Ling 165B: Syntax II

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Probing Structures.

Today we'll continue to explore new ways of detecting constituency. Some will be only able to probe derived structures.

(i) *only*

(ii) NPIs

Others will be able to probe underlying structures:

(i) Floating quantifiers

(ii) *Also* association

They will be useful to establish whether movement is involved in the structure of a string.

NPI licensing I

Some elements are not allowed to occur in a sentence unless some other element appears there as well.

→ Negative Polarity Items (NPIs) such as *any* are examples of that.

(1) a.*John bought anything
b. John did not buy anything

Here the licenser is negation.

Is there any structural relation that must hold between a licenser and a NPI? If so, how should this structural relation be characterized?

NPI licensing II

(2) Any: licenser is negation or negative NP

a.*anyone **didn't** buy a book
b.*I told anyone that John **didn't** buy a book
c. I told **no one** that anyone bought a book
d. I told **no one** that you saw anyone
e.*That **no one** bought the book annoyed anyone

(3) Any: licenser is a question.

a. **Did** John buy any book?
b. **Did** anyone buy a book?
c. I asked you **whether** John bought any book
d.*I asked anyone **whether** John bought a book
e.*The question **whether** John bought a book annoyed anyone

C-command Licensing condition

A licenser must c-command the NPI *any*.

NPI licensing III

Be aware! There are two types of *any*:

(i) free choice *any* and

(4) anyone can do this

(ii) NPI *any*

(5) I did not see anyone

To make sure you are using NPI any, always use (declarative) sentences in the past tense without modal verbs. These contexts don't allow for free choice any.

(6) *anyone came — * as free choice, * as NPI

(7) anyone can come — OK as free choice, * as NPI

To distinguish the two, a good approximation is that free choice any can be modified by *almost*, but NPI any cannot.

(8) Almost anybody could do this.

(9) *I did not see almost anybody

NPI licensing IV

It's not just about *any*!

(10) give a red cent; give a damn

a. John did **not** give a red cent to Arthur
b.*John give a red cent to Arthur/**no one**
c.*The person **no one** likes gave a red cent to Arthur

(11) lift a finger

a. Max did **not** lift a finger to help me
b.*Max lifted a finger to help me/**no one**
c.*The girl who likes **no one** lifted a finger to help Arthur

(12) in ages

a. **No one** had seen Rip van Winkle in ages
b.*Everyone had seen Rip van Winkle in ages
c.*The girls with **no** fear had seen Rip van Winkle in ages

(13) ever

a. John must **not** ever do this
b.*John must ever do this

NPI licensing V

C-command Licensing condition

The licenser must c-command the NPI.

Does NPI licensing hold of the underlying structure or of a derived structure?

(14) a.*Anyone$_i$ **didn't** t$_i$ buy a book
b. It seemed to **no one** that Bill was unhappy at all
c. Bill$_i$ seemed to **no one** t$_i$ to be t$_i$ unhappy at all
d.*anyone$_i$ seemed to **no one** t$_i$ to be t$_i$ unhappy at all

The licenser must c-command the NPI in the surface tree.

NPI licensing VI

Practice

The following sentence is ambiguous:

(15) John said that Bill slipped in the kitchen.

1. Explain what the readings are.

If we modify the sentence and we add an NPI, then only one interpretation survives.

(16) John said that Bill did not slip in any room in the house.

2. State what the interpretation is.

3. Is this expected?

How about:

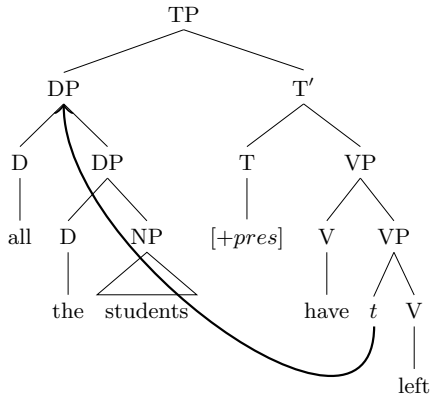
(17) John did not say that Bill slipped in any room in the house.

