

## VP Ellipsis: Strict and Sloppy Readings

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Today:

- Strict and sloppy readings of pronouns and reflexives in VP ellipsis
- Brief intro to the structural approaches to ellipsis (PF deletion, LF copy)
- Binding theory
- Interpreting anaphors (pronouns, reflexives)

### 1 VP Ellipsis

- VP ellipsis involves two clauses where the VP of the second clause is phonologically missing, but is understood as if it was present.

- (1) John liked the movie but Bill didn't.
  - a. John [<sub>VP</sub> liked the movie] but Bill didn't [<sub>VP</sub>  $\emptyset$  ]
  - b. [<sub>VP</sub>  $\emptyset$  ] = like the movie
- (2) John loves Mary and Peter does too.
  - a. John [<sub>VP</sub> loves Mary ] and Peter does [<sub>VP</sub>  $\emptyset$  ] too.
  - b. [<sub>VP</sub>  $\emptyset$  ] = loves Mary

- Ellipsis involves an identity condition. The elided VP cannot have just any interpretation and is interpreted as being identical to the another overt VP in the discourse context.

- (3) John loves Mary and Peter does too.
  - a. John [<sub>VP</sub> loves Mary ] and Peter does [<sub>VP</sub>  $\emptyset$  ] too.
  - b. [<sub>VP</sub>  $\emptyset$  ]  $\neq$  ate the pizza

- Like other forms of ellipsis, VP ellipsis raises the question of how we get the intended meaning from something that is phonologically absent.

### 2 Structural Approaches

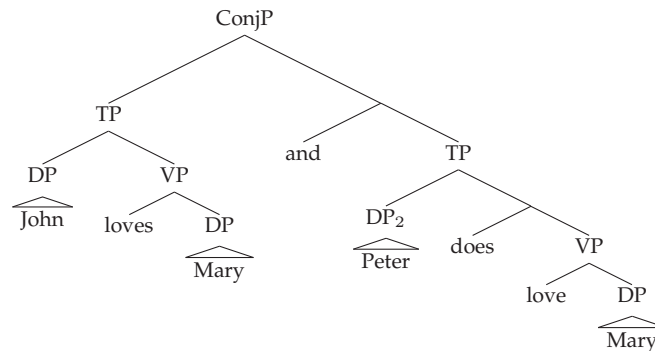
- Structural approaches assume there is underlying syntactic structure at the ellipsis site, and it's from this covert syntactic structure that we get the intended meaning.
- In other words, while the structure is not there at the level of pronunciation, (PF), it is there at the level of interpretation (LF).

- There are two main variants: PF-deletion (Ross, 1967) and LF-copying (Williams, 1977).

## 2.1 PF-Deletion

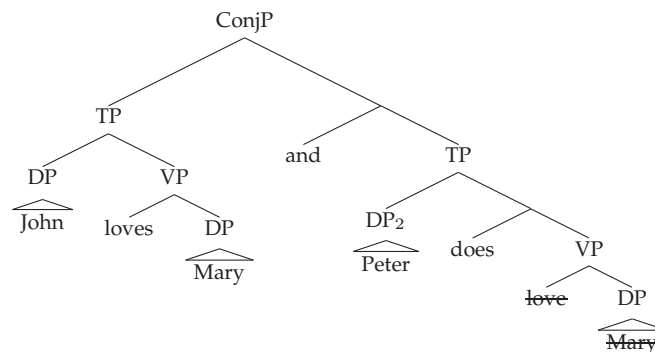
- The PF-deletion approach starts with the syntactic structure that represents the intended meaning of the sentence, then deletes the VP of the second clause because it is structurally identical to another VP in the discourse context.

(4)



- The derivation then splits off to PF and LF. The tree in (4) is what the LF would look like, no changes are made and it represents the intended meaning of the sentence.
- At PF though, the VP in the second clause can be deleted because it's syntactically identical to the overt VP in the first clause. Therefore at PF this VP is unpronounced.

