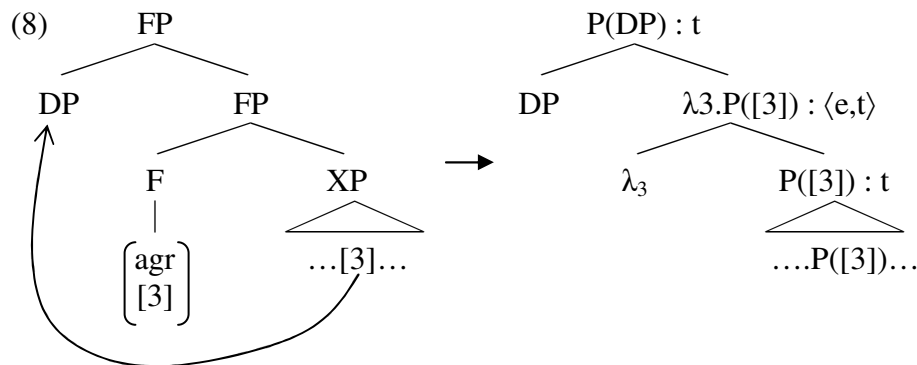
[[**Modal**]] = $\lambda p.\lambda q.\lambda w.\forall w'$ compatible with the content of p in w, $q(w') = 1$
 “According to the content of the event of John saying (something), Melvin is happy.”

2. Distinguishing A-movement positions

A Traditional View: movement makes a lambda abstract (Heim and Kratzer 1998)



Indices as features: Indices on DPs are interpreted as variables; indices bundled with features on functional heads are binders (Kratzer, 2004, 2006; Johnson, class notes)



What functional heads provide these indices? those that host movement, (or enter agreement with an argument, which in many instances involves ‘case’)

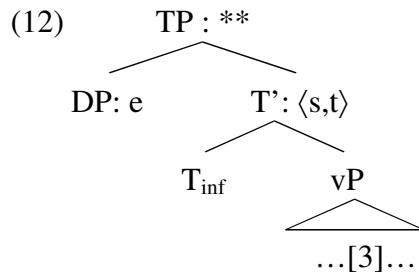
- (9) Finite T
 μ (accusative case assigner)
 Interrogative C
- (10) **But not:**
 non-finite T

Non-finite T does not host arguments – these are not infinitives that license PRO:

- (11) a. *John believed to be a great guy.
 b. *John considered to be happy.¹

Non-finite T is simply not interpreted either in these infinitives (Wurmbrand (2006)).

Arguments move to Spec,TP_{inf} to be visible for case valuation. But they cannot stay there because that would lead to a type clash since the T_{inf} lacks a binder.



Movement to Spec, TP_{inf} is purely successive cycle purposes, meaning it must be an intermediate position;

I propose case can be valued here though. But when the term vacates it leaves no trace because that would be uninterpretable as well. See Bošković (2002) for a proposal about successive cyclic A-movement which I think is similar to this in spirit.

Sidebar: This ‘case’ story sounds like the classical Stowellian (1982) picture of these infinitival Tenses. I know that it is unlikely that the tense/‘case’ conflation is the real factor that separates various infinitives (Wurmbrand 2006). Here I am not using case, but the ability for a head to provide a binder index, capturing the fact that non-finite T in propositional infinitives in English doesn’t host arguments (i.e. PRO). Alternatively, propositional infinitives are AspPs, which deliver properties of times (which is the right meaning for other things, such as *de se* and simultaneity conditions (Aubusch 1999)), but crucially we would assume Asp⁰ is **not** a FP that carries binder indices, and hence forces the subject to vacate, in some way, to a head that does.

¹ The verb *claim* does license PRO. Perhaps PRO stays low here (Wurmbrand 2006). *Claim* is as DOC verb. In fact, most of the DOC verbs allow some sort of control, whether as implicative verbs (*John thought to turn out the lights*; *John wagered to say*) or implicit oblique control with directive modality (*John said/whispered/shouted to leave*).

