Ling 120B: Syntax I

Nico(letta) Loccioni
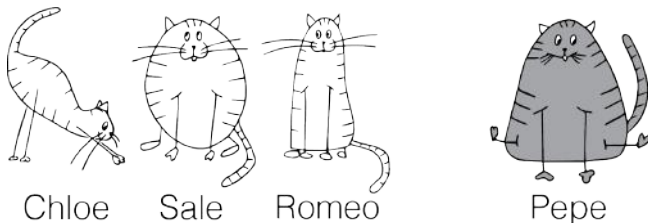
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Binding Theory

Binding Theory I

Binding theory is a theory of what controls possible coreference between different types of DPs in particular syntactic configurations.

→ <u>Reference</u>: The relation between a DP and the thing in the world that the meaning of that DP picks out.

→ Two DPs corefer if they refer to the same entity.

Chloe   Sale   Romeo   Pepe

[$_{DP}$ Pepe] and [$_{DP}$ the gray cat] refer to the same individual in this context.

[$_{DP}$ Chloe] and [$_{DP}$ the skinniest cat] refer to the same cat in this context.

[$_{DP}$ Nico] and [$_{DP}$ your syntax professor] refer to the same person.

Binding Theory II

When can two DPs in a sentence refer to the same individual?

It depends. Which one is it?

(A) <u>Anaphors</u>: itself, himself, herself, yourselves

(B) <u>Pronouns</u>: you, me, us, him

(C) <u>R-expressions</u>: John, the professor...

Principle A I

Principle A (version 4):

An anaphor must be **bound** in its binding domain.

- → *Binds*: A binds B if and only if A c-commands B and A and B are coindexed.

    - → *C-Command*: The relationship between a node, its sister, and the stuff dominated by its sister.

- → *Binding domain*: The smallest XP containing the anaphor that has a subject.
    - → *NB: According to this definition the anaphor can be the subject of the XP*

Principle A II

Binding Principle A also applies to *reciprocals* like 'each other'

→ 'each other' requires an antecedent that is plural.

   (1)   My sister and your friend clearly like each other.

Principle A III

To recap, let's look at (2), which is a shorthand for the three different sentences below:

(2)   Fred$_i$ said that [the child of [the neighbor]$_k$]$_j$ enjoys himself$_{*i/j/*k}$

(3)   a.*Fred$_i$ said that [the child of [the neighbor]$_k$]$_j$ enjoys himself$_i$
      b.*Fred$_i$ said that [the child of [the neighbor]$_k$]$_j$ enjoys himself$_k$
      c. Fred$_i$ said that [the child of [the neighbor]$_k$]$_j$ enjoys himself$_j$
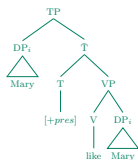
Principle A IV

(4) Fred$_i$ said that [the child of [the neighbor]$_k$]$_j$ enjoys himself$_{*i/j/*k}$
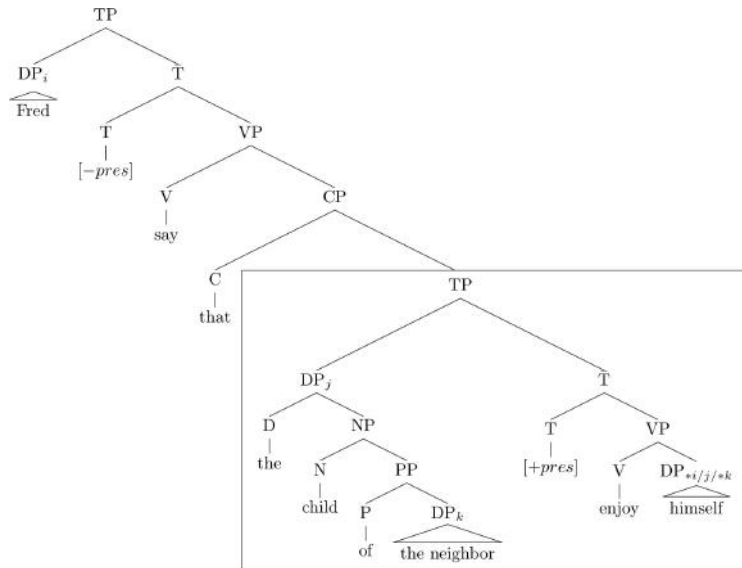
Practice

For each of the sentences below, (i) draw the tree structure, (ii) state the binding domain of the anaphor and (iii) indicate whether the sentence is expected to be grammatical or ungrammatical with the co-indexed antecedent. (5) is done for you!

