

1 World Variables

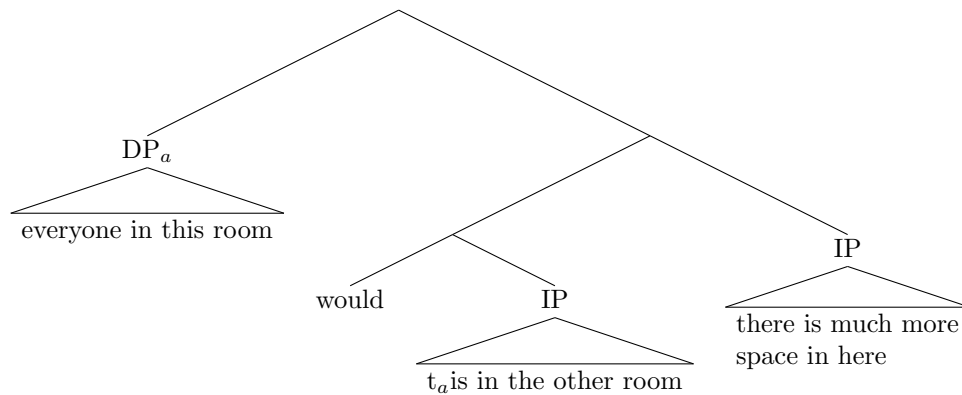
Assuming a purely scopal theory of the *de re* / *de dicto* distinction leads to some scope paradoxes:

1.1 Conditionals and Universal Quantifiers

- (1) If everyone in this room was in the other room, there would be much more space in here. (After Percus 2000)

Scope Theory:

- (2) \neq



This would mean that for every person x in this room, if x was in the other room, there would be much more space in here – in other words, each individual person in here takes up a lot of space. The most salient reading is one where it is the totality of people in this room that take up a lot of space.

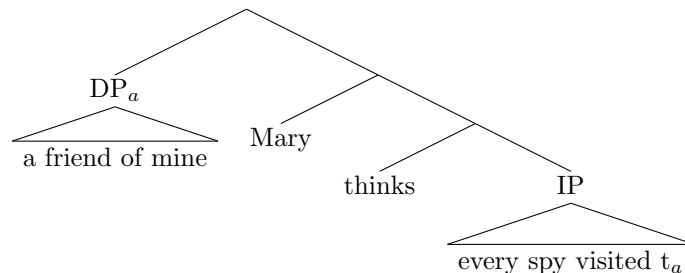
1.2 Universal over Existential

I am playing a trick on Mary and I tell her that there are spies in contact with people in Cambridge. I give her a list of five people and tell her that every spy has been to visit at least one person on the list. Unbeknownst to Mary, though, the five people are friends of mine who are playing along:

- (3) Mary thinks every spy visited a friend of mine.

Scope Theory:

- (4) \neq

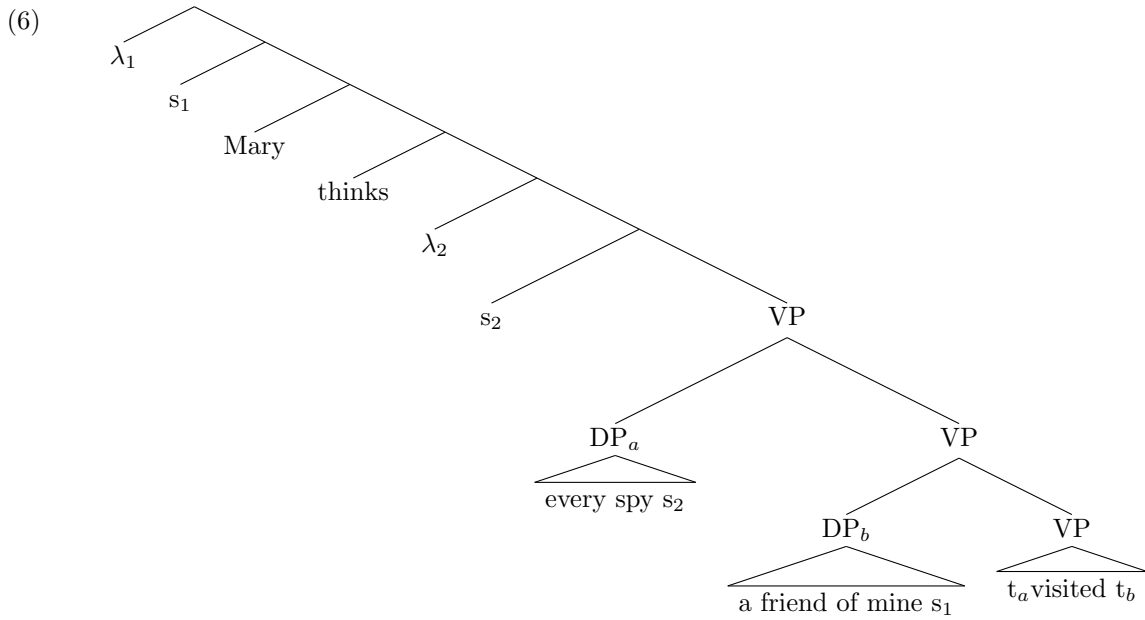
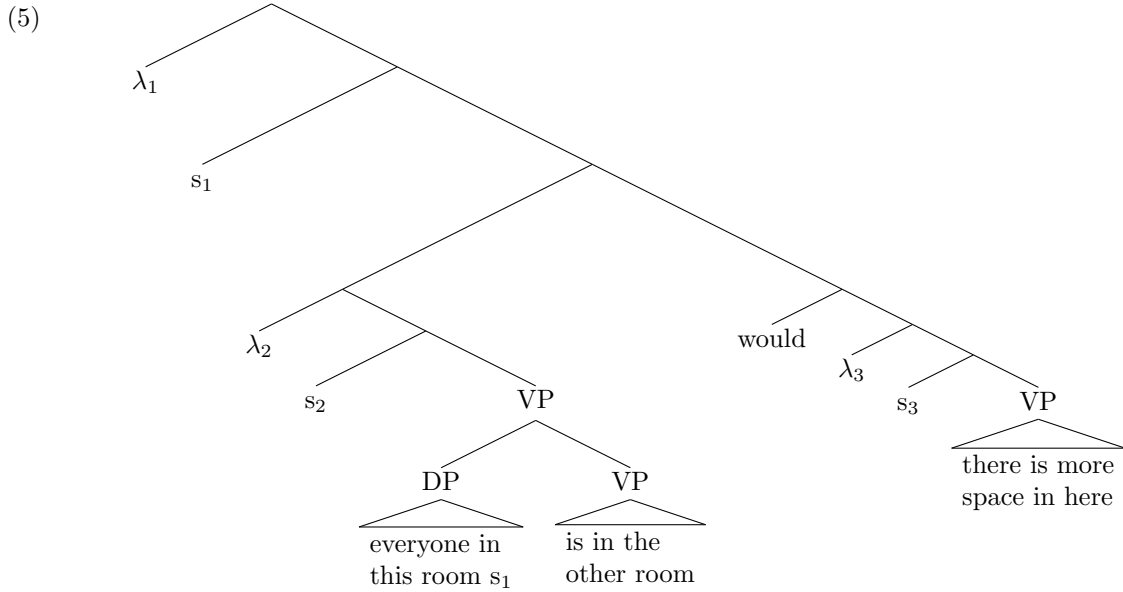


Once again, this is wrong: it would mean that there is one particular friend of mine x such that Mary thinks every spy visited x .

¹Apologies to FedEx

1.3 Enter World Variables

Percus (following many others) instead suggests that which world a predicate or operator applies to is represented as a bound variable in the syntax of the sentence. A situation variable, bound by a coindexed λ , appears before each VP and at the end of each DP:

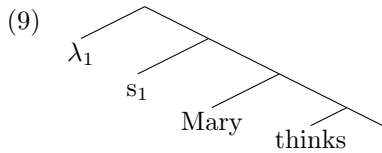


2 Percus' Generalization X

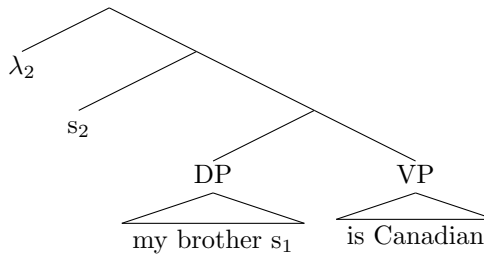
Percus (2000) points out, however, that not every possible binding of situation variables is attested.

(7) Mary thinks my brother is Canadian. (Percus 2000)

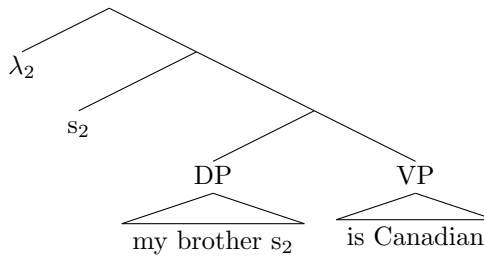
- (8) a. ✓ I have a brother Pierre; Mary thinks he's Canadian. She doesn't necessarily know he's my brother.
 b. ✓ Mary thinks I have a brother who is Canadian. I don't necessarily actually have a brother.
 c. # There's a Canadian whom Mary thinks is my brother. (cf. Mary thinks some Canadian is my brother.)
 d. (# My brother is Canadian, and there's no real content to Mary's thought.)