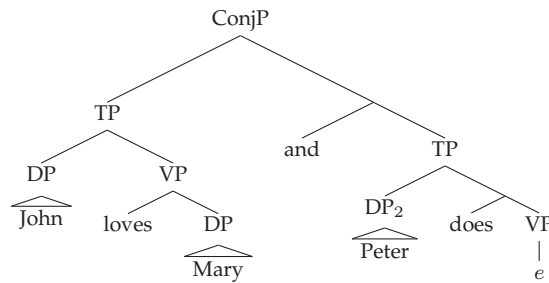
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## 2.2 LF-Copying

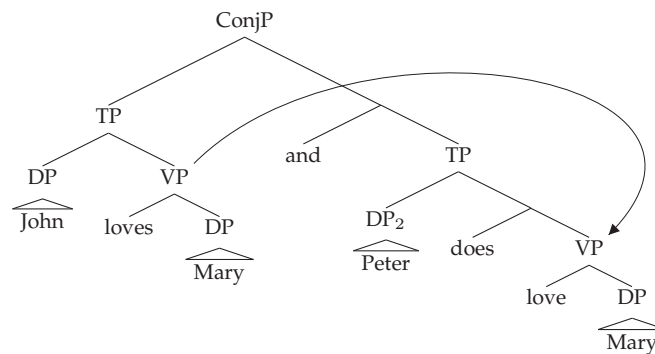
- The LF-copying approach starts with a syntactic structure where there is a phonologically null anaphoric element at the ellipsis site.

(6)



- When the derivation splits off to PF and LF, the structure with the phonologically null anaphoric element is what gets pronounced, but at LF there is a process which copies the antecedent VP to the ellipsis site.

(7)



- Thus we end up with the phonological form with the VP missing, but an LF where there is actually syntactic structure that can be interpreted.

### 2.3 Summary

- To answer the question posed by ellipsis of how we get meaning from something phonologically absent, the structural approaches answer this by assuming that even if a phrase is phonologically absent, it has a syntactic structure covertly there at LF which can be interpreted.

### 3 VP Ellipsis and Pronouns

- When a pronoun occurs inside an elided VP there is an ambiguity that arises regarding the interpretation of the pronoun.

(8) John<sub>1</sub> likes his<sub>1</sub> car and Bill<sub>2</sub> does [<sub>VP</sub>  $\emptyset$ ] too.

- Reading 1: The pronoun can be interpreted as having the same antecedent in the elided VP as it does in the overt VP, known as the strict reading, (28).

## (9) Strict Reading

- a.  $[_{VP} \emptyset] = \text{likes his}_1 / \text{John's car}$

- Reading 2: The pronoun can also be interpreted as having a different antecedent in the elided VP than it does in the overt VP, known as the sloppy reading, (29).

## (10) Sloppy Reading

- a.  $[_{VP} \emptyset] = \text{likes his}_2 / \text{Bill's car}$

- The puzzle these data raise is how to account for this ambiguity.
- The sloppy reading is particularly problematic since we've seen that the elided VP must be identical to its antecedent VP. Under the sloppy reading  $[_{VP} \text{likes John's car}] \neq [_{VP} \text{likes Bill's car}]$ .

**3.1 Binding Theory**

- The distribution of pronouns and reflexives is standardly assumed to be regulated by the principles of binding theory (Chomsky, 1981).

- (11) a. Condition A - a reflexive must be bound in its local domain  
 b. Condition B - a pronoun must not be bound in its local domain

- Where "bound" in the definitions above means being bound syntactically:

(12) *Syntactic Binding*

A node  $\alpha$  syntactically binds a node  $\beta$  iff:

- a.  $\alpha$  and  $\beta$  are co-indexed  
 b.  $\alpha$  c-commands  $\beta$   
 c.  $\alpha$  is in an A-position, and  
 d.  $\alpha$  does not c-command any other node which is also co-indexed with  $\beta$ , c-commands  $\beta$  and is in an A-position.

- Given this definition of syntactic binding we can see that reflexives are always bound, (13), and that pronouns can be bound, but just not in their local domain, or they can occur without a binder at all, (14).