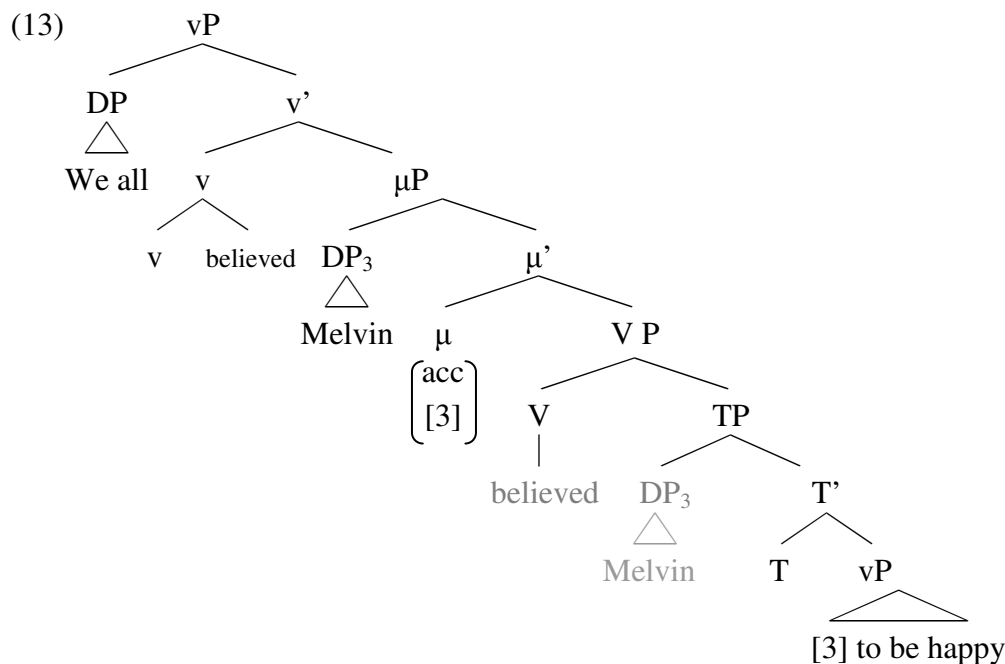
3. Putting the pieces together, and getting the subject out

B-class ECM

- The infinitive merges as an argument of the predicate; case is valued if the embedded subject moves to clause edge
- The types clash if you leave the embedded subject in the infinitive.
- Easy solution to this lethal A-position: move to μ P, which does host binders.

(assume split VP with μ between v and VP: Koizumi (1993))

Interpret shaded items as always invisible to the semantic composition (i.e. movement that doesn't even leave traces/variables – THEY ARE NOT COPIES!)

