L6: Syntax III - Dependencies

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Outline

Local dependencies: NPs

From verbal arguments to NPs

Previously, . . .

- verbs are predicate relations that take various arguments of entities or events;
- they restrict their arguments by a thematic role: Agent, Experiencer, Goal, Source, Location, Theme.

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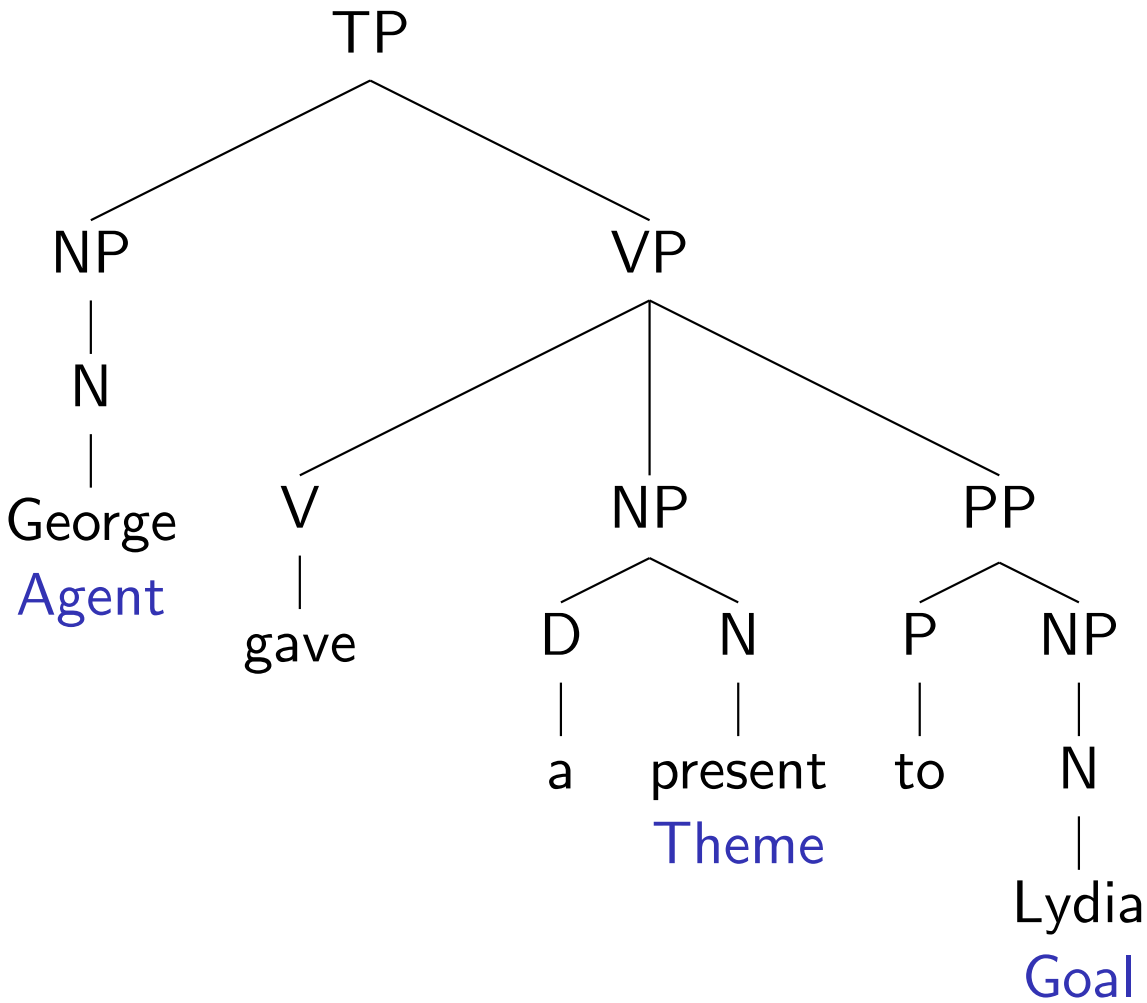
- Structural relations
- Morphological marking (case)