(5) *Herself$_j$ loves Mary$_j$.

(i)

(ii) *the binding domain is the whole sentence.*

(iii) *BT does predict the sentence above to be ungrammatical: 'Herself' is not bound because the coindexed DP 'Mary' does not c-command it.*

(6) *Mary$_j$ heard John laugh at herself$_j$.

(7) John saw Mary$_j$ confuse herself$_j$.

(8) John$_j$ loved the new pictures of himself$_j$.

(9) [The biographer of [Nelson Mandela]$_i$]$_j$ appreciated himself$_{j/*i}$

Practice

Consider the following sentence. (i) Draw the tree structure, (ii) state the binding domain of the anaphor and indicate whether the sentence is expected to be grammatical or ungrammatical with the co-indexed antecedent.

(10) Alice guessed that Matt$_i$'s brother gave himself$_i$ a nice treat.

.

Principle B: Pronouns I

→ Pronouns seem to have opposite requirements

(11) a.*Herself is coming
   b. She$_i$ likes herself$_i$
   c.*She$_i$ likes herself$_j$
   d.*She$_i$ thinks that John likes herself$_i$

(12) a. She is coming
   b.*She$_i$ likes her$_i$
   c. She$_i$ likes her$_j$
   d. She$_i$ thinks that John likes her$_i$

Principle B :

A pronoun must be **free** in its binding domain.

→ *Binds*: A binds B if and only if A c-commands B and A and B are coindexed.

   C-Command: The relationship between a node, its sister, and the stuff dominated by its sister.

→ *Binding domain* (BD): The smallest XP containing the pronoun that has a subject.

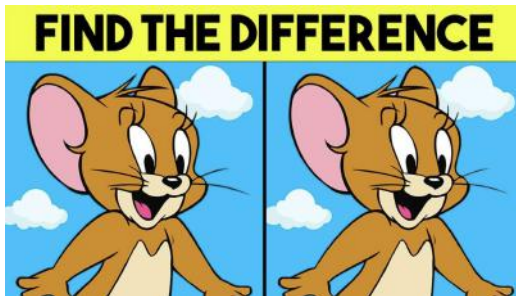   *NB: According to this definition the pronoun can be the subject of the XP*

Principle B: Pronouns II

(13) Sue$_i$ found that [the sister of [the mother]$_k$]$_j$ liked her$_{i/*j/k}$
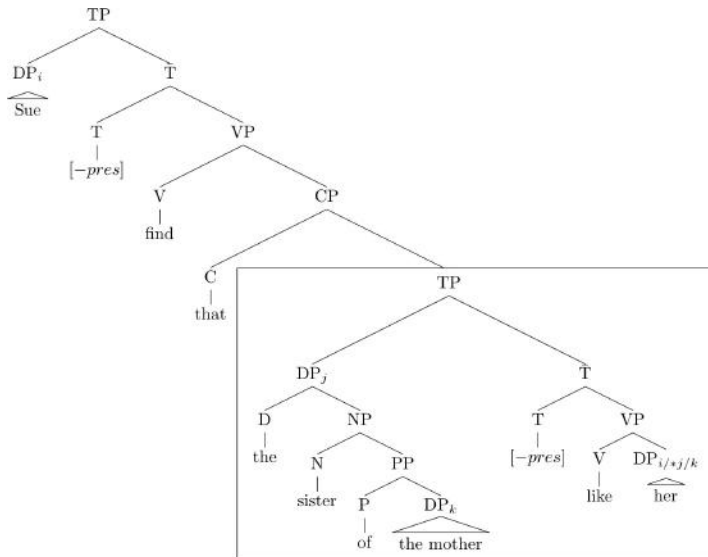
The BD of anaphors and pronouns I

Let's compare Principle A and Principle B.

