6
Extending X'-theory

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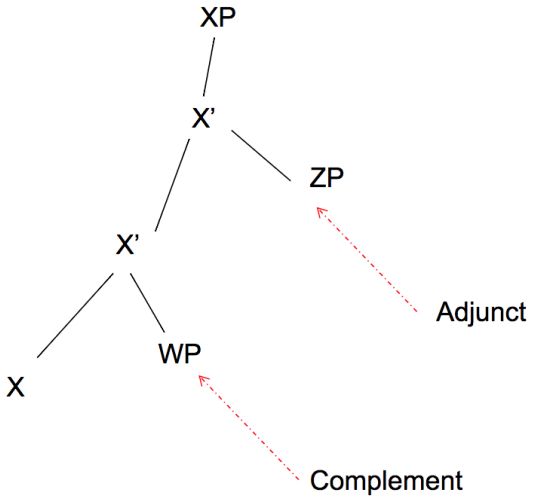
Pop Quiz II

1. What are the goals of syntax?
2. Is syntax a science? How so?
3. What is Prescriptive/Descriptive syntax?
4. What is innateness? Recursion?
5. What is the difference between Linear & hierarchical structure?

Introduction

- Two types of Categories:
  - We looked at: Phrasal categories: NP, VP, PP, AdjP, AdvP.
  - Functional Categories C T Q D
    - Specifier XP (YP) X'
    - Adjunct X' X' (ZP) or Vice versa
    - Complement X' X (WP)or Vice versa



Introduction

- Challenge:
  - According to specifier rule, it requires it to be a phrase XP level, however, specifiers we have are only determiners and not phrases
    - *The they are good.
    - *A an apple is good

Remember the rule:

All non-head materials must be phrasal.

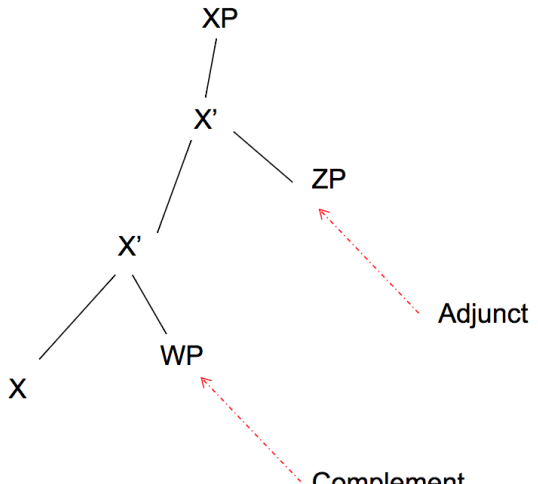
Introduction

- We are going to add three points:
  - CP, TP, DP
    - We want the tree to capture other properties of hierarchical structure found in the constituents.
    - We want to propose a determiner phrase (DP)
      - Determiners (the,a) are not specifiers, or phrasal.
      - Specifier is subject place holder

DP

- Determiners:
  - The, a, that, this, those, these occupies the specifier of NP
    - I want to show you that the apostrophe ‘s is also Det.
  - Determiners are heads, and cant be phrasal: only one is allowed in an NP
    - *The that is a dog

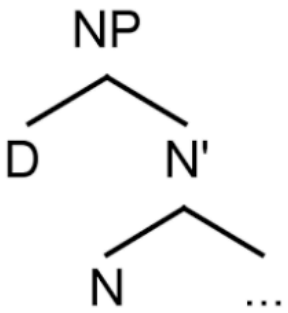
- Suggested solution:
- Det are not part of the NP but NP is the complement to the determiner head.



DP

- Challenge II:
  - IN CP an TP rules, the only required element is the head. At the same time, this head is optional
    - CP -> (C) TP
    - TP -> NP (T) VP
      - This calls for an evidence

Old



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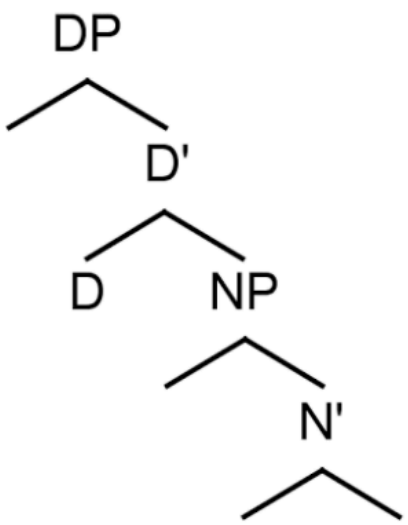
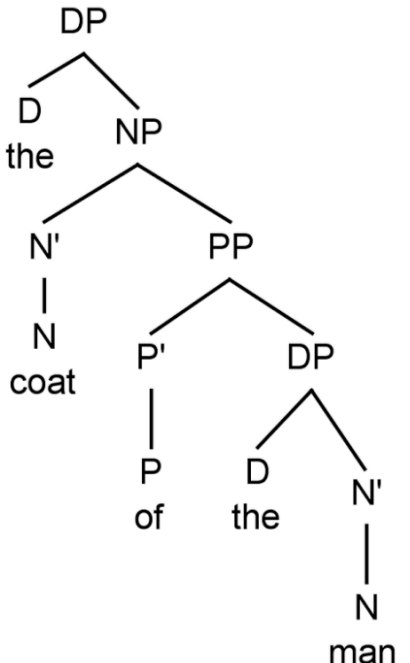