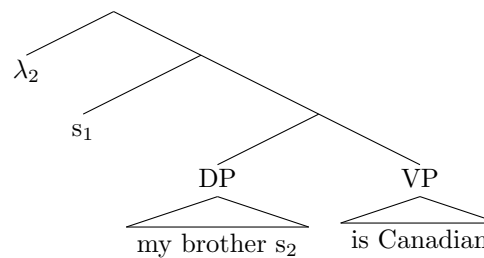
a. ✓



b. ✓



c. #



- (10) **Generalization X:** The situation pronoun that a verb selects for must be coindexed with the nearest λ above it. (Percus 2000)

3 A New Generalization for World Variables

3.1 Musan's Generalization

DPs in certain contexts allow (i)ndependent temporal readings, DPs in other contexts require (d)ependent temporal readings (from Musan 1997):

- (11) a. Many fugitives are now in jail. (i)
b. There are many fugitives now in jail. (d)
- (12) a. Professoren waren ja doch in den sechziger Jahren glücklich. (i)
Professors were indeed in the sixties happy
'Professors [in general] were (indeed) happy in the sixties.'
b. In den sechziger Jahren waren ja doch Professoren glücklich. (d)
In the sixties were indeed professors happy
'In the sixties, some professors were (indeed) happy.'
- (13) **Musan's Generalization:** A noun phrase can be temporally independent if and only if it is presuppositional. (10 from Musan 1997, p. 60 – preliminary version)

Her definition of presuppositional is based on Diesing (1992):

- (14) **Diesing's Mapping Hypothesis:**
 - a. Material from VP is mapped onto the nuclear scope (i.e., is weak, non-presuppositional).
 - b. Material from IP is mapped onto the restrictive clause (i.e., is strong, presuppositional).

3.2 Applied to Worlds

Note: Musan speculates along these lines at the end of her dissertation.

- (15) Mary thinks a semanticist is in the next room.
 - a. ✓Fred is a semanticist. Mary thinks Fred is in the next room, although she does not necessarily know he is a semanticist.²
 - b. ✓Mary hears the strains of λ 's and $\llbracket \rrbracket$'s coming from the next room, so she assumes there's a semanticist in there, although she doesn't necessarily know who it is.
- (16) Mary thinks there's a semanticist in the next room.
 - a. # Fred is a semanticist. Mary thinks Fred is in the next room, although she does not necessarily know he is a semanticist.
 - b. ✓Mary hears the strains of λ 's and $\llbracket \rrbracket$'s coming from the next room, so she assumes there's a semanticist in there, although she doesn't necessarily know who it is.
- (17) **New World Generalization:** The situation pronoun(s) that material in the VP selects for must be coindexed with the nearest λ above it.

Note that this subsumes Generalization X, since the verb is in the VP.

²She just thinks he's strange...

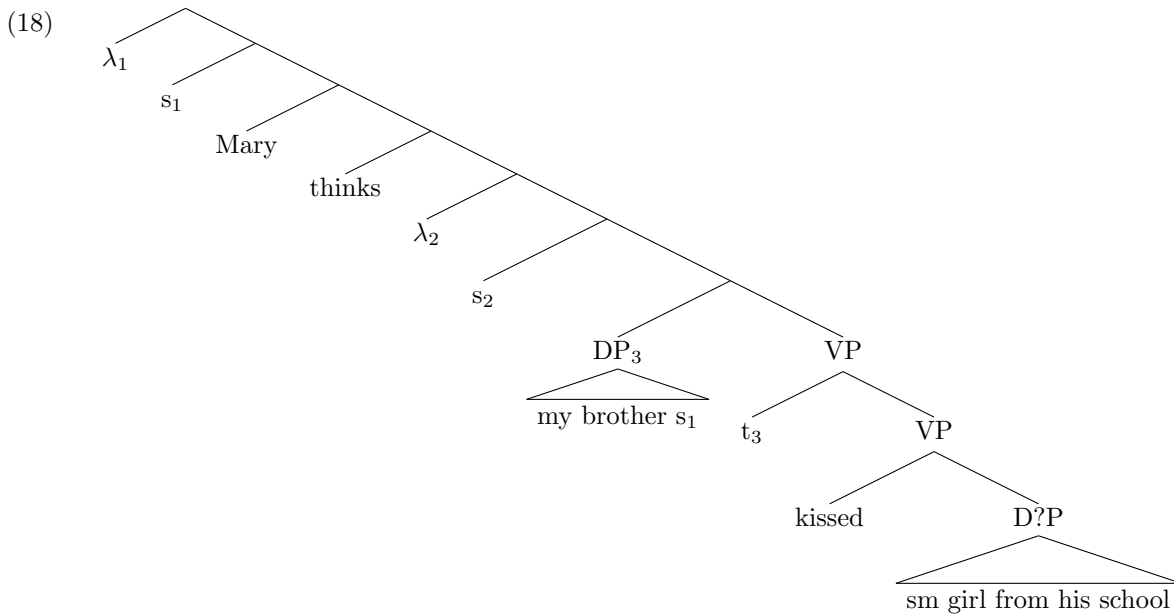
4 Towards an Analysis

Recap:

- Material in the VP (i.e., the verb and weak DPs) must happen at the same time and world, namely the world of the next higher intensional operator.
- Material outside the VP (i.e., strong DPs) is free.

