

# Ling 165B: Syntax II

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## Practice

Let's work on this example:

(1) Marc<sub>*i*</sub> begged [ his<sub>*i*</sub> sister ]<sub>*j*</sub> to let him<sub>*i*</sub> help her<sub>*j*</sub>

What is a question?

- The meaning of questions;
- Interrogatives cross-linguistically;
- Embedded questions;
- Scope;
- Wh-movement and *wh-in situ* languages

## Meaning of a question

We could characterize the meaning of a question by the set of its possible (or true) answers.

→ Polar (or yes/no) questions have two (or possibly three) answers.

(2) Is it raining?  $\rightsquigarrow$  { it is raining, it is not raining }

(3) Does Peter own a dog?  $\rightsquigarrow$  { Peter owns a dog, Peter doesn't own a dog }

→ Constituent questions have a large number of answers.

(4) What did Thomas buy?  $\rightsquigarrow$  { Thomas bought wine, Thomas bought a book, Thomas bought a bike ... }

These are matrix interrogatives.

## Matrix and Embedded interrogatives

In matrix interrogatives, the **speaker** has a question which requires a response from the hearer.

→ For (2). Tell me which one is true: *it is raining* or *it is not raining*.

→ For (4). Tell *for which x*: *Thomas bought x*.

Embedded interrogative are different. The **speaker** does not a question which requires a response from the hearer. They report that someone else has an attitude towards a question - or answers to a question.

(5) John wonders if it is raining.

↪ John does not know which of the answers to “is it raining?” is true

(6) John knows if it is raining.

↪ John knows which of the answers to “is it raining?” is true

(7) John wonders who will be coming to the party.

↪ John does not know which of the answers to “who is coming to the party?” is true

Verbs such as *know*, *wonder*, *forget* can take interrogative complements.

Matrix and embedded questions have different **scope**.

# Scope I

Scope of questions  $\rightsquigarrow$  which part of the sentence is interrogative

→ In English, the scope of a wh-question *is normally marked by the position of the wh-word*.

- (8) John told Bill **who** \_\_\_ **would be coming**
- SCOPE of question [TP \_\_\_ would be coming ]
  - John told Bill for which x: *it is the case that x would be coming*
  - Embedded question - It does not require response from the hearer.
- (9) **Who** did John tell Bill \_\_\_ **would be coming**
- SCOPE of question [TP John told Bill \_\_\_ would be coming ]
  - for which x: *John told Bill that x would be coming*
  - Matrix question - It does require response from the hearer.

It is useful to think of the wh-phrases in these cases as marking their scope ( $\approx$  they move from inside their scope to the edge of it).

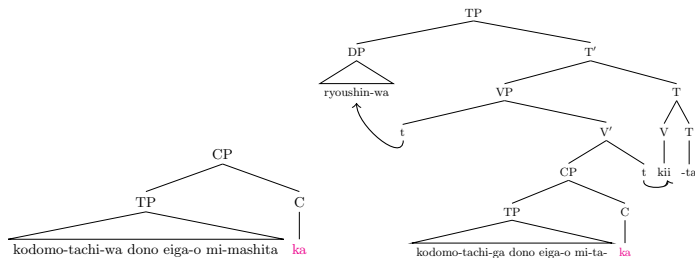
- In structural terms, a wh-phrase moves to the specifier of the lowest projection that dominates its scope.
- We will refer to this position as the wh-phrase's scope position.

## Scope II

- Not all languages mark the scope of questions in this way.
- In Japanese, we find the *wh*-word in the same position as its non-questioned correlate. *ka* or *no* occurs as a scope marker.

- (10) [ kodomo-tachi-wa dono eiga-o mi-mashita-] ka?  
 child-pl-TOP which movie-ACC see-past KA  
 ‘Which movie did the children watch?’

- (11) ryoushin-wa [ kodomo-tachi-ga dono eiga-o mi-ta- ] ka kii-ta  
 parents-TOP child-pl-NOM which movie-ACC see-past KA ask-past  
 ‘The parents asked which movie the children watched’





→ Some languages do not seem to mark the scope in questions at all.