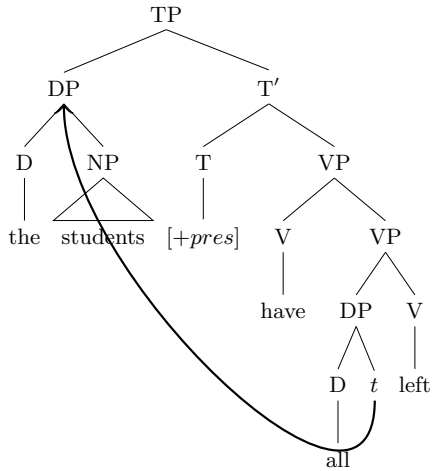
4. What do we predict in this case?

Floating Quantifiers I

(18) a. All the student left.
b. The students all left.
c.*The students left all.

$[_{DP}$ all the students $]_i$ t_i left
$[_{DP}$ the students $]_i$ all t_i left





If you are not familiar with this argument, please read ISAT, pp.219-220

Q-float can be used as a diagnostic for underlying trees: a stranded *all* indicates a position from which its associated DP has moved.

Here is how we will use this diagnostic: when quantifier floating succeeds, we can conclude movement has taken place.

Floating Quantifiers II

Sometimes the non-trace DP associated with *all* can be PRO.

(19) a. To all leave together would bother the girls
(the girls would be bothered if all of them were leaving together)
PRO$_i$ to all t$_i$ leave together would bother the girls
b. The girls wanted to all meet at 5
(the girls' wish was that all of them meet at 5)
The girls wanted PRO$_i$ to all t$_i$ meet at 5

Or think about this (some of you asked me about evidence for the first step of raising to subject!)

(20) The students seem all to have left.

Floating Quantifiers III

Practice

(21) The hosts asked us to all leave.

Also association I

The focus particle *also* is similar to only in that it can associate with the same material as only

(22) a. John had also **said** that Bill saw Sue ("said" in addition to "implied")
b. John had also said **that Bill saw Sue** ("Bill saw Sue" in addition to "Mary called Ann")
c. John had also said that **Bill** saw Sue ("Bill" in addition to "Henri")
d. John had also said that Bill **saw Sue** ("saw Sue" in addition to "kissed Ann")

It fails in the same contexts:

(23) a. John said he also **wanted to visit Mary** to his mother
b. John said he also wanted to visit **Mary** to his mother
c.*John said he also wanted to visit Mary **to his mother**

(24) a. (41) a. That John also **saw Bill** bothered Mary
b. That John also **saw** Bill bothered Mary
c.*That John also saw Bill bothered **Mary**

Also association II

This suggests the same rule is involved:

> *also* association
>
> *also* associates with a constituent.
> *also* must c-command its associate.

However, *also* is more permissive than *only* and it can sometimes associate with with a constituent to its left.

(25) **John** had also said that Bill saw Sue (in addition to Mary saying so)

Other times, it cannot:

(26) a. Ann said that Bill would also come
This cannot mean: Ann also, in addition to someone else, said that Bill would come.
b. Bill promised Mary to also invite Sam.
This cannot mean: Bill, in addition to someone else, promised Mary to invite Sam. And it cannot mean: Bill promised Mary, in addition to someone else, to invite Sam.

Also association III

c. Bill persuaded Mary to also invite Sam.
This cannot mean: Bill persuaded Mary in addition to someone else to invite Sam

In (25) *also* c-commands its associate in the underlying structure. The same cannot be said for the examples in (26).

(27) John$_i$ has also [$_{\text{VP}}$ t$_i$ said that Bill saw Sue]

(28) Ann$_i$ [$_{\text{VP}}$ t$_i$ said that Bill would also come]

Once again, we may be able to deduce something about underlying constituency from the distribution and meaning contribution of *also*.

Back to Binding Theory

When do the binding principles apply?

(i) they apply to derived trees;

(ii) they apply to underlying trees;

(iii) they apply to both or to some complex combination of (i) and (ii).

Principle A I

Principle A
An anaphor must be bound, and it must be bound in its domain.

When does Principle A apply?