Identifying NPs: structural relations



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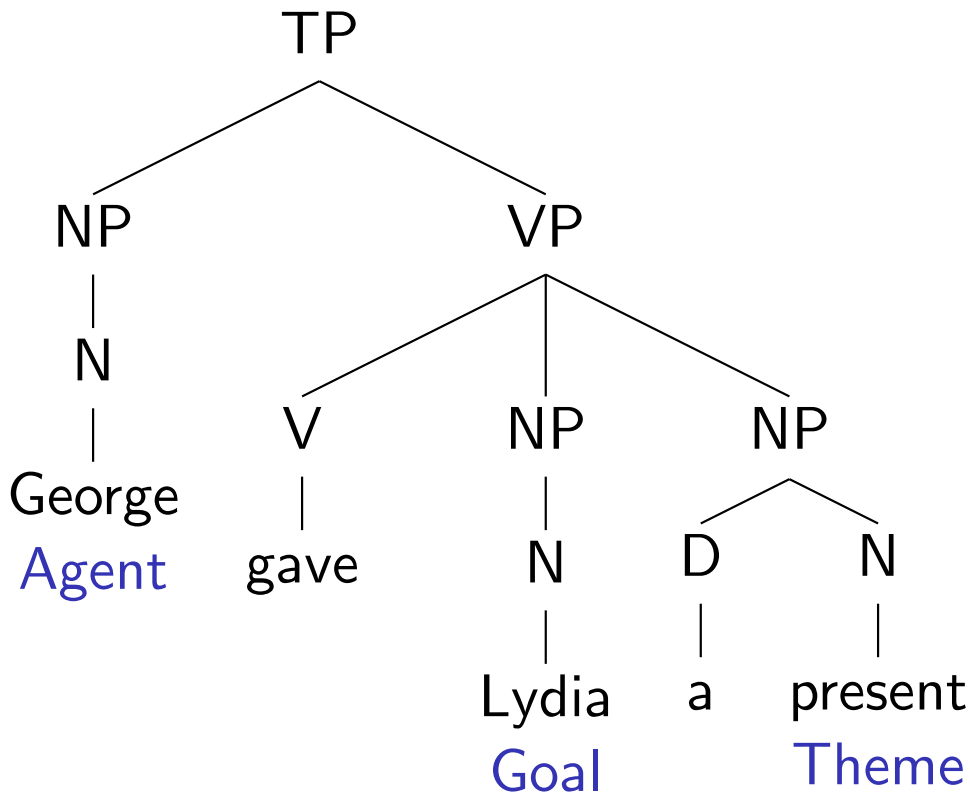

Identifying NPs: structural relations

- The number of slots that an NP can occupy is limited
- They are structurally defined
- The slots are said to define grammatical relations of an NP: subject, direct and indirect object, infinitival complement, sentential complement,...

Identifying NPs: morphological marking with Case

Subject-object case marking in English

(1) a. She saw him.

b. He saw her.

c. It broke it.

Identifying NPs: morphological marking with Case

Japanese (Carnie, 2007), p.296: Subject: -ga, Direct object: -o, Indirect-object|Adjuncts: -ni

(2) a.

Asako-ga ronbun-o kai-ta.
Asako-subj article-d-obj wrote-past
"Asako wrote the article."

b.

Etsuko-ga heya-ni haittee-kita.
Etsuko-subj room-i-obj in-came.
"Etsuko came into the room."

Identifying NPs: complex case systems (Finish)

Case	Example	English equivalent
nominatiivi	talo	house
genetiivi	talon	of (a) house
essiivi	talona	as a house
partitiivi	taloa	house (as an object)
translatiivi	taloksi	to a house
inessiivi	talossa	in (a) house
elatiivi	talosta	from (a) house
illatiivi	taloon	into (a) house
adessiivi	talolla	at (a) house
ablatiivi	talolta	from (a) house
allatiivi	talolle	to (a) house
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Also includes other semantic properties. Examples from here.

Representing Case in FSs

Case as a head feature on nouns

- N[head=[agr=[num=sg,pers=3,case=acc,gen=fem]]] → her
- N[head=[agr=[num=sg,pers=3,case=nom,gen=masc]]] → he

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From arguments of lexical predicates to structural positions

- V[head=[agr=[num=sg,pers=3]],subcat=[obj,subj]] → saw

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From arguments of lexical predicates to structural positions

- V[head=[agr=[num=sg,pers=3]],subcat=[obj,subj]] → saw
- VP[head=A,subcat=Rest] → V[head=A,subcat=[obj|Rest]] NP[head=[agr=[case=acc]]]

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From arguments of lexical predicates to structural positions

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- VP[head=A,subcat=Rest] → V[head=A,subcat=[obj|Rest]] NP[head=[agr=[case=acc]]]
- TP[subcat=[]] → NP[head=[agr=[num=N,pers=P,case=nom]]] VP[head=[agr=[num=N,pers=P,subcat=[Last]]]]

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- `N[head=[agr=[num=sg,pers=3,case=acc,gen=fem]]]`
  `-> 'her'`
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- `V[head=[agr=[num=sg,pers=3]],subcat=trans] -> 'saw'`
- `VP[head=A] ->`
  `V[head=A,subcat=trans] NP[head=[agr=[case=acc]]]`