- (12) Botong zhidao Huangrong xihuan shei  
Botong know Huangrong like who  
'Botong knows who Huangrong likes' or  
'Who does Botong know (that) Huangrong likes?' (Mandarin, Cheng 2003)

We can distinguish scope in the case of polar questions as well.

(13) Do **you wonder if Mary will call**?

- a. SCOPE of question  $[[_{TP} \text{ You wonder if Mary will call } ]]$
- b. {NOT (you wonder if Mary will call), you wonder if Mary will call}
- c. Matrix question - It does require response from the hearer.

(14) John wonders if **Mary will call**

- a. SCOPE of question  $[_{TP} \text{ Mary will call } ]$
- b. John wonders which one is true {NOT (Mary will call), Mary will call }
- c. Embedded question - It does not require response from the hearer.

*The fact that some lexical items appear displaced from the position where they are interpreted is “an irreducible fact [...] expressed somehow in every contemporary theory of language” (Chomsky 1995, 222).*

# Phenomena related to *wh*-movement in English

# Pied-piping

When we move something bigger than the wh-word, we call this Pied Piping.

→ Sometimes it is optional (and maybe formal)

(15) [To whom]<sub>i</sub> did you speak t<sub>i</sub> about our problem?

→ Sometimes it is impossible:

(16)\*[For which book]<sub>i</sub> are you looking t<sub>i</sub>?

→ Sometimes it is mandatory:

(17) a. [Whose book]<sub>i</sub> did you read t<sub>i</sub>?

b.\*Who<sub>i</sub> did you read t<sub>i</sub>'s book?

c.\*Whose<sub>i</sub> did you read t<sub>i</sub> book?

## P-stranding

Sometimes only the DP inside a PP moves and leaves the P behind. This phenomenon is called P- stranding.

→ It is very natural in some cases.

(18) Who<sub>i</sub> did you talk to t<sub>i</sub>?

→ It is impossible in some languages:

- (19) a. \*Chi<sub>i</sub> hai parlato a t<sub>i</sub>?  
Who have.2SG talked to  
b. [A chi]<sub>i</sub> hai parlato t<sub>i</sub>?  
To whom have.2SG talked?  
'Who did you talked to?'

**Italian**

→ Even in English p-stranding is degraded with some adjuncts. **Poll ??**

- (20) a. ?[Which class]<sub>i</sub> did you sleep [during t<sub>i</sub>]?  
b. \*[Which law]<sub>i</sub> do we have to declare bankruptcy [because of t<sub>i</sub>]?

So, how does wh-movement work?

At first, it appears that the movement of the wh-phrase is *unbounded*.

- (21) a. What<sub>i</sub> did Bill see t<sub>i</sub>?  
b. What<sub>i</sub> did you say [CP that Bill saw t<sub>i</sub>]?  
c. What<sub>i</sub> does Sue think [CP that you said [CP that Bill saw t<sub>i</sub>]]?  
d. What<sub>i</sub> does Bill suspect [CP that Sue thinks [CP that you said [CP that Bill saw t<sub>i</sub>]]]?  
etc.

Nota Bene The unboundedness of wh-movement is one important difference with the raising to subject kind of movement, which usually can never cross tensed CP boundaries.

- (22) a. [CP Who<sub>i</sub> did [TP you say [CP that [TP I pushed t<sub>i</sub>]]]]]?  
b.\*[TP You<sub>i</sub> seem [CP that [TP t<sub>i</sub> pushed him ]]]]?

This is one of the systematic differences between A-movement (movement of the raising kind, passives, and from spec, VP to Spec, TP) and A-bar movement (movement of the wh-kind).

However, this apparent freedom of movement is misleading.

- We are sometimes required to move a bigger phrases (e.g. with non strandable Ps, or with movement of whose, that is with obligatory pied piping)
- There are cases in which we cannot move at all:

- (23) a. A picture of some monster scared the entire population  
b.\*Who<sub>i</sub> did [a picture of t<sub>i</sub> ] scare the entire population?