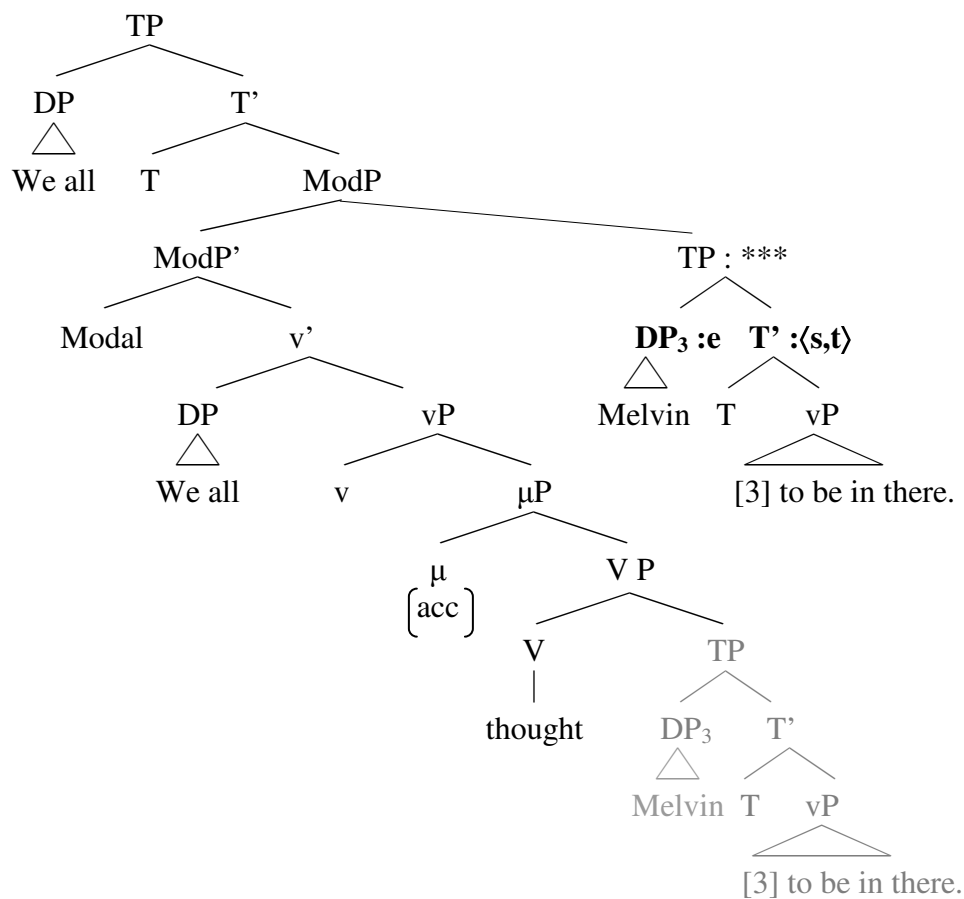


DOC 'ECM'

The types clash if you leave the embedded subject in the infinitive, just like B-class ECM. But the same solution is not available.

- a. Infinitive merges with V; embedded subject is licensed
- b. Infinitive cannot be interpreted here (at all) so has to move and leave no trace (!)
- c. Since the infinitive acts like it was never there, the embedded subject can't raise to μ P to escape the lethal A-position (it wouldn't bind a trace) so it has to schlep along as part of the infinitive.
- d. **But! If it remains in the infinitive it will fail to compose since T_{inf} does not host binder indices and so does not host A-moved terms.**

(14) *We all said/thought/claimed Melvin to be in there.