So, maybe:

- Material in the VP shares one situation variable coindexed with the next highest lambda.
- Each item outside the VP has its own situation variable.
- Situation variables provide a time and a world.



5 More...

5.1 Connections between Worlds and Times

Truly low indefinites are dependent on world and time:

(19) Mary thinks there's a congressman in the next room.

Not only does Mary have to think that the congressman is a congressman, but he or she has to currently be a congressman.

But indefinites that have a strong reading allow more variation:

(20) Mary thought many fugitives were in jail.

The time of being a fugitive may be independent of the time of being in jail even when the fugitives only exist in Mary's thought worlds.

Later-than-matrix correlates with *de re*:

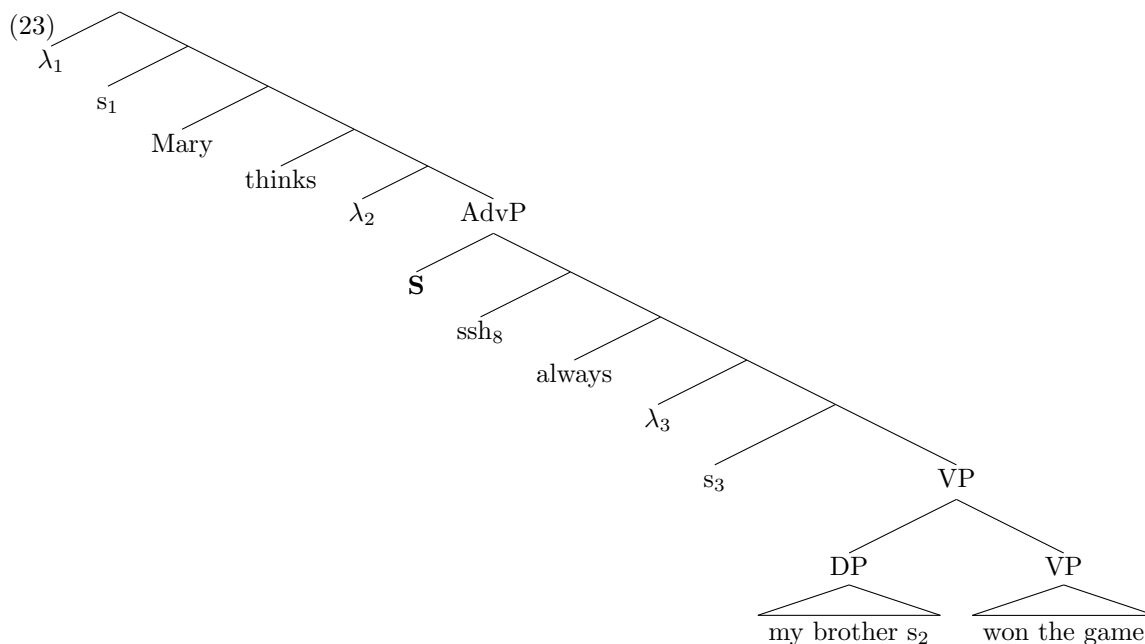
- (21) Mary thought many convicts who escaped from jail were dangerous.
- a. If the escaping actually happened, OK even if the escaping is after the thinking – e.g., she does a psychological profile of convicts who later escape.
 - b. If the escaping did not actually happen, NOT OK if the escaping is after the thinking.

Notice that in (20), as well, it cannot be future fugitives.

5.2 Generalization Y

Percus has another generalization:

- (22) Mary thinks that my brother always won (the game).



- (24) a. $\checkmark \mathbf{S} = s_2$: In all of Mary’s thought worlds w' , my brother in w' always won in w' .
 b. $\# \mathbf{S} = s_1$: There’s someone who always won that Mary thinks is my brother.
- (25) **Generalization Y**: The situation pronoun that an adverbial quantifier selects for must be coindexed with the nearest λ above it. (Percus 2000)

Maybe I would have to say that “always” is part of the VP, too, or maybe there’s an answer along the lines that Junri suggested.

References

- Diesing, M.: 1992, *Indefinites*, MIT Press Cambridge, Mass.
- Musan, R.: 1997, *On the temporal interpretation of noun phrases*, Garland.
- Percus, O.: 2000, Constraints on Some Other Variables in Syntax, *Natural Language Semantics* **8**(3), 173–229.