An anaphor must be bound in its binding domain (=the smallest XP containing the anaphor that has a subject).

A pronoun must be free in its binding domain (=the smallest XP containing the pronoun that has a subject).

The BD of anaphors and pronouns II

If the definition of BD is the same, we should expect anaphors and pronouns to be in *complementary distribution*.

→ In most cases, this prediction is borne out, as we saw.
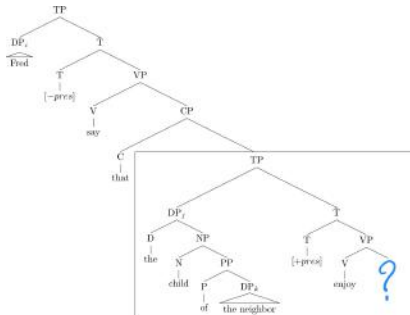
→ But in same cases it is not!

(14) a. They$_i$ like [[**their**$_i$] books]
b. They$_i$ like [[**each other**$_i$]'s books]

The BD of anaphors and pronouns III

→ In order to account for the facts in (14), we need to allow the anaphor to have a larger BD. We do so changing the definition of BD for anaphors (the rest is left unchanged)

Principle A (final version):

An anaphor must be **bound** in its binding domain.

Binds: A binds B if and only if A c-commands B and A and B are coindexed.

C-Command: The relationship between a node, its sister, and the stuff dominated by its sister.

Binding domain: The smallest XP that has a subject **that c-commands the anaphor**

NB: According to this definition the anaphor <u>cannot</u> be the subject of the XP

Binding domain of anaphors:

The smallest XP that has a subject **that c-commands the anaphor**
NB: According to this definition the anaphor <u>cannot</u> be the subject of the XP
Binding domain of pronouns:

The smallest XP containing the pronoun that has a subject.
NB: According to this definition the pronoun can be the subject of the XP

Practice

Consider the following sentences:

(15) John$_i$'s young brother thinks he$_i$ should leave.

(16) That John$_i$ lost the race disappointed him$_i$ deeply.

(17) Anna$_i$ really cherishes her$_i$ friendships.

Can BT explain their grammaticality status? Explain.

Principle C: R-expressions

R(eferential)-expressions = non-pronominal expressions

→ Proper names: John, Sue, Peter...

→ Descriptions: the president of the US, the Italian textbook, my sister...

(18) a.*He$_i$ saw Jonh$_i$
b.*He$_i$ said that Mary saw John$_i$

> **Principle C (version1):**
>
> R-expressions cannot be coindexed with preceding pronouns.

The version of principle C above is too strong:

(19) The builder of his$_i$ house visited Peter$_i$

> **Principle C (final version):**
>
> R-expressions cannot be bound.

Practice

Consider the following sentences:

(20) [Matt$_i$'s new boyfriend]$_j$ sold his$_{i/j}$ house

(21) They$_i$ show Mary her$_i$ previous apartment.

(22)*She$_i$ said that [my sister]$_i$ will visit.

Can BT explain their grammaticality status? Explain.

Locality of Selection I

At this point, we have a system where structure is mostly dictated by the selectional properties of individual lexical items.

→ **Lexical entries can be used to represent this information.** The information in these lexical entries tells us how to build structure.

- It tells us whether, and which, complements are required. And it tells whether a specifier is required.

- For example the lexical entry below tells us that two structures are possible for the phrase headed by 'in':

in   P   free   (selects DP)   c-selects DP
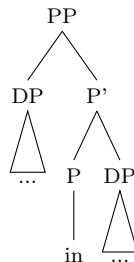
Locality of Selection II

$\rightarrow$ Locality of selection means that these requirements are local: the argument required by 'in' is a complement to this P head, whereas the subject must be in the specifier position.