## The A-over-A principle I

The first systematic attempt to capture the contexts that blocked the movement of wh-phrases was Chomsky's (1964) A-over-A Principle.

### **The A-over-A Principle:**

It is not possible to move a category from a context that is embedded inside the same type of category (A over A).

#### Case 1: Relative clauses

- (24) a. You talked to the man that read a magazine  
b. You talked to [DP the [NP [NP man] [CP that read [DP a magazine]]]]  
c. You talked to [DP the [NP [NP man] [CP that read [DP what]]]]  
d.\*What<sub>i</sub> did you talk to [DP the [NP [NP man] [CP that read t<sub>i</sub>]]?

#### Case 2: Coordination

- (25) a. You ate some chicken and rice  
b. You ate [DP [DP some chicken] and [DP rice]]  
c. You ate [DP [DP what] and [DP rice]]  
d.\*What<sub>i</sub> did you eat [DP t<sub>i</sub> and [DP rice]]?

## The A-over-A principle II

The A-over-A is too weak. It does not block cases that are ill formed even though they look very much like the excluded cases.

- (26) a. You talked to a man that looks very intelligent  
b. You talked to [<sub>DP</sub> [<sub>DP</sub> a man] [<sub>CP</sub> that looks [<sub>AP</sub> very intelligent] ]]  
c. You talked to [<sub>DP</sub> [<sub>DP</sub> a man] [<sub>CP</sub> that looks [<sub>AP</sub> how intelligent] ]]  
d.\*[<sub>AP</sub> How intelligent]<sub>i</sub> did you talk to [<sub>DP</sub> [<sub>DP</sub> a man] [<sub>CP</sub> that looks t<sub>i</sub> ] ]?
- (27) a. You ate rice from India and some chicken  
b. You ate [<sub>DP</sub> [<sub>DP</sub> rice from India] and [<sub>DP</sub> some chicken]]  
c. You ate [<sub>DP</sub> [<sub>DP</sub> rice from [<sub>PP</sub> where] ] and [<sub>DP</sub> some chicken]]  
d.\*Where<sub>i</sub> did you eat [<sub>DP</sub> [<sub>DP</sub> rice from t<sub>i</sub>] and [<sub>DP</sub> some chicken]]?

## The A-over-A principle III

The A-over-A is too strong. it blocks cases that it should not block.

- (28) a. You saw a picture of some students  
b. You saw [<sub>DP</sub> a picture of [<sub>DP</sub> some students]]  
c. You saw [<sub>DP</sub> a picture of [<sub>DP</sub> which students]]  
d. [<sub>DP</sub> Which students]<sub>i</sub> did you see [<sub>DP</sub> a picture of t<sub>i</sub>]?

The A-over-A was replaced by a number of independent constraints, most of which are due to Ross (1967). Ross conducted a systematic investigation of when wh-movement was allowed and when it was not allowed and proposed a large catalog of what he called 'island constraints'.

# The constraints

All the constraints we are going to see have the general format:

**Constraint XYZ:** Movement cannot extract anything from a certain type of structure that looks like this...

**Wh-islands:**

It is not possible to move a wh-phrase out of an embedded question.

That is:

- (i) a wh-phrase cannot move out of a CP whose head is [+wh] (and therefore the specifier is filled with another wh-phrase)
- (ii) a wh-phrase cannot move out of a CP whose head is *whether* or *if*.

→ Movement is blocked both in tensed and tenseless questions.

- (29) a. You wonder [<sub>CP</sub> who bought the wine for the party]  
b. You wonder [<sub>CP</sub> who bought what for the party]  
c. \*What<sub>i</sub> do you wonder [<sub>CP</sub> who bought t<sub>i</sub> for the party]?
- (30) a. Sue asked [<sub>CP</sub> where PRO to hide your keys]  
b. Sue asked [<sub>CP</sub> where PRO to hide what]  
c. \*What<sub>i</sub> did Sue ask [<sub>CP</sub> where to hide t<sub>i</sub>]?