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- `NP[head=A] -> N[head=A]`
- `V[head=[agr=[num=sg,pers=3]],subcat=trans] -> 'saw'`
- `VP[head=A] ->`
  `V[head=A,subcat=trans] NP[head=[agr=[case=acc]]]`
- `TP -> NP[head=[agr=[num=?num,pers=?pers,`
  `case=nom]]] VP[head=[agr=[num=?num,pers=?pers]]]`

Alternations of argument structure: Passive

A mismatch between thematic structure and structural relations:

(3) a. George kissed Lydia. (Active)

b. Lydia was kissed by George. (Passive)

c. Lydia was kissed.

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Changes the argument structure of the verb.

- kiss: ⟨Agent, Theme⟩
- kissed: ⟨Theme⟩

The Theme argument is realised as a subject!

Un-accusatives: inherently passive verbs

Not all intransitive verbs are the same.

(4) a. George danced at the barn.

b. George arrived at the barn.

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We cannot "force" arrive to take another Theme argument.

(6) a. George danced a jig.

b. *George arrived a barn.

Un-accusatives: inherently passive verbs

Have/Be auxiliary alternation in German, Italian. . .

(7) a. Georg hat getanzt.
George has danced

b. Georg ist angekommen.
George is arrived

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An alternating example:

(8) a. George sank the boat.

b. The boat sank.

c. The boat was sunk by George.

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Arguments in non-finite clauses: Raising

Arguments are realised locally to the predicate that assigns it.

(9) a. *[$_{TP}$I want George [$_{CP}$ that ___ danced]].

b. *[$_{TP}$Lydia thinks [$_{CP}$ that ___ danced]].

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However, with some non-finite complements...

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b. [$_{TP}$It is likely [$_{CP}$ that George will dance]].

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(11) a. is-likely: ⟨Event⟩

b. dance: ⟨Agent⟩

Observations about raising

- If the embedded verb is not tensed:
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- If the embedded verb is not tensed:
  - its argument (Agent) becomes the subject of the main verb.
- If the embedded verb is tensed:
  - The subject must be filled with a non-thematic “it”
  - The subject must be filled with the Event argument.

Conclusions on raising

All NP arguments must be licensed as grammatical relations.

(12) *It was kissed Lydia.

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Finite clauses must license subjects.

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c. George wants Lydia [$_{TP}$ ___ to dance].
want: ⟨Agent, Event⟩ | ⟨Agent, Theme⟩

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c. George wants Lydia [$_{TP}$ ___ to dance].
want: ⟨Agent, Event⟩ | ⟨Agent, Theme⟩

d. George persuaded Lydia [$_{TP}$ PRO to dance].
persuade: ⟨Agent, Theme, Event⟩

There are really ARE two subjects

The subject of the main verb cannot be replaced by “it” or a “that” clause if “George” gets licensed in the complement clause.

(14) a. *[$_{TP}$It is reluctant [$_{CP}$that George will dance].

b. *[$_{TP}$[$_{CP}$ That George will dance] is reluctant].

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c. George knows that it is essential PRO to be well behaved.
PRO = { George, ? }

How is PRO's reference assigned?

A property of lexical entries?

(16) a. Lydia$_i$ instructed George$_j$ PRO$_{*i/j}$ to behave.

b. George$_j$ promised Lydia$_i$ PRO$_{*i/j}$ to behave.

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b. George$_j$ promised Lydia$_i$ PRO$_{*i/j}$ to behave.

But...

(17) a. George$_j$ begged Lydia$_i$ PRO$_{i/*j}$ to buy an iPad.

b. George$_j$ begged Lydia$_i$ PRO$_{i*/j}$ to be allowed to use it.

Further reading

Advanced: presupposes familiarity with a particular syntactic theory

(Carnie, 2007) Chapters 10 (DP movement) and 13 (Raising, Control and Empty Categories).

(Dalrymple, 2001) Chapters 8 (Argument structure and mapping theory) and 12 (Functional and anaphoric control).

Practical implementation:

(Bird, Klein, and Loper, 2009): Chapter 9 Building Feature Based Grammars.

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- Lexical dependencies are represented in syntax: syntactic dependencies or GRs.
- A certain θ-role is not always represented as the same GR.
- The dependencies must be local to the verb - within a TP.

But there are some dependencies that are non-local.

Long distance dependencies

Topicalisation in English

Certain constituents can be fronted or extracted.

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Fronted constituents are already marked for GRs:
Object (18a), Indirect Object (18c).