DP: free generative and construct

- There are two types of genitives or possessive NP in English:
  - Construct and Free genitive
    - Free genitive *(of-)* uses the preposition *of* to mark the possessive relation between two NPs
    - ‘s The appears after the whole possessor NP [the man]



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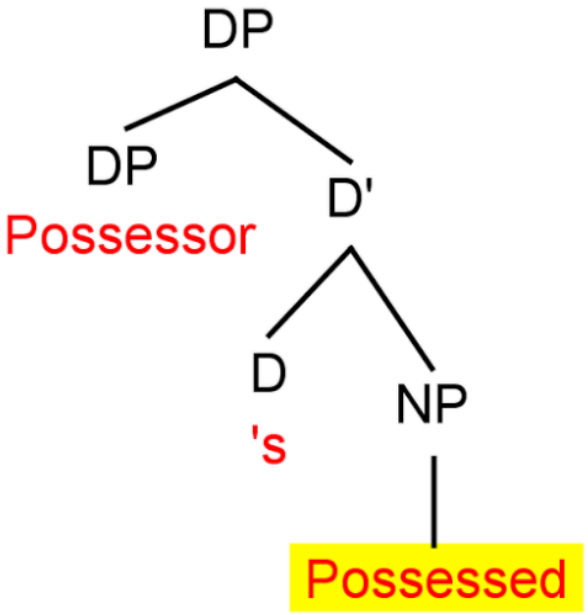
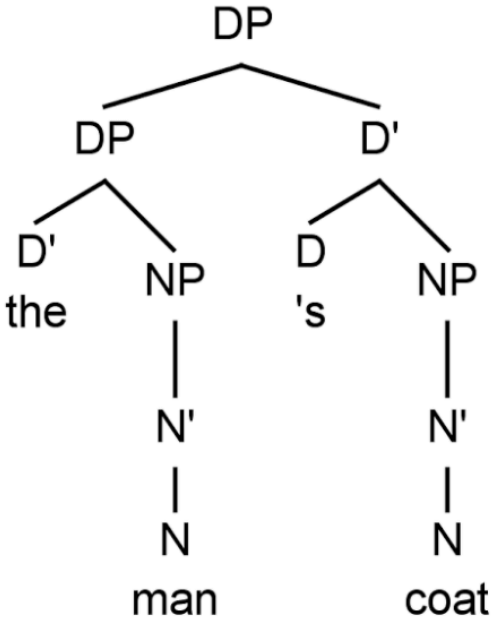
        - *The man's the coat





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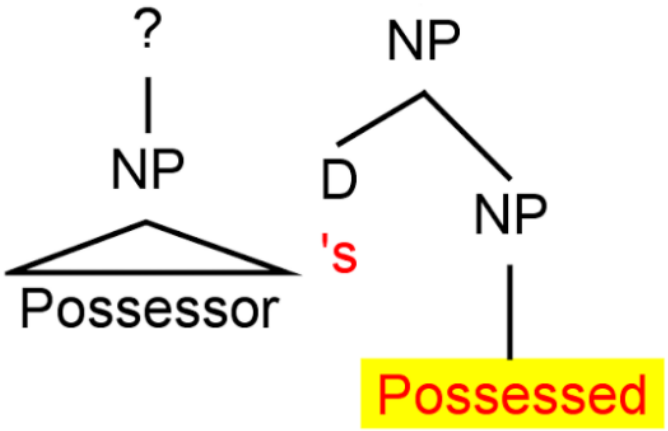
    - *The man's the coat
    - complementary distribution (same entities)
    - 's occupies the head D position and

    the possessor (the man) is its specifier.