- (31) a. You know [<sub>CP</sub> why Bill called the police]  
b. You know [<sub>CP</sub> why who called the police]  
c. \*Who<sub>i</sub> do you know [<sub>CP</sub> why t<sub>i</sub> called the police]?
- (32) a. Bill wonders [<sub>CP</sub> who filed for divorce yesterday]  
b. Bill wonders [<sub>CP</sub> who filed for divorce when]  
c. \*When<sub>i</sub> does Bill wonder [<sub>CP</sub> who filed for divorce t<sub>i</sub>]?

→ Embedded polar (or Y/N) questions are also islands:

- (33) a. You wonder [<sub>CP</sub> whether Sue will present her talk tomorrow]  
b. You wonder [<sub>CP</sub> whether Sue will present what tomorrow]  
c.\*What<sub>i</sub> do you wonder [<sub>CP</sub> whether Sue will present t<sub>i</sub> tomorrow]?
- (34) a. Mary asked [<sub>CP</sub> if John had left something on the table in the morning]  
b. Mary asked [<sub>CP</sub> if John had left what on the table in the morning]  
c.\*What<sub>i</sub> did Mary ask [<sub>CP</sub> if John had left t<sub>i</sub> on the table in the morning]?



→ A wh-island can be bigger than the smallest CP from which we are trying to extract:

- (35) a. You wonder [<sub>CP</sub> when Bill suggested [<sub>CP</sub> that John should visit his mother]]  
b. You wonder [<sub>CP</sub> when Bill suggested [<sub>CP</sub> that John should visit who]]  
c. \*Who<sub>i</sub> do you wonder [<sub>CP</sub> when Bill suggested [<sub>CP</sub> that John should visit t<sub>i</sub>]]?
- (36) a. You wonder [<sub>CP</sub> who believes [<sub>CP</sub> that aliens abducted Mary]]  
b. You wonder [<sub>CP</sub> who believes [<sub>CP</sub> that aliens abducted who]]  
c. \*Who<sub>i</sub> do you wonder [<sub>CP</sub> who believes [<sub>CP</sub> that aliens abducted t<sub>i</sub>]]?

→ The movement of wh-phrases out of a wh-island is blocked, so an adverbial that starts out in the lower clause inside the wh-island cannot raise to the matrix [Spec,CP]. As a result, sentences that have an adjunct wh-phrase in the matrix [Spec, CP] will be construed as if the wh-phrase started at some point outside the wh-island, not inside.

- (37) a. You wonder [<sub>CP</sub> who the aliens abducted why]  
b. \*Why<sub>i</sub> do you wonder [<sub>CP</sub> who the aliens abducted t<sub>i</sub>]?

- (38) a. You wonder [<sub>CP</sub> who the aliens abducted] t<sub>i</sub>  
b. Why<sub>i</sub> do you wonder [<sub>CP</sub> who the aliens abducted] t<sub>i</sub>?

# Sentential Subject Constraint I

Sentential Subject = a subject that is a clause.

## **The Sentential Subject Constraint:**

No element can move out of a CP that is in the subject position.

- (39) a. [<sub>CP</sub> that Bill threw your things out of the room] really annoyed you  
b. [<sub>CP</sub> that Bill threw what out of the room] really annoyed you  
c. \*What<sub>i</sub> did [<sub>CP</sub> that Bill threw t<sub>i</sub> out of the room] really annoy you?
- (40) a. [<sub>CP</sub> that most people didn't vote last year] was terrible  
b. [<sub>CP</sub> that most people didn't vote when] was terrible  
c. \*When<sub>i</sub> was [<sub>CP</sub> that most people didn't vote t<sub>i</sub>] terrible?

# The Adjunct Island Condition I

## **The Adjunct Island Condition:**

No element in a CP inside an adjunct may move out of this adjunct.