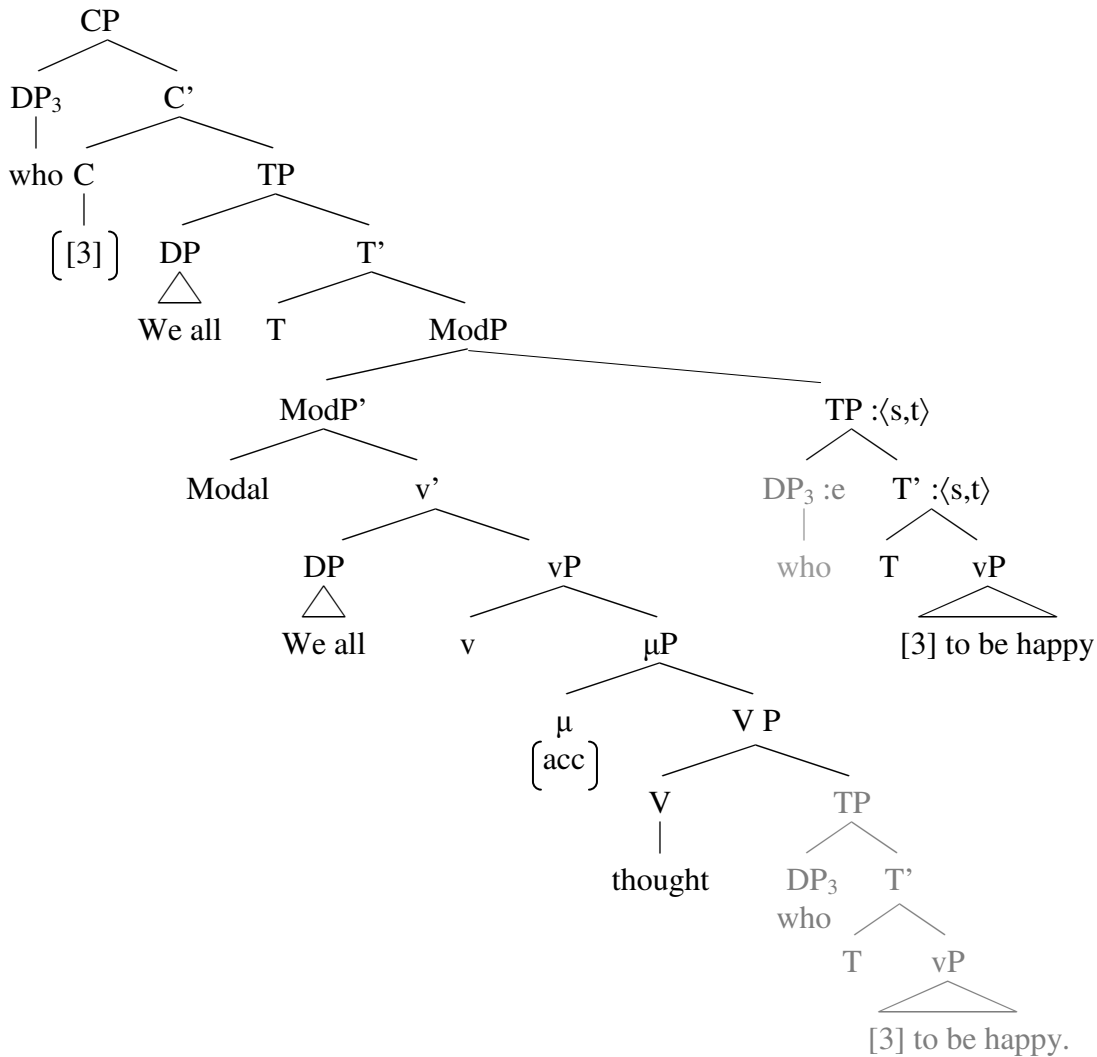


Solutions to the DOC:

To rescue the embedded subject from its lethal A-position, move it to a place that *does* host binder indices... anyway you can! (...wh-movement, HNPS,...)