Hyp. 1: before movement

Hyp. 2: after movement

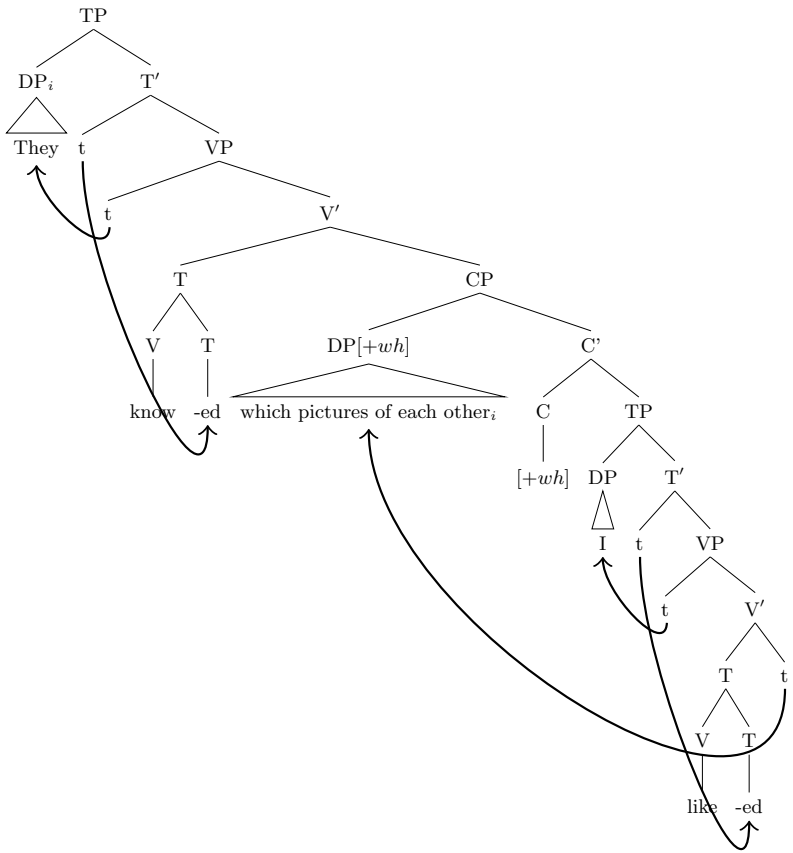
Hyp. 3: at some point of the derivation.

Principle A II

(29) a.*They$_i$ knew that I liked the pictures of each other$_i$

b. They$_i$ knew which pictures of each other$_i$ I liked

→ (29-a) is correclty excluded by Principle A.



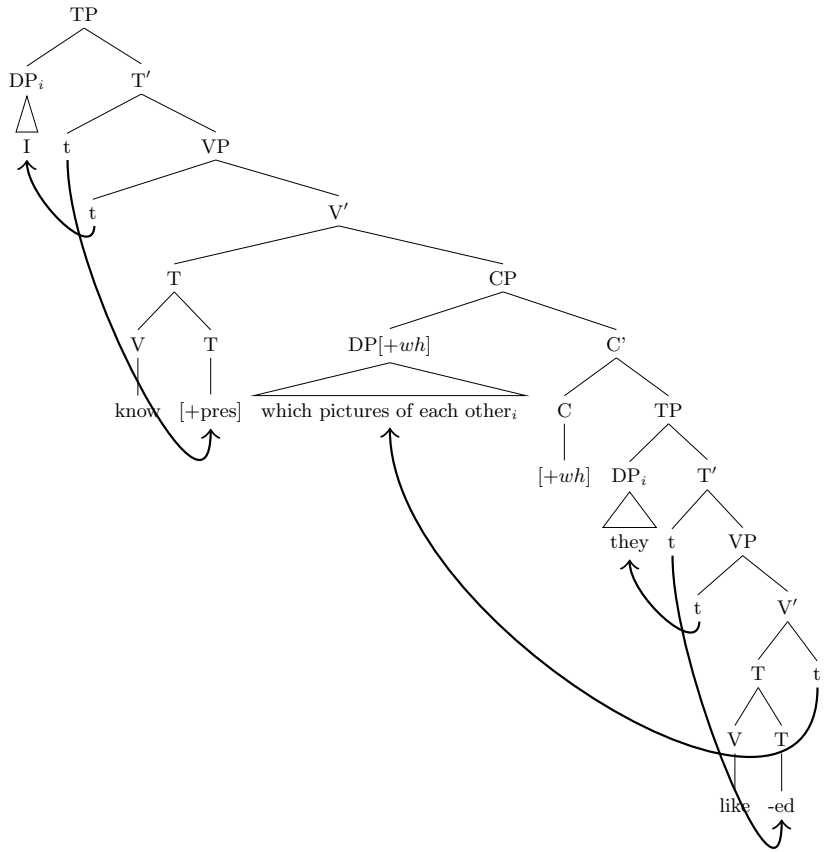
→ In (29-b), Principle A is only satisfied in the surface tree. Thus, (29-b) tells us that principle A does <u>not have to</u> be satisfied in the deep structure tree.