Syntax of topicalised phrases

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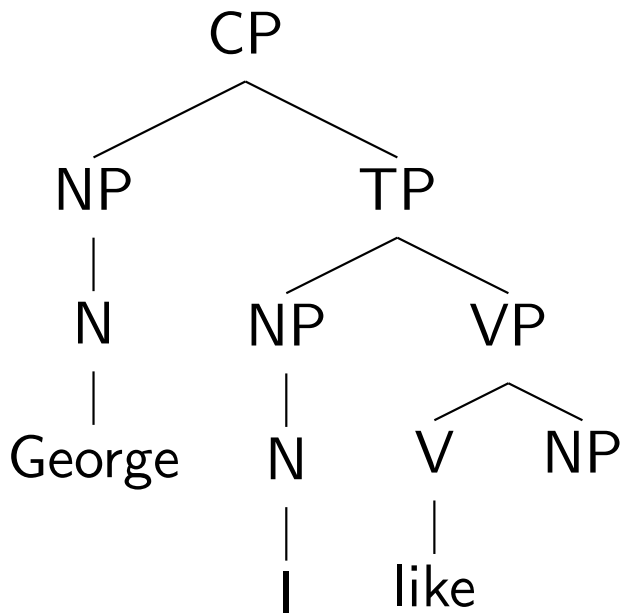

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e. ?$[_{CP}[_{VP}$To catch a mouse$]$, $[_{TP}$I think $[_{CP}$ that $[_{TP}$ we convinced George ___$]]]]$.

Some restrictions

Not possible with every matrix verb

(21) a. [$_{CP}$[$_{NP}$George], [$_{TP}$ I think [$_{CP}$ that [$_{TP}$ Lydia saw]]]].

b. *[$_{CP}$[$_{NP}$George], [$_{TP}$ I whispered [$_{CP}$ that [$_{TP}$ Lydia saw]]]].

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b. *[$_{CP}$[$_{NP}$George], [$_{TP}$ I whispered [$_{CP}$ that [$_{TP}$ Lydia saw]]]].

Not possible to extract from CPs that are subjects

(22) *[$_{CP}$ [$_{NP}$ George], [$_{TP}$[$_{CP}$ that Lydia saw ___] surprised me]].

Some restrictions

Extracting from adjuncts only possible if they are not tensed

(23) a. [$_{CP}$[$_{NP}$This garden], [$_{TP}$ George enjoys sleeping [$_{PP}$in ___]]].

b. *[$_{CP}$[$_{NP}$Lydia] Simon thinks [$_{CP}$ that George slept [$_{CP}$when he called ___]]].

Relative clauses

An XP modified by a tensed adjunct CP.

The wh-constituent (the relative pronoun) is fronted within the adjunct.

(24) a. NP: a person who(m) I saw ___a person whose picture George found ___

b. PP: a person to whom George gave a present ___

c. AP: a person envious of whom I get easily ___

d. AdvP: the place where we met ___the hour when we argued ___

Pied piping

If a relative pronoun appears in a constituent, the entire constituent is fronted.

(25) a. the person whose garden George visited ___.
*the person whose George visited garden ___.

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If a relative pronoun appears in a constituent, the entire constituent is fronted.

(25) a. the person whose garden George visited ___.
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b. the person the cat of whom I saw ___in the garden.
*the person of whom I saw the cat ___in the garden.

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*the person of whom I saw the cat ___in the garden.

c. the cat the colour of the fur of which Lydia likes ___.
*the cat of which Lydia likes the colour of the fur ___.

Pied Piper of Hamelin

From Wikipedia, also article

Relative clauses without a relative pronoun

(26) a. I have seen the spacecraft which George owns.

b. I have seen the spacecraft that George owns.

c. I have seen the spacecraft George owns.

Relative clauses without a relative pronoun

(26) a. I have seen the spacecraft which George owns.

b. I have seen the spacecraft that George owns.