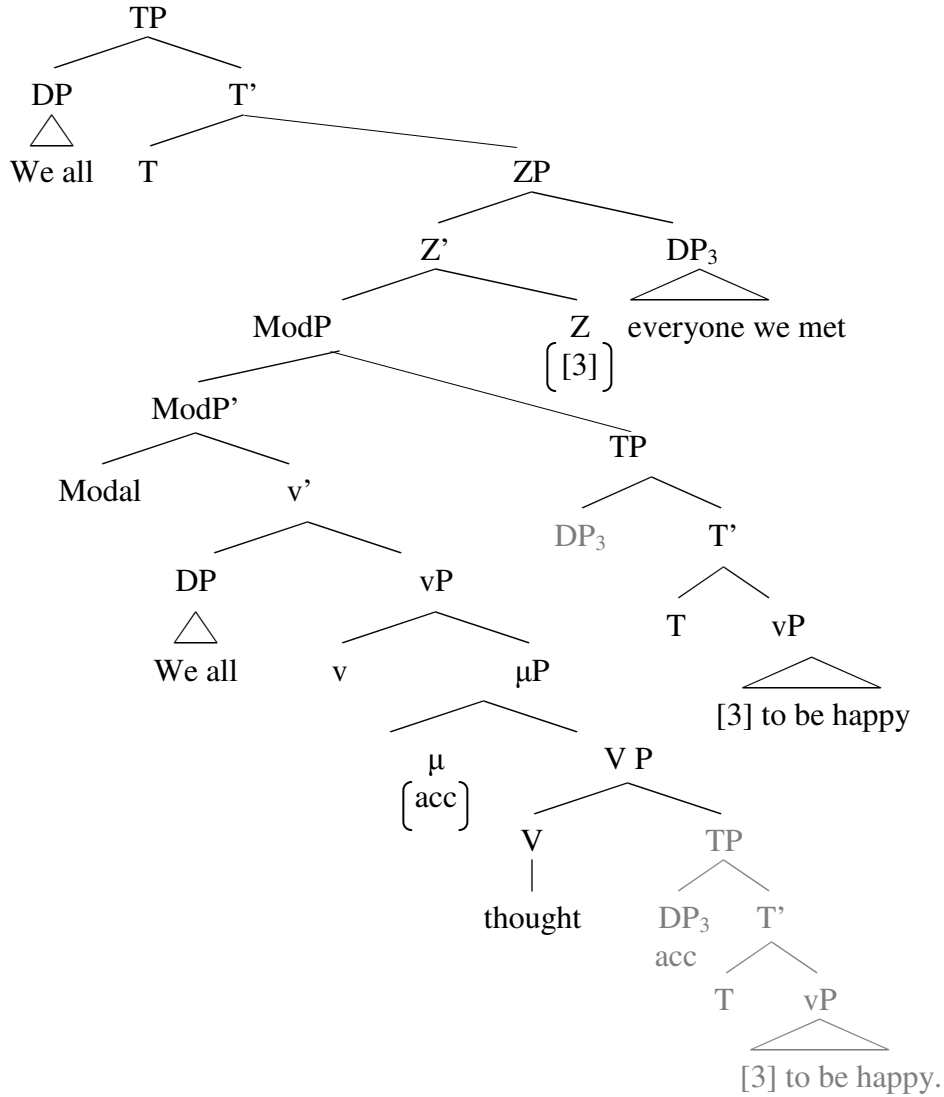
Solution #1: Wh-moved terms (or relative operators) are hosted as sisters to an FP that carries a binder index. In this instance, the embedded subject can vacate to a position that will allow it to compose successfully.

(15) Who did we all think/say/claim to be happy.



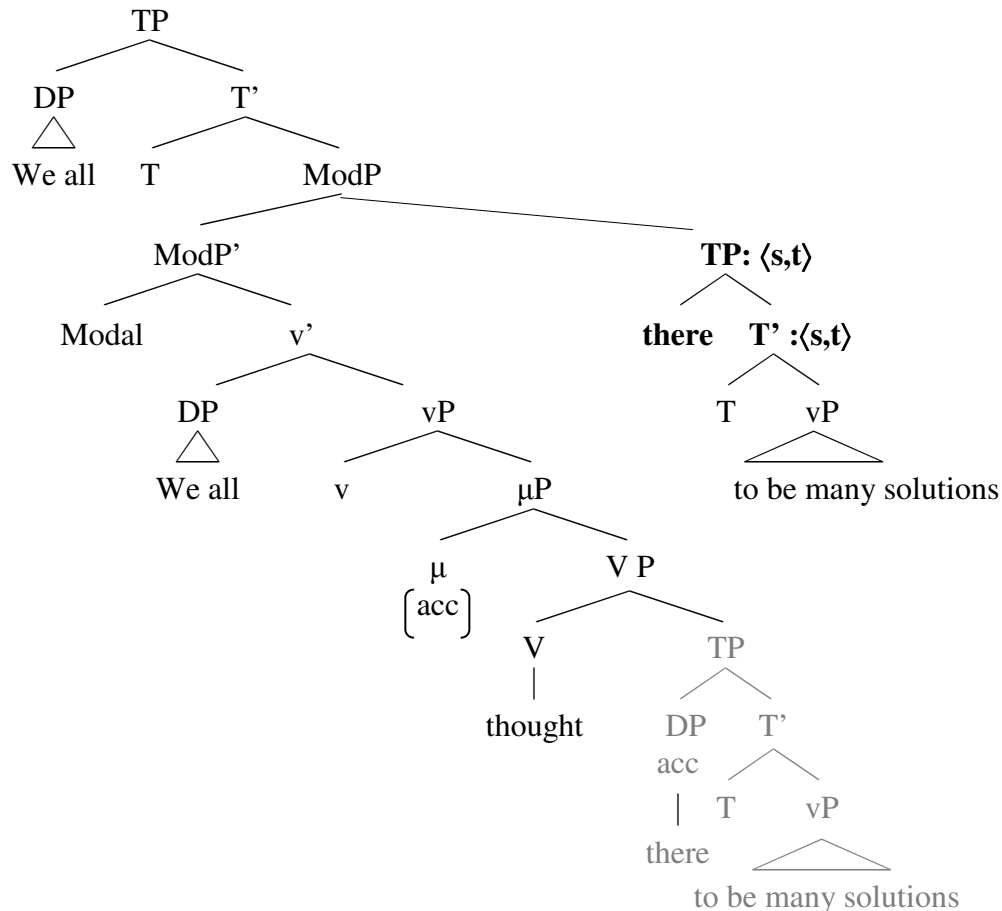
Solution #2: HNPS is another possible solution, if we allow that the position it moves to (Spec, ZP below) is one that hosts moved arguments by supplying a binder index.