- (13) a. \*John<sub>1</sub> thinks that I hate himself<sub>1</sub>. (non-locally bound)  
 b. \*John<sub>1</sub>'s mother likes himself<sub>1</sub>. (no-command)  
 c. \*That it rains bothers himself<sub>1</sub>. (no binder at all)  
 d. John<sub>1</sub> likes himself<sub>1</sub>. (locally bound)

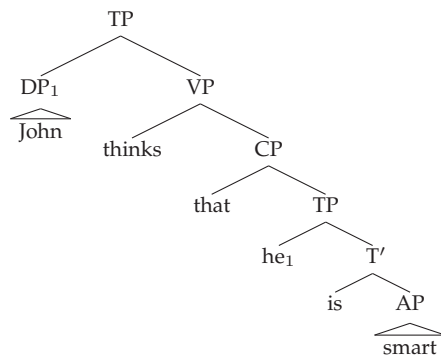
- (14) a. John<sub>1</sub> thinks that I hate him<sub>1</sub>. (non-locally bound)

- b. John<sub>1</sub>'s mother likes him<sub>1</sub>. (no-command)
- c. That it rains bothers him<sub>1</sub>. (no binder at all)
- d. \*John<sub>1</sub> likes him<sub>1</sub>. (locally bound)

### 3.2 Interpreting Pronouns Referentially

- So far we have been subscripting anaphors with an index which we understand to pick out an individual that the anaphor refers to, e.g. *him*<sub>1</sub> = *John* if 1 picks out the individual John.
- In this sense we are interpreting pronouns as referring expressions. The DPs *John* and *he* in the LF (15) co-refer since they pick out the same individual, giving the interpretation of the sentence *John thinks John is smart*.

(15) John<sub>1</sub> thinks that he<sub>1</sub> is smart.



- Is this all we need to know about pronoun interpretation to get strict and sloppy readings?

### 3.3 Deriving strict and sloppy readings: Attempt 1

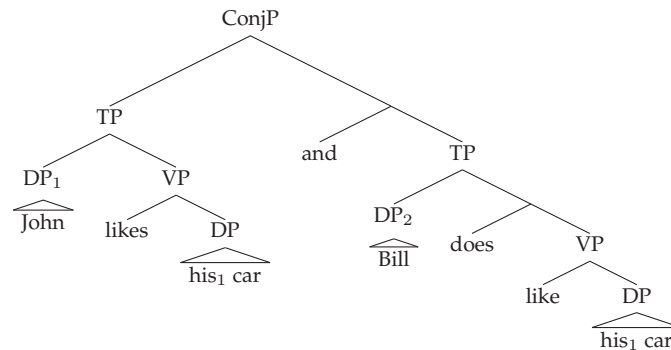
- We will assume the following:

- (16)
- a. LF copying theory of ellipsis
  - b. Condition B
  - c. Pronouns are referential

- The VP of the first clause is copied into the ellipsis site, and we get the LF in (18). If 1 → John, then this LF means *John likes John's car and Bill likes John's car*.

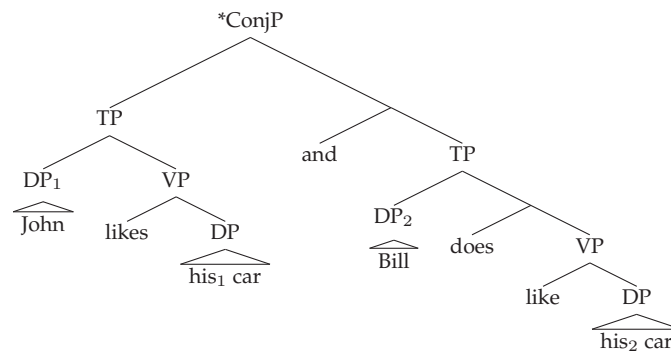
(17) John likes his car and Bill does [VP  $\emptyset$ ] too. (... Bill likes John's car)

(18)



- This strategy won't get us sloppy readings though. If we copy the VP, as is, from the first clause, it will always give us *likes John's car*.
- In order to get a sloppy reading with the assumption that pronouns are referring expressions, we'd have to change the index on the copied VP, but this would violate the identity condition on ellipsis.