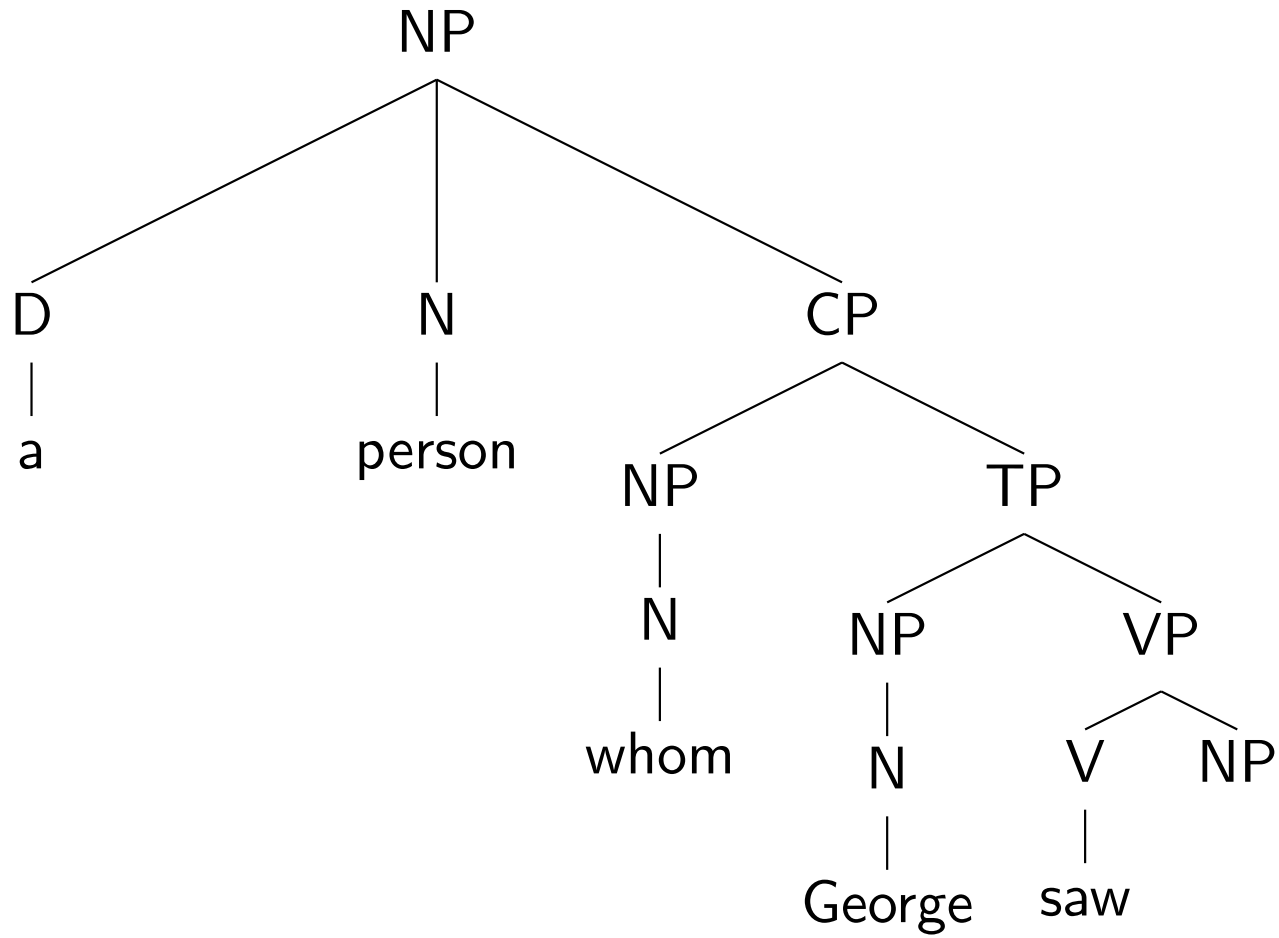
c. I have seen the spacecraft George owns.

d. *I have seen the spacecraft which that George owns.

(26d): Doubly Filled Comp Filter
*[$_{CP}$ wh-XP that]

Syntax of relative clauses

(27)



Same extraction constraints as topicalisation

(28) a. George, I think that Lydia saw ___.
a person who you think that Lydia saw ___

b. *George, I whispered that Lydia saw ___.
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d. This garden, George enjoys sleeping [$_{PP}$in ___].
this garden which George enjoys sleeping [$_{PP}$in ___]

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d. This garden, George enjoys sleeping [$_{PP}$in ___].
this garden which George enjoys sleeping [$_{PP}$in ___]

e. *Lydia Simon thinks that George slept [$_{CP}$ when he called ___].
*a person who Simon thinks that George slept [$_{CP}$ when he called ___]

Wh-questions

A constituent containing a wh-pronoun is fronted.

The auxiliary precedes the subject as with (yes/no) questions.

(29) a. NP: Who does George like ___?

b. PP: To whom did George give a present ___?

c. AdvP: When did George leave the stage ___?
Where did George go ___?

d. AP: How lazy is George?

Pied piping

Embedded wh-pronouns front the entire phrase:

(30) a. Whose garden did you visit ___?
*Whose did you visit ___garden?

Pied piping

Embedded wh-pronouns front the entire phrase:

(30) a. Whose garden did you visit ___?
*Whose did you visit ___garden?

b. Whose brother's garden did you visit ___?
*Whose did you visit ___brother's garden?