- (41) a. He went home [<sub>PP</sub> before [<sub>CP</sub> Mary finished the homework]]  
b. He went home [<sub>PP</sub> before [<sub>CP</sub> Mary finished what]]  
c. \*What<sub>i</sub> did he go home [<sub>PP</sub> before [<sub>CP</sub> Mary finished t<sub>i</sub>]]

## Complex NP Constraint (CNPC) I

### **Complex NP Constraint (CNPC):**

No element inside a CP dominated by a NP can be moved out of this NP

Complex NP = a DP that contains a CP.

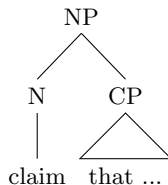
The CP could be either

- (i) complement of the noun or
- (ii) adjunct to the NP.

## Complex NP Constraint (CNPC) II

### Noun-Complement type CNPC violations:

*Nouns like claim, rumor, story, suggestion, etc. take CP complements*

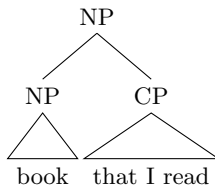


- (42) a. You heard [<sub>DP</sub> the [<sub>NP</sub> rumor [<sub>CP</sub> that Bill has broken the vase]]]  
b. You heard [<sub>DP</sub>the [<sub>NP</sub> rumor [<sub>CP</sub> that Bill has broken what]]]  
c. \*What<sub>i</sub> did you hear [<sub>DP</sub>the [<sub>NP</sub> rumor [<sub>CP</sub> that Bill has broken t<sub>i</sub>]]]?]
- (43) a. Bill is spreading [<sub>DP</sub>the [<sub>NP</sub> news [<sub>CP</sub> that Mary is going to buy a new car]]]  
b. Bill is spreading [<sub>DP</sub>the [<sub>NP</sub> news [<sub>CP</sub> that Mary is going to buy what]]]  
c. \*What<sub>i</sub> is Bill spreading [<sub>DP</sub>the [<sub>NP</sub> news [<sub>CP</sub> that Mary is going to buy t<sub>i</sub>]]]?]

## Complex NP Constraint (CNPC) III

Relative Clause type CNPC violations:

*The relative clause is an adjunct to the NP*



- (44) a. Sue watched [DP the [NP movie] [CP which Bill recommended]]  
b. Sue watched [DP the [NP movie] [CP which who recommended]]  
c. \*Who<sub>i</sub> did Sue watch [DP the [NP movie] [CP which t<sub>i</sub> recommended]]?

# The Subject Condition I

When it comes to extraction out of DPs we find an asymmetry between *objects* and *subjects*.

→ It is ok to extract a DP out of a DP object of a verb:

- (45) a. You saw [DP a picture of [DP some students]]  
b. You saw [DP a picture of [DP which students]]  
c. [DP Which students ]<sub>i</sub> did you see [DP a picture of t<sub>i</sub>]?

→ It is ungrammatical to extract a DP out of DP that is the subject of a verb:

- (46) a. [DP a picture of [DP some students]] appeared in the newspapers  
b. [DP a picture of [DP which students]] appeared in the newspapers  
c.\*[DP Which students ]<sub>i</sub> did [DP a picture of t<sub>i</sub> ] appear in the newspapers?

## The Subject Condition:

A DP cannot be extracted from a DP subject of a clause.



# The Left Branch Constraint I

## The Left Branch Constraint:

The DP subject of a larger DP cannot be extracted out of this larger DP

- (47) a. You are eating [DP [DP John ]<sub>s</sub> cake ]  
b. You are eating [DP [DP who ] se cake]  
c. \*Whose<sub>i</sub> are you eating [DP t<sub>i</sub> cake]? / \*Who<sub>i</sub> are you eating [DP t<sub>i</sub>'s cake]?

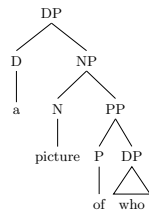
In this cases, in order to circumvent the effects of The Left Branch Constraint, we can pied-pipe the entire DP:

- (48) a. You are eating [DP [DP who ] se cake]  
b. Whose cake<sub>i</sub> are you eating t<sub>i</sub>?