    So, Det precedes its possessor unlike

    NP [D, N]



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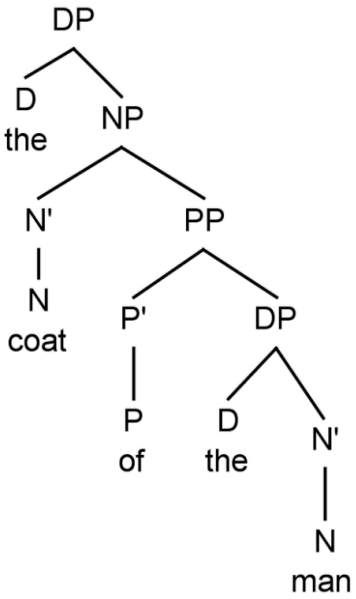
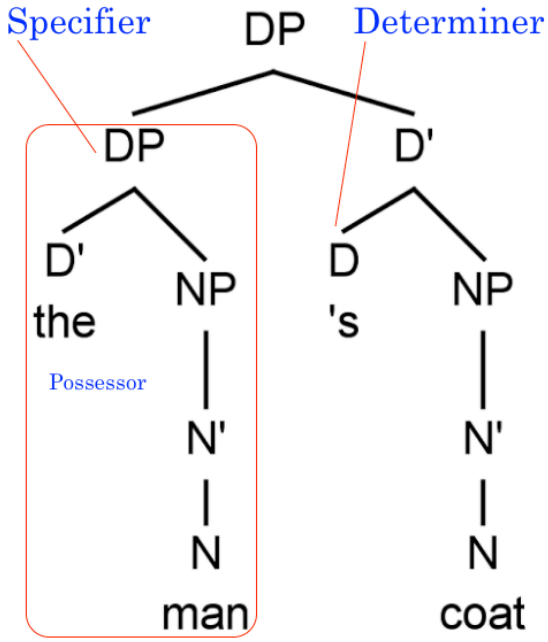
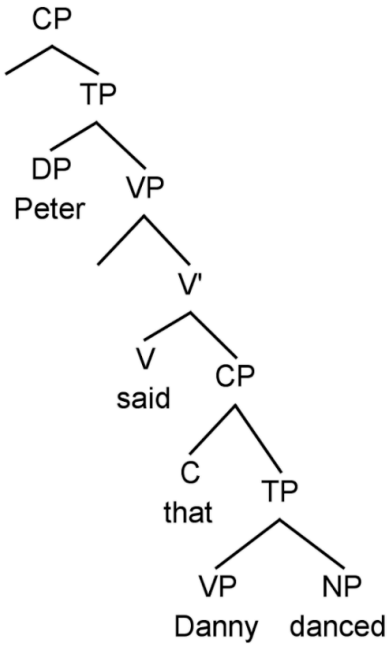




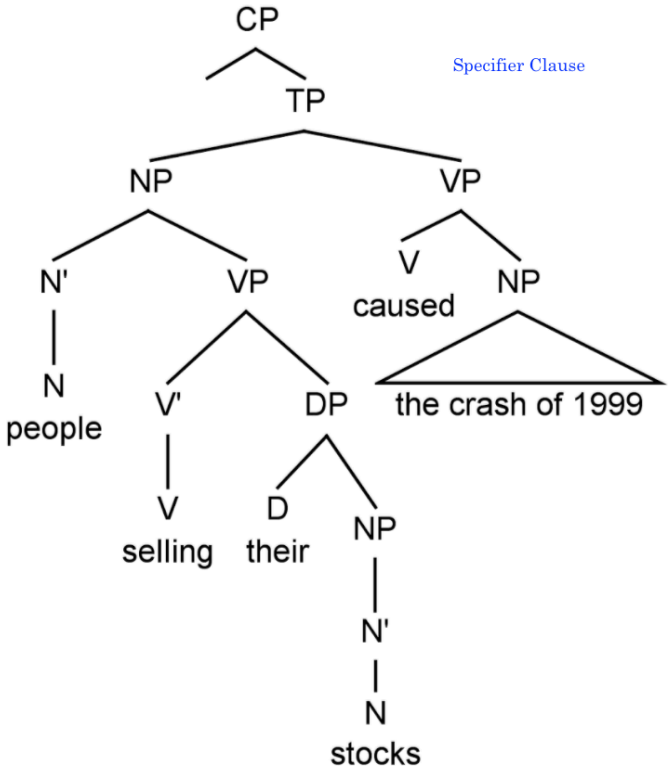
TP & CP

- Clause:
  - Clause is any Subject and predicate that can stand by itself as:
    - The student *loves his grandfather Mohammad*
    - Salih *shines*
  - Root Clause [Peter said [that [Danny danced]]]
  - Main Clause [Peter wants [Danny to danced]]
    - Matrix Clause (TP1)
    - Embedded clause (TP2)
    - Predicate Phrase (VP1)
    - Predicate phrase (VP2)
    - Agent (NP1)
    - Agent (NP2)