Pied piping

Embedded wh-pronouns front the entire phrase:

(30) a. Whose garden did you visit ___?
*Whose did you visit ___garden?

b. Whose brother's garden did you visit ___?
*Whose did you visit ___brother's garden?

c. In which garden did George sleep ___?
*In which did George sleep ___garden?

Pied piping

Embedded wh-pronouns front the entire phrase:

(30) a. Whose garden did you visit ___?
*Whose did you visit ___garden?

b. Whose brother's garden did you visit ___?
*Whose did you visit ___brother's garden?

c. In which garden did George sleep ___?
*In which did George sleep ___garden?

d. *The colour of the fur of which cat does Lydia like ___?
*Of which cat does Lydia like the colour of the fur ___?
Which cat does Lydia like the colour of ___?

How many wh-phrases can be fronted?

(31) a. English:

*Who what ___said ___?

b. French:

*Qui quoi ___ fait ___? - who what does

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(31) a. English:
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b. French:
*Qui quoi ___ fait ___? - who what does

c. Polish:
Kto co ___ robi ___? - who what does

d. Hungarian:
Ki mìt ___ latott ___? - who what saw

From (Haegeman, 1994), p.504.

Is wh-fronting required?

(32) a. *George saw what?

b. George so WHAT?

Is wh-fronting required?

(32) a. *George saw what?

b. George so WHAT?

(33) a.

John-ga dare-o butta ka siranai.
John who hit Q know not
'I don't know who John hit.' (Japanese)

b.

Wo xiang-zhidao Lisi mai-le sheme
I wonder Lisi bought-aspect what
'I wonder what Lisi bought.' (Chinese)

From (Haegeman, 1994), p.497–498.

The auxiliary in wh-questions

The auxiliary appears in T.

(34) [$_{TP}$[$_{NP}$George] [$_{T}$does] [$_{VP}$like playing in the garden]].

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(34) [$_{TP}$[$_{NP}$George] [$_{T}$does] [$_{VP}$like playing in the garden]].

In questions the auxiliary precedes the subject 'George'.

(35) a. Does [$_{TP}$[$_{NP}$George] [$_{VP}$ like playing in the garden]]?

b. What does [$_{TP}$[$_{NP}$George] [$_{VP}$enjoy doing]]?

The auxiliary in wh-questions

The auxiliary appears in T.

(34) [$_{TP}$[$_{NP}$George] [$_{T}$does] [$_{VP}$like playing in the garden]].

In questions the auxiliary precedes the subject 'George'.

(35) a. Does [$_{TP}$[$_{NP}$George] [$_{VP}$ like playing in the garden]]?

b. What does [$_{TP}$[$_{NP}$George] [$_{VP}$enjoy doing]]?

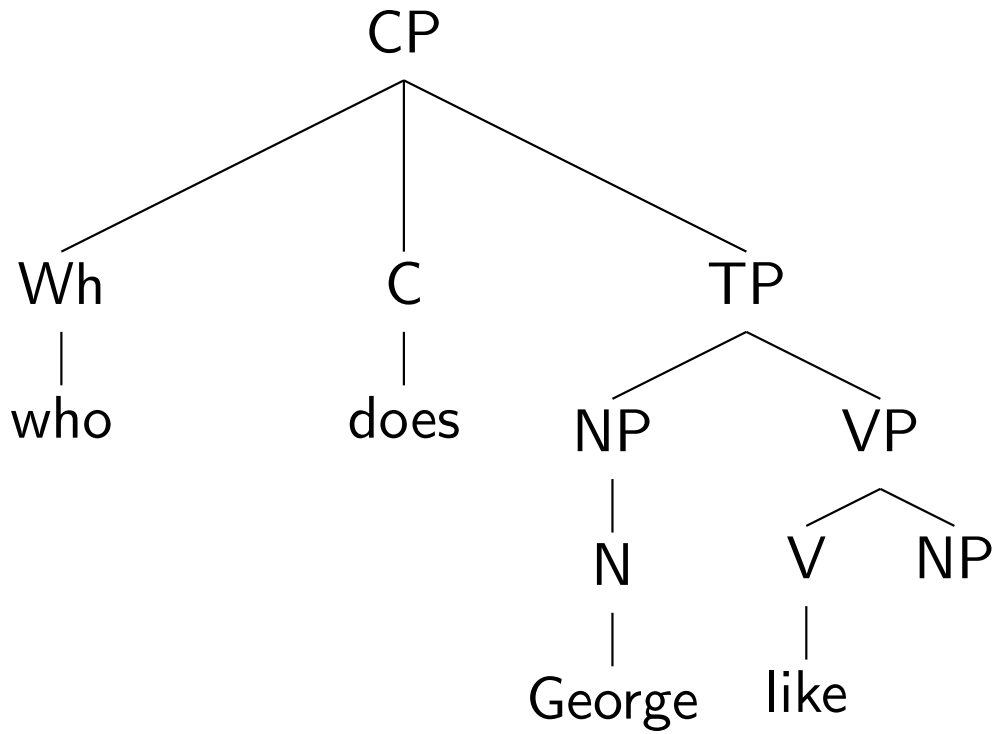
But not in the embedded questions.