> **Locality of Selection (preliminary)**
>
> If an atom selects an element, it acts as a head. This head must have the selected element as its complement or its subject. Selection is local in the sense that there is a maximal distance between a selector and what it selects.
>
> If α selects β as complement, β is a complement of α;
> If α selects β as subject, β is the subject of α;
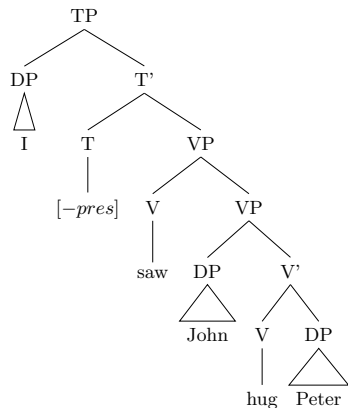> If α selects β as an adjunct, β is the adjunct of α;

In other words, complements and subjects are realized within the maximal projection headed by the lexical item. Nice and tidy.
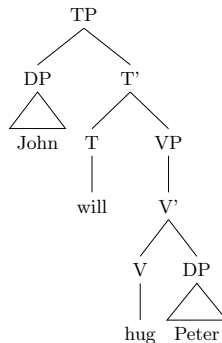
VP-internal Subject Hypothesis I

But there is a blatant violation of this principle in what we've been doing so far.

a. I saw <u>John</u> hug Peter.

b. <u>John</u> will hug Peter.

VP-internal Subject Hypothesis II

Something's wrong. Three possibilities:

a. Locality of selection is not a desirable goal.
b. 'John' is not in fact selected for by 'hug'.
c. 'John' is indeed selected for locally by 'hug'; other factors force it to be realized in the specifier of TP.

We go with option (c).

VP-internal Subject Hypothesis III

Proposal:

→ Subjects enter the derivation in the VP.

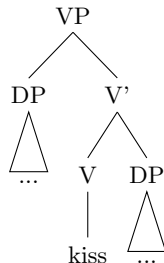→ They end up in Spec, TP as a result of movement.
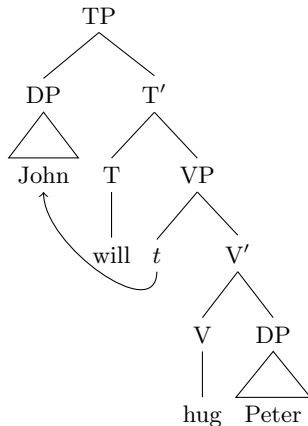
→ This is called the **VP-internal Subject Hypothesis**.

VP-internal Subject Hypothesis IV

→ It applies to the selected subject of all predicates.

kiss   V   free   <u>DP</u>   DP

In §6.8.2. the authors of your textbook adopt the convention that the phrases selected as specifiers are <u>underlined</u>.
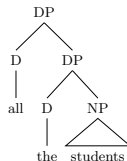
→ if subjects are VP internal, why do they move?

> **The Extended Projection Principle (EPP)**
> The specifier of TP always has to be filled.

VP-internal Subject Hypothesis V

$\rightarrow$ What evidence do we have? Floating quantifiers!

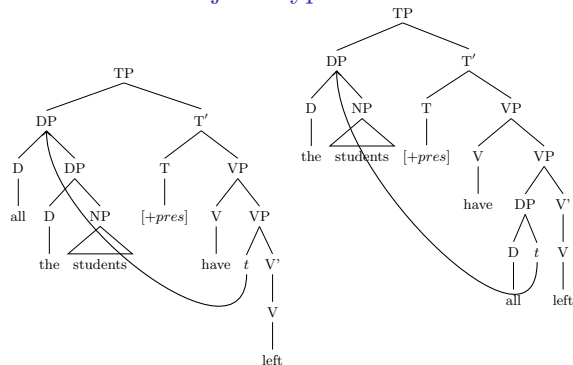(23) [All the students]

(24) [**All the students**] have   left

(25)   [**The students**] have   **all** left

(26)*   [**The students**] have left **all**

VP-internal Subject Hypothesis VI

Proposal: Subjects enter the derivation in VP

→ [All the students] starts as a constituent in VP

→ Subject moves to specifier of TP

→ The movement can leave behind *all*

→ *all* cannot appear to the right of V, because subjects originate in a specifier, not a complement

Practice

Draw the tree structure for the following sentence:

(27) My brothers have both studied Greek for years.

Quick discussion: How do we calculate the BD now that we have movement?