(19)



- In sum, assuming pronouns are interpreted referentially, we can get strict readings but we cannot get sloppy readings.

### 3.4 Interpreting Pronouns as Bound Variables

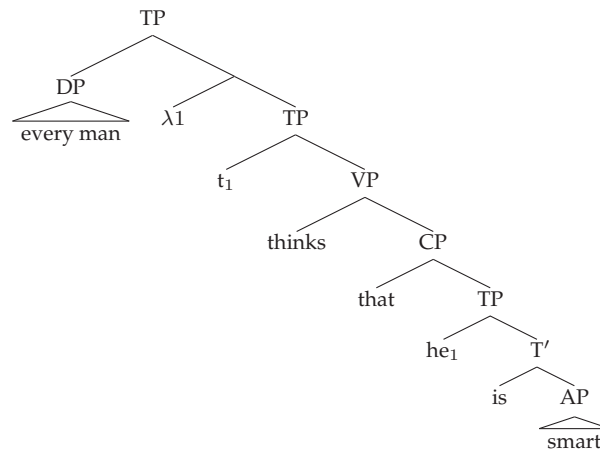
- The problem with not getting sloppy readings arises because we are treating pronouns as necessarily referring expressions.
- We know that pronouns in some instances do not have a referential meaning.
- A quantified DP does not refer to a unique individual in the first place and we see that pronouns can take quantified DPs as their antecedents.

(20)

[<sub>DP</sub> Every man] thinks that he is smart.

- For every man  $x$ ,  $x$  thinks that  $x$  is smart.
- \*Every man thinks that every man is smart.

- In (20), the pronoun is not picking up the denotation of its antecedent DP, if it did it would give us the incorrect interpretation in (20b).
- Instead, the pronoun is interpreted as a bound variable. Its interpretation covaries with its binder, (20a), we have to consider a number of possible values for the pronoun. We can think of *he* as referring to every relevant man in turn, rather than a specific individual.
- How do we get the intended reading of (20)?
- Quantifier raising (QR) at LF. QR moves a DP to adjoin to a higher node in the tree and introduces a variable binder,  $\lambda 1$ .
- Intuitively, what is going on is that instead of the index 1 picking out a specific individual, the addition of a variable binder allows us to interpret these instances with index 1 as a variable  $x$  which is not dependent on any particular assignment/index.
- (21)



- The configuration we end up with is one where the pronoun is semantically bound, in other words, a bound variable.

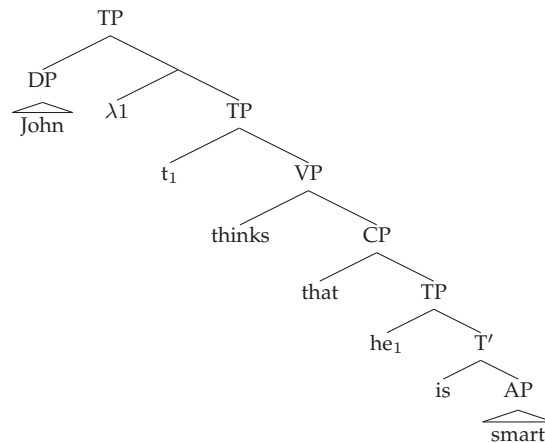
(22) *Semantic Binding*

DP  $\alpha$  semantically binds a DP  $\beta$  iff:

- $\alpha$  c-commands  $\beta$
- $\beta$  and the trace of  $\alpha$  are bound by the same variable binder.

- Let's now assume that referring DPs can also undergo QR to create a variable binding configuration. The LF (23) has the interpretation *John thinks that John is smart*.

(23) John thinks that he is smart.



- Comparing the LF in (15) where the pronoun is referential, to the LF in (23), we see that we now have two ways to get the same reading.
- Do we have evidence for pronouns being bound variables with referring antecedents? Yes, evidence from sloppy readings in VPE.