(36) a. I wonder what George has done now.

b. *I wonder what has George done now.

Syntax of wh-questions

(37)



Wh-pronouns can be extracted from embedded clauses

(38) a. [$_{CP}$Who(m) did you think [$_{CP}$that Lydia kissed ___]]?

b. [$_{CP}$Who(m) did you think [$_{CP}$ Lydia kissed ___]]?

Constraints on wh-extraction

1. Extraction is not possible when the wh-pronoun is a subject preceded by a complementiser 'that' (that-trace effect):

(39) a. *[$_{CP}$Who do you think [$_{CP}$that ___kissed Lydia]]?

b. [$_{CP}$Who do you think [$_{CP}$ ___kissed Lydia]]?

Constraints on wh-extraction

1. Extraction is not possible when the wh-pronoun is a subject preceded by a complementiser 'that' (that-trace effect):

(39) a. *[$_{CP}$Who do you think [$_{CP}$that ___kissed Lydia]]?

b. [$_{CP}$Who do you think [$_{CP}$ ___kissed Lydia]]?

But in Italian it is okay.

(40)

Chi credi che ___ venga?
who think-you that comes
"Who do you think is coming?"

Constraints on wh-extraction

2. Extraction from complement CPs is okay, but not if the CP is within an NP.

(41) a. What did George claim [$_{CP}$ that he caught ___ in the garden]?

b. *What did George make [$_{NP}$ the claim [$_{CP}$ that he caught ___ in the garden]?

Constraints on wh-extraction

3. Extracting from subject CPs is not possible (as seen earlier).

(42) *<u>Who</u> did [$_{CP}$ that Lydia saw ___] surprised George?

More constraints on wh-extraction

4. Extracting multiple wh-constituents is not possible.

(43) a. *Who did you think [$_{CP}$ what ___ saw ___]?

b. Who did you think [$_{CP}$ ___ saw what]?

More constraints on wh-extraction

4. Extracting multiple wh-constituents is not possible.

(43) a. *Who did you think [$_{CP}$ what ___ saw ___]?

b. Who did you think [$_{CP}$ ___ saw what]?

This explains the difference between non-tensed and tensed adjuncts noted before.

(44) a. Where does George enjoy sleeping [$_{PP}$in ___]?

b. *Who does Simon think that George slept [$_{CP}$ when he called ___]?

More constraints on wh-extraction

5. Lexical constraints of verbs (as seen earlier)

(45)

*Who did you whisper that Lydia saw ___?

A brief explanation of this data

- Structural relations between the extracted element and the site of extraction matter. (e.g. subject CPs).

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  [$_{CP}$<u>Who</u> do you think [$_{CP}$ ___ that George claimed [$_{CP}$ ___ that Lydia saw ___]]]?

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- Structural relations between the extracted element and the site of extraction matter. (e.g. subject CPs).
- The extracted element and the site of extraction are linked.
- In long distance dependencies, the extraction may cross a CP, but only one:
  [$_{CP}$Who do you think [$_{CP}$ ___ that George claimed [$_{CP}$ ___ that Lydia saw ___]]]?
- NPs do not allow such paths (no extraction from [$_{NP}$[$_{CP}$here]].

Gap threading with FS

- V[head=[agr=[num=inf,pers=inf],subcat=[obj,subj]] → like

Gap threading with FS

- V[head=[agr=[num=inf,pers=inf],subcat=[obj,subj]] → like
- VP[head=[agr=[num=inf,pers=inf],subcat=Rest,gap=G] → V[[head=[agr=[num=inf,pers=inf],subcat=[G|Rest]]

Gap threading with FS

- V[head=[agr=[num=inf,pers=inf],subcat=[obj,subj]] → like
- VP[head=[agr=[num=inf,pers=inf],subcat=Rest,gap=G] → V[[head=[agr=[num=inf,pers=inf],subcat=[G|Rest]]
- TP[head=[agr=[num=N,pers=P]],subcat=[],gap=G] → NP[head=[agr=[num=N,pers=P,case=nom]]] VP[head=[agr=[num=inf,pers=inf],subcat=[Last]],gap=G]
- NP[head=A] → N[head=A]