Principle A III

Now consider:

(30) a. I know which pictures of each other$_i$ they$_i$ liked
b. I know which pictures of each other$_i$ John said they$_i$ liked

→ In their surface positions, the anaphors do not have c-commanding antecedents. But they do in underlying structures prior to wh-movement.



→ This shows that Principle A does not have to be satisfied in the derived structure either (that is, it is not a **necessary** condition).

Principle A IV

Principle A
An anaphor must satisfy Principle A at some point of the derivation.

This conclusion can now be used to postulate certain underlying structural relations.

→ If an anaphor appears in a sentence deemed to be acceptable, and its relation with its antecedent does not satisfy Principle A, it is reasonable to hypothesize that it satisfied Principle A in some underlying structure.

→ In the case of (31-a) supports a raising analysis of *strike*

(31) a. The stories about each other struck them as being false.
b. [The stories about each other]$_{\text{i}}$ struck them as being t$_i$ false

Pronominal Binding I

Pronouns can have two types of antecedents: (i) referential expressions or (ii) quantifiers. These two cases don't seem to have the same properties:

(32) a. John$_i$ believed he$_i$ could get elected

b. Everyone$_i$ believed he$_i$ could get elected
$\neq$ Everyone$_i$ believed everyone$_i$ could get elected

"It is really only in situation (32-a) that it seems appropriate to talk about coreference. In (32-b) coindexing a pronoun with some other expression is a shorthand way of saying that the pronoun in question is being interpreted as a bound variable." *Bach and Partee*

Pronominal Binding II

→ In (32-a), we are dealing with a coreference relation. It does not require c-command.

(33) The mother of John$_i$ thinks he$_i$ will get elected.

→ In (32-b), we are dealing with a binding relation. It requires c-command.

(34)*That no one$_i$ succeeded displeased his$_i$ teacher.

Condition on Pronominal Binding:
A pronoun can be bound by an antecedent only if the antecedent c-commands the pronoun.

Pronominal Binding III

Once again, then, we can infer some information about underlying structures!

(35) I know [which of his$_i$ poems]$_{\text{k}}$ [every poet]$_{\text{i}}$ prefers t$_k$, (namely: the first one he wrote)

(36) It is [a picture of their$_i$ home town]$_{\text{k}}$ that [few football players]$_{\text{i}}$ keep t$_k$ in their$_i$ locker

In these cases, pronominal binding is satisfied in the underlying tree.

VP ellipsis: first glance I

Here is an example of "VP ellipsis":

(37) John smokes. He shouldn't. Heim & Kratzer (1998)

The second sentence is missing a VP on the surface but it is understood as if there was one present.

(38) John smokes. He shouldn't <smoke>

How does this operation work? It is not allowed to omit arbitrary material in arbitrary environments:

(39)*John smokes. He shouldn't <drink>

Ellipsis of a VP happens under identity with VP in the preceding clause:

(40) Identity condition on Ellipsis (simplified)
The elided VP is understood as being identical to another overt VP in the discourse context.

VP ellipsis: first glance II

How do we get the intended meaning from something that is phonologically absent?