### 3.5 Deriving strict and sloppy readings: Attempt 2

- We're now at a point where we can solve the problem of sloppy readings.

(24) Assumptions:

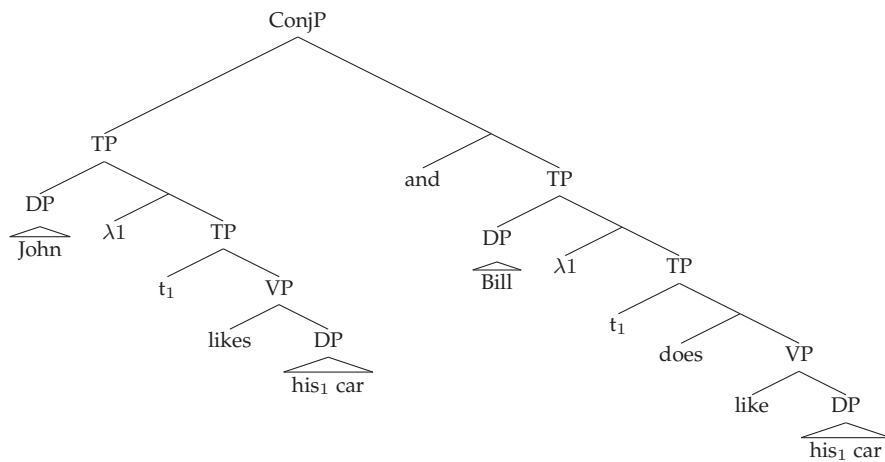
- LF copying
- Condition B
- Pronouns can be referential or bound variables

- Strict readings would be derived under the assumption that the pronoun is referential. Nothing changes from the LF we had in (18).
- Sloppy readings would be derived under the assumption that the pronoun is a bound variable in the first clause.
- At LF the overt VP [<sub>VP</sub> likes his<sub>1</sub> car] is copied to the ellipsis site, then we QR Bill so that the ellipsis identity requirement is satisfied.



(25) John likes his car and Bill does  $[_{VP} \emptyset]$  too. (... Bill likes Bill's car)

(26)



### 3.6 Summary

- If we assume pronouns can only be referential then we can only get the strict reading, which is a problem since we observe that strict and sloppy readings are possible.
- If we change our assumptions so that pronouns can be bound variables as well, then sloppy readings are possible.
- In addition, the fact that sloppy readings of pronouns exist provides evidence for pronouns being bound variables even without a QDP antecedent.

### 4 VP Ellipsis and Reflexives

- When a reflexive occurs inside an elided VP there is also an ambiguity that arises regarding the interpretation of the reflexive.

(27) John<sub>1</sub> defended himself<sub>1</sub> before Bill<sub>2</sub> did  $[_{VP} \emptyset]$  too.

- Reading 1: The reflexive can have a strict reading and be interpreted as having the same antecedent in the elided VP as it does in the overt VP.

(28) Strict Reading

a.  $[_{VP} \emptyset] =$  defend John.

- Reading 2: The reflexive can also be interpreted as sloppy and have a different antecedent in the elided VP than it does in the overt VP.

- (29) Sloppy Reading  
 a.  $[_{VP} \emptyset] =$  defended Bill.

- The same question arises as with strict and sloppy readings with pronouns. How can we account for this ambiguity?
- Can we do the same thing as with pronouns? Short answer: no.

#### 4.1 Deriving strict and sloppy readings: Attempt 1

- We'll make the following assumptions:

- (30) a. LF copy  
 b. Condition A  
 c. Reflexives are necessarily bound variables.

##### 4.1.1 Why are reflexives necessarily bound variables?

- This comes down to the relationship between syntactic binding and semantic binding? Heim and Kratzer (1998) propose something called the Binding Principle which says that whenever there is syntactic binding there must also be semantic binding.