Gap threading with FS

- V[head=[agr=[num=inf,pers=inf],subcat=[obj,subj]] → like
- VP[head=[agr=[num=inf,pers=inf],subcat=Rest,gap=G] → V[[head=[agr=[num=inf,pers=inf],subcat=[G|Rest]]
- TP[head=[agr=[num=N,pers=P]],subcat=[],gap=G] → NP[head=[agr=[num=N,pers=P,case=nom]]] VP[head=[agr=[num=inf,pers=inf],subcat=[Last]],gap=G]
- NP[head=A] → N[head=A]
- CP[focus=G] → Wh[gr=G,member(G,[subj,obj,indo,adj])] C[head=A] TP[head=A,gap=G]
- Wh[gr=obj] → who | whom
- C[head=[agr=[num=3,pers=sg] → does

Gap threading with FS

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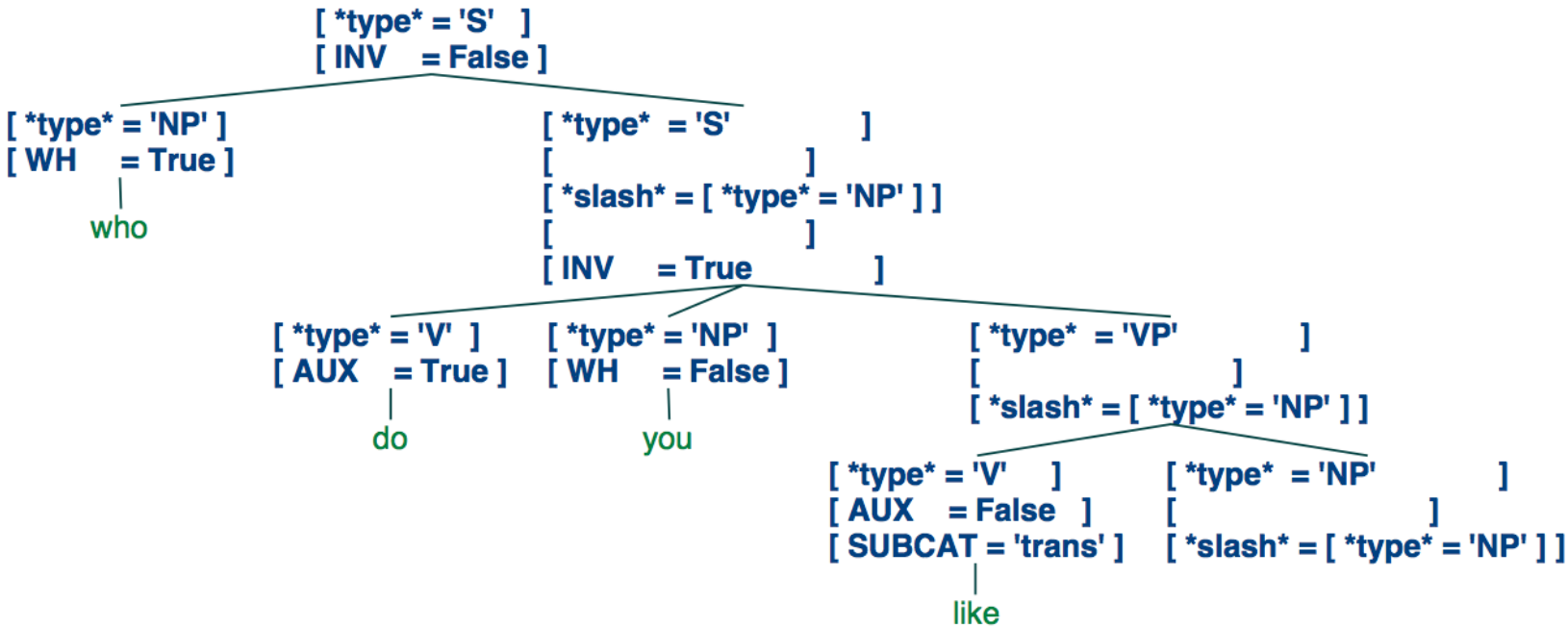
Syntax of wh-questions



Further reading

Advanced: presupposes familiarity with a particular syntactic theory

(Dalrymple, 2001): Chapter 14 (Long-distance dependencies).

(Carnie, 2007): Chapter 10 (*Wh*-movement).

Practical implementation:

(Bird, Klein, and Loper, 2009): Chapter 9 Building Feature Based Grammars.

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