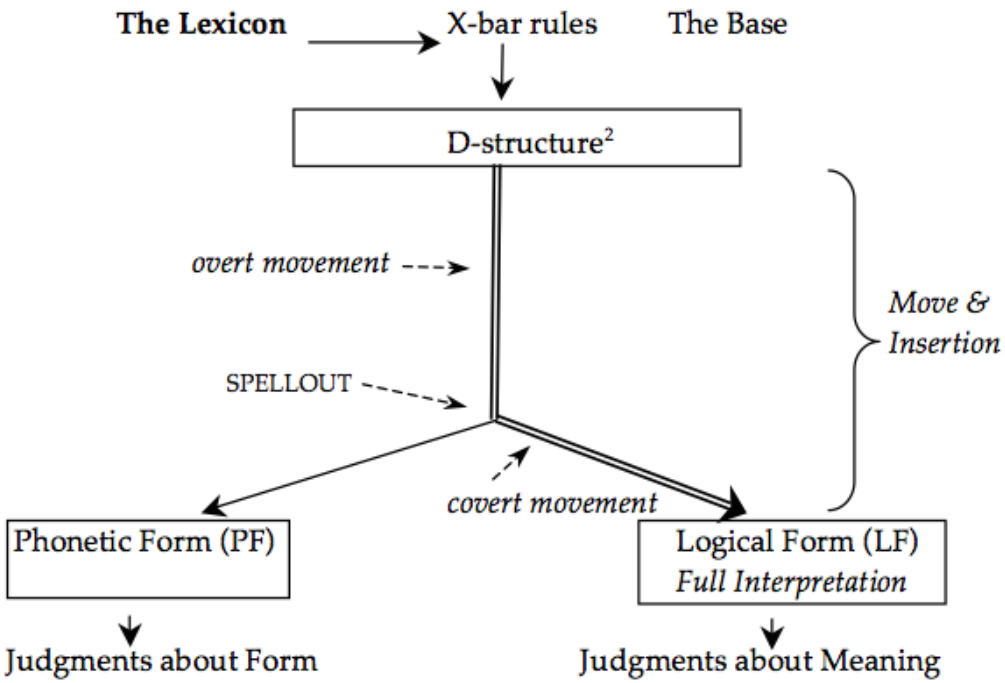
→ Structural approaches assume there is underlying syntactic structure at the ellipsis site, and it's from this covert syntactic structure that we get the intended meaning.

→ 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).

Our model of grammar I

How does deletion work?



LF and PF are two interface levels, because they represent the interface with the phonological system and with the interpretive system respectively.

PF: what the sentence sounds like

LF: what the sentence means

Copying or delition happens between SPELLOUT *and LF.*

Our model of grammar II

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.

→ Deletion happens after SPELLOUT and does not affect the LF (interpretation) of the sentence. It only affects the pronunciation.

(41) a. John smokes. He should not smoke — SPELLOUT and LF.
b. John smokes. He should not ~~smoke~~ — PF-Deletion rule
c. John smokes. He should not. — PF

Our model of grammar III

LF-Copying

→ The LF-copying approach starts with a syntactic structure where there is a phonologically null anaphoric element at the ellipsis site. identical to another VP in the discourse context.

→ 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.

(42) a. John smokes. He should not [$_{\text{VP}}$ ∅] — SPELLOUT and PF
b. John smokes. He should not [$_{\text{VP}}$ smoke] — LF-copying rule
c. John smokes. He should not smoke — LF

Our model of grammar IV

LF-copying is a process that happens after spellout.

→ It's a copying operation that gives a reference to a pronoun or anaphor.

→ It happens covertly on the way to LF after SPELLOUT

→ It is triggered by coindexation.

Frank$_i$ thinks that he$_i$ should come. SPELLOUT and PF

⇓ *covert copying rule*

Frank$_i$ thinks that Frank$_i$ should come. LF

Scope ambiguities I

Can you think of other cases of mismatch between pronunciation and meaning (and therefore after SPELLOUT*?*

Recall: scope ambiguities with quantifiers (ambiguities that occurs when two quantifiers or similar expressions can take scope over each other in different ways in the meaning of a sentence.)

(43) Some boy danced with every girl

(i) There is a unique boy, Peter, who danced with every single girl.

(44) $\exists x[\text{boy}(x) \;\&\; \forall y[\text{girl}(y) \rightarrow \text{dance}(x,y)]]$ $\exists > \forall$

(ii) Every girl is such that some boy (not necessarily the same boy danced with her.

(45) $\forall y[\text{girl}(y) \rightarrow \exists x[\text{boy}(x) \;\&\; \text{dance}(x,y)]]$ $\forall > \exists$

Scope ambiguities II

The surface position of the quantifiers in (43) does not predict the reading (ii). This reading is normally derived through Quantifier Raising. That is, we move the universal quantifier so that it can scope over the existential one.

→ This movement that we can't hear is an example of covert movement that happens after SPELLOUT.

(46) [$_{\text{TP}}$ [$_{\text{DP}}$ some boy]$_{\text{i}}$ ... [$_{\text{VP}}$ t$_i$ danced [$_{\text{PP}}$ with [$_{\text{DP}}$ every girl]]]]

(47) [[$_{\text{DP}}$ every girl]$_{\text{k}}$ [$_{\text{TP}}$ [$_{\text{DP}}$ some boy]$_{\text{i}}$ ... [$_{\text{VP}}$ t$_i$ danced [$_{\text{PP}}$ with t$_k$]]]]

Practice: show the main steps of derivation of (47). You should include: (i) deep structure, (ii) spell out (iii) PF and (iv) LF.