- (31) *Binding Principle*  
 Let  $\alpha$  and  $\beta$  be DPs, where  $\beta$  is not phonologically empty. Then  $\alpha$  binds  $\beta$  syntactically at SS/PF iff  $\alpha$  binds  $\beta$  semantically at LF.

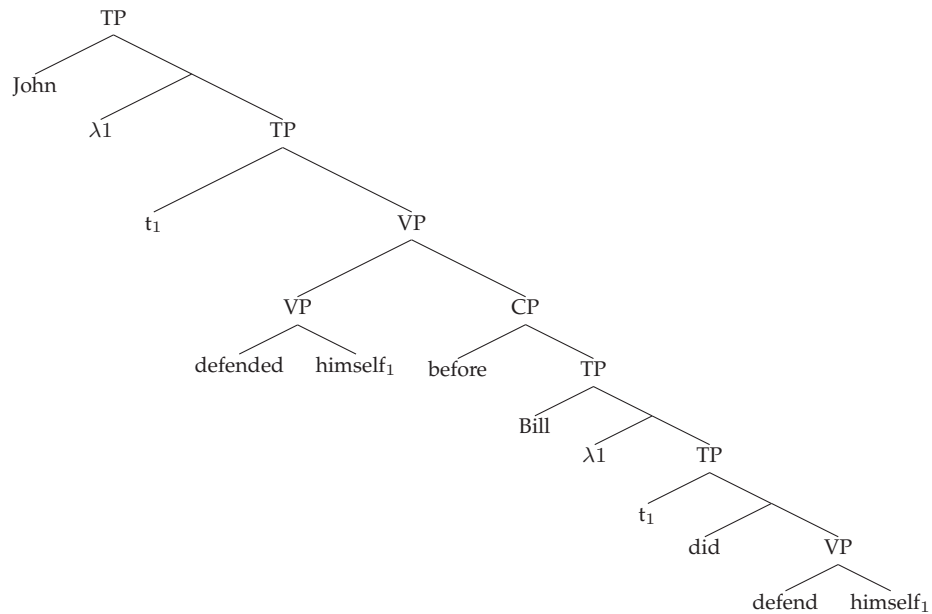
- What this means for pronouns is that if they are bound in the syntax they must also be bound in the semantics. Since they can be free or bound syntactically, they can be free or bound semantically.
- What this means for reflexives is that they must always be treated as bound variables because they are always treated as syntactically bound.

#### 4.2 Back to strict and sloppy readings

- Sloppy readings are derived by copying  $[_{VP} \text{defend himself}_1]$  to the ellipsis site, then QR-ing Bill to locally bind the copied reflexive.
- The LF in (33) gives us the reading *John defended John before Bill defended Bill*.

(32) John<sub>1</sub> defended himself<sub>1</sub> before Bill did [<sub>VP</sub>  $\emptyset$ ] too. (... Bill defended Bill)

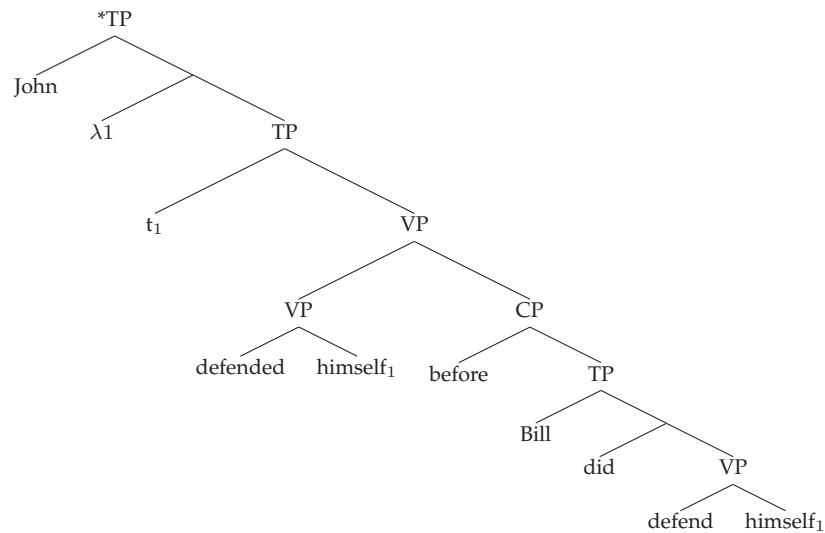
(33)



- But, with the same assumptions we can't derive strict readings. What goes wrong in the LF in (35)?