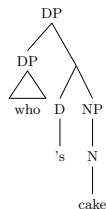
## The Left Branch Constraint II

Nota Bene The difference between (45) and (46) on the one hand and (47) on the other is that:

→ In both (45) and (46) the extracted DP was itself (part of) a complement of a noun. We saw that extraction works if the entire DP *a picture of some students* is complement of a verb. It does not if it is the external argument (subject).



→ In (47) the DP we are trying to extract is in a specifier position instead. It is a subject.



## Coordinate Structure Constraint:

No conjunct or element contained within a conjunct of a coordination can be moved out of this coordination.

→ This constraint bans the movement of either conjunct:

- (49) a. You ate [<sub>DP</sub> [<sub>DP</sub> some chicken] and [<sub>DP</sub> rice]]  
b. You ate [<sub>DP</sub> [<sub>DP</sub> what] and [<sub>DP</sub> rice]]  
c. \*What<sub>i</sub> did you eat [<sub>DP</sub> t<sub>i</sub> and [<sub>DP</sub> rice]]?
- (50) a. You ate [<sub>DP</sub> [<sub>DP</sub> some chicken] and [<sub>DP</sub> rice]]  
b. You ate [<sub>DP</sub> [<sub>DP</sub> some chicken] and [<sub>DP</sub> what]]  
c. \*What<sub>i</sub> did you eat [<sub>DP</sub> [<sub>DP</sub> some chicken] and t<sub>i</sub> ]?

→ It also bans the movement of some wh-phrase from inside one of the conjuncts:

- (51) a. You [VP [VP ate some pie] and [VP drank some coffee]]  
b. You [VP [VP ate what] and [VP drank some coffee]]  
c. \*What<sub>i</sub> did you [VP [VP eat t<sub>i</sub>] and [VP drank some coffee]]?
- (52) a. You [VP [VP ate some pie] and [VP drank some coffee]]  
b. You [VP [VP ate some pie] and [VP drank what]]  
c. \*What<sub>i</sub> did you [VP [VP eat some pie] and [VP drank t<sub>i</sub>]]?

- (53) a. Bill thinks that  $[_{TP} [_{TP}$  Tom gathered the data] and  $[_{TP}$  you wrote the paper]]  
b. Bill thinks that  $[_{TP} [_{TP}$  Tom gathered what] and  $[_{TP}$  you wrote the paper]]  
c. \*What<sub>i</sub> does Bill think that  $[_{TP} [_{TP}$  Tom gathered  $t_i$ ] and  $[_{TP}$  you wrote the paper]]?
- (54) a. Bill thinks that  $[_{TP} [_{TP}$  Tom gathered the data] and  $[_{TP}$  you wrote the paper]]  
b. Bill thinks that  $[_{TP} [_{TP}$  Tom gathered the data] and  $[_{TP}$  you wrote what]]  
c. \*What<sub>i</sub> does Bill think that  $[_{TP} [_{TP}$  Tom gathered the data] and  $[_{TP}$  you wrote  $t_i$ ]]?

→ There is a systematic class of exceptions to the CSC. An element can be moved out of one of the conjuncts if a “parallel” element is also moved from the others. This is called Across-the-Board extraction or **ATB**.

- (55) a. Bill thinks that Tom wrote the paper and you criticized it  
b. Bill thinks [<sub>CP</sub> that [<sub>TP</sub> Tom wrote the paper] and [<sub>TP</sub> you criticized it]]  
c. Bill thinks [<sub>CP</sub> that [<sub>TP</sub> Tom wrote what] and [<sub>TP</sub> you criticized what]]  
d. What<sub>i</sub> does Bill think [<sub>CP</sub> that [<sub>TP</sub> Tom wrote t<sub>i</sub>] and [<sub>TP</sub> you criticized t<sub>i</sub>]]?