Question: we discussed a different type of ambiguity in this class. An example is given below:

(48) John killed the prisoner with a knife.

What is the difference between the type of ambiguity displayed by (48) and the scope ambiguity in (43)?

Scope ambiguities III

Now consider the following sentence:

(49) Someone hates every faculty member.

(49) is ambiguous. What happens when we add *and adores the princess*?

(50) Someone hates every faculty member and adores the princess.

Can you explain it?

Scope ambiguities IV

Any funny ones?

Here is mine:

(51) A woman gives birth every 48 seconds.

VP ellipsis and sloppy and strict readings I

Now we can go back to the difference between binding and coreference. We can distinguish the two even when the antecedent is a referential expression.

(52) John [loves his wife] and so does Bill < love his wife>.

a. John loves Max's wife, and Bill loves Max's wife. "strict identity", coref.
b. John loves John's wife, and Bill loves John's wife. "strict identity", coref.
c. John loves John's wife, and Bill loves Bill's wife. "sloppy identity", binding

There are no "mix and match" readings, with coreference in one conjunct and binding in the other.

≠ John loves Max's wife, and Bill loves Bill's wife.

How does this work? Pronouns can be

(i) interpreted referentially (strict readings)

(ii) interpreted in some other way which makes them covary with the antecedent (sloppy readings). *How?*

VP ellipsis and sloppy and strict readings II

Let's look at the referential cases first. They are easy to account for!

Here is the derivation for reading (a):

(53) a. John$_j$ loves his$_i$ wife and so does Bill [$_{VP}$ $\emptyset$]. SPELLOUT and PF
b. John loves Max's wife and so does Bill [$_{VP}$ $\emptyset$]. covert pronoun-copying rule
c. John loves Max's wife and so does Bill [$_{VP}$ love Max's wife] VP-copying rule
d. John loves Max's wife and so does Bill love Max's wife LF

Here is the derivation for reading (b):

(54) a. John$_i$ loves his$_i$ wife and so does Bill [$_{VP}$ $\emptyset$]. SPELLOUT and PF
b. John loves John's wife and so does Bill [$_{VP}$ $\emptyset$]. covert pronoun-copying rule
c. John loves John's wife and so does Bill [$_{VP}$ love John's wife] VP-copying rule
d. John loves John's wife and so does Bill love John's wife LF

Discuss with your neighbor: do we need to order the cover pronoun-copying rule and the VP-copying rule?

VP ellipsis and sloppy and strict readings III

Now derive the LF and PF of readings (a) and (b) under a PF-deletion approach!

(55) a. John$_j$ loves his$_i$ wife and so does Bill love his$_i$ wife SPELLOUT
b.
c.
d.

(56) a. John$_i$ loves his$_i$ wife and so does Bill love his$_i$ wife SPELLOUT
b.
c.
d.

VP ellipsis and sloppy and strict readings IV

But how do we derive the sloppy reading? 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 loves John's wife] $\neq$ [VP loves Bill's wife]

In sloppy readings, the pronoun is not interpreted referentially.

$\rightarrow$ It is interpreted as a bound variable, whose value depends on a local antecedent (it covaries with a binder).

$\rightarrow$ The binder (John or Bill) behave like quantifiers (they undergo QR)

$\approx$ John has the property of being a x who likes x's wife. Bill does [have the property of being a x who likes x's wife].

$\rightarrow$ The binder has to c-command the pronoun when it is interpreted as a variable.

$\rightarrow$ We'll use a different notation when for cases in which the pronoun is interpreted as a variable: him_x.

We need a rule that copies the content of the antecedent into the bound variable. Let's call this rule *covert variable-copying rule*.

VP ellipsis and sloppy and strict readings V

Let's derive this together! We are going to look at the LF-copying approach first.

Question: Do we need to order the covert variable-copying rule with respect to the VP-copying rule?

(57) a. John loves his$_x$ wife and so does Bill [$_{\text{VP}}$ $\emptyset$]. SPELLOUT and PF
b.
c.
d. John loves John's wife and so does Bill love Bill's wife LF

Now, let's consider the other ordering:

(58) a. John loves his$_x$ wife and so does Bill [$_{\text{VP}}$ $\emptyset$]. SPELLOUT and PF
b.
c.
d.

On your own: do the derivation for the sloppy reading under a PF-deleting approach.