(34) John<sub>1</sub> defended himself<sub>1</sub> before Bill<sub>2</sub> did [<sub>VP</sub>  $\emptyset$ ] too. (... Bill defended John)

(35)



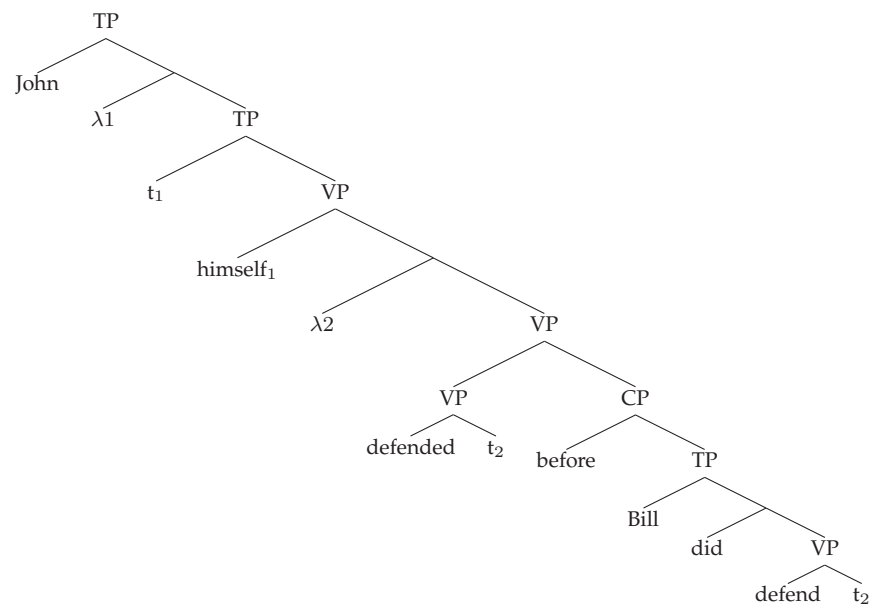
### 4.3 Summary

- Assuming LF copy and a Condition A where reflexives must be locally bound, we cannot get strict readings. Condition A is violated, the reflexive in the elided VP is not bound within its domain.
- Reflexives seem to have the opposite problem of pronouns. Sloppy readings are not problematic but strict readings are.
- The same solution, treating pronouns as referential or bound variables doesn't work for reflexives because they don't have the option of being interpreted referentially due to the Binding Principle.

### 4.4 Getting Strict Reflexives with Quantifier Raising

- One approach to this problem is to derive strict readings through the interaction of QR of the reflexive and LF-copying (Hestvik, 1995).
- When the VP is copied, the reflexive is no longer part of that copied VP, thus having the effect that Condition A is no longer relevant to the elided phrase and thus no longer violated.

(36)



(37)

To derive (36):

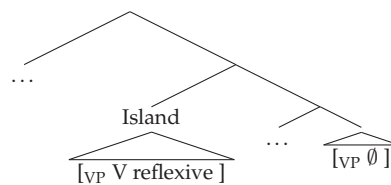
- QR reflexive to adjoin to upper VP
- Copy the lower VP to ellipsis site
- QR John so that Condition A is satisfied

- The LF in (36) gives us the interpretation we need for a strict reading: *John defended John before Bill defended John.*

#### 4.5 Some Problems with the QR Approach

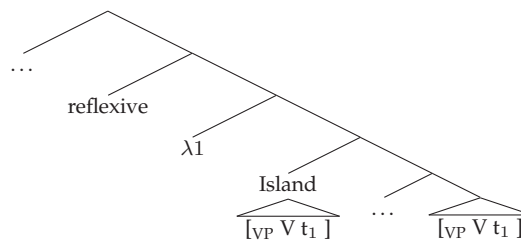
- Strict readings rely on the possibility of the reflexive to QR to a position where it can bind the trace in both the antecedent and elided VPs.
- If this approach is correct, then it's predicted that strict readings should not arise when it is impossible to bind into both VPs, such as in the configuration in (38), where the reflexive is embedded in an island for movement.