(16) We all thought/claimed/said to be happy everyone we met.



Solution #3: Don't interpret the embedded subject! The one thing you *can* leave in Spec, T_{inf}P is expletives: they don't *need* to compose with the infinitival (see Deal 2006 for what they *do do*)

(17) We all thought/said/claimed there to be many solutions.



4. Conclusion

Lethal A-positions: All ‘propositional’ infinitives have subject positions that need to be vacated because these infinitives **don’t provide binder indices** that allow terms to be interpreted there (Problems: Q-float in this position, and *maybe* reconstruction)

DOC verbs differ from regular ECM verbs in that they **aren’t propositional attitude verbs** directly. Additional **modal structure** is needed. (Finite clause complements to these predicates, then, will also involve a modal or mood head that gives rise to intensionality – perhaps in C)

Ugly part: infinitives merge with DOC roots, to license their subjects, but then move. Merge without composition (and leaving no trace/copy) is ugly. Also, DOC verbs are transitive and their extensional object, while null, is there. More work needed here.

5. Pronouns! or : Maybe the DOC generalization is wrong

Bošković 1997 argues that pronouns can be ECM'd in DOC infinitives, presenting the contrast in (18):

- (18) a. Mary alleged him to have kissed Jane. (Bošković 1997: 58(21f))
 b. *Mary alleged that man to have kissed Jane. (Bošković 1997: 58(21fg))

ECM does seem ok though (whether on a pronoun or lexical NP) with many DOC verbs (19) as long as the subordinate predicate is evaluative/scalar (20), a contrast found under the verb *consider* as well (Heycock 1995, Lasersohn 2007) (21):

- (19) My grandfather thought/said/claimed/knew his sons to be incapable of finding a steady job, but he turned out to be proved wrong.
- (20) a. #John thought/said/claimed licorice to contain sugar.
 b. John thought/said/claimed licorice to be tasty.
- (21) a. #John considers the licorice to contain sugar. (Lasersohn (2007): (6-7))
 b. John considers the licorice to be tasty.

ECM may be possible with DOC verbs but the nature of the complement is different (perhaps involving less structure or fewer arguments, see Lasersohn 2007)).

6. The Agent ~ ECM correlation: new motivation

Pesetsky's generalization: verbs that cannot ECM all have agentive (animate, non-causer) external arguments. This seems true. Except, of course, that small clause complements to *think* and *claim* allow ECM, and it's not clear that the Agentive nature of the subject has changed.

Pesetsky's generalization, though, is quite robust. One way of reconciling it with the present account is to say that only state predicates, whose external arguments are *state holders*, provide propositional content. All eventive/activity verbs, with agentive subjects, are extensional and so propositional "complements" are arguments of some other head. An actual event of *saying* does have content (Hacquard 2006) and the whole vP can serve as a restrictor (essentially, getting an epistemic modal based relative to a speaker).

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