(38)



- If the reflexive QR-ed to bind into the elided VP the resulting ungrammatical structure would arise in (39).

(39)



##### 4.5.1 Islands: Coordination

- Coordinations are known islands for movement (Ross, 1967). For example, wh-movement is not permitted out of a conjunct of a coordination.

(40) \**[Which man]<sub>1</sub> did you invite [ConjP [DP Mary] and [DP a friend of t<sub>1</sub>]]?*

- QR is also not permitted out of a coordination (May, 1985; Fox, 2000).

(41) *Some student [ConjP [likes every professor] and [hates the dean]]. (\*∀ > ∃)*

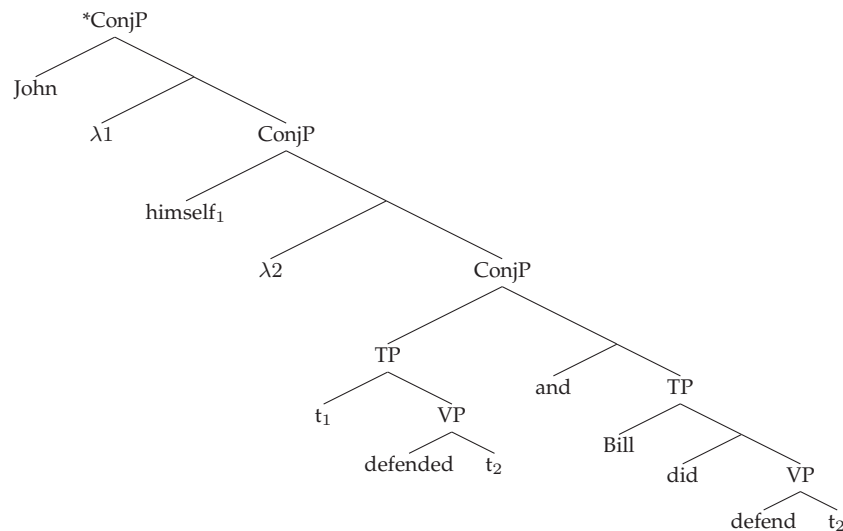
- If QR is unacceptable out of a coordination, the expectation for reflexives is that, if it undergoes QR out of a coordination, this movement should be equally unacceptable, and thus that strict readings should be ungrammatical.
- Yet (42) shows that strict readings are in fact possible.

(42) *John and Bill are very good friends, and would do anything to help the other out. When John was wrongfully accused of stealing some office supplies...*  
 he defended himself and Bill did too.

a. ...and Bill defended John

- The LF in (43) shows how we'd have to derive a strict reading under the movement approach.

(43)



(44) To derive the LF in (43):

- QR the reflexive out of the first conjunct to adjoin to ConjP
- Copy the VP of the first conjunct into the ellipsis site of the second conjunct
- QR the antecedent of the reflexive to adjoin to ConjP

- The LF would require two movements out of an island.

## 5 Summary

- We saw that pronouns give rise to strict and sloppy readings in verb phrase ellipsis.
- Deriving strict readings was unproblematic but sloppy readings couldn't be derived under the assumption that pronouns were only referential.
- How do we get sloppy readings? Allow the pronoun to be a bound variable as well.
- We also saw that reflexives give rise to strict and sloppy readings, but they had the opposite problem that pronouns had.
- Deriving sloppy readings was unproblematic, but strict readings couldn't be derived.
- How do we get strict readings? Allow the reflexive to QR out of the antecedent VP before LF copy.

- While this solution works when the reflexive can move to a position to bind into both the overt and elided VP, it can't work when this movement is blocked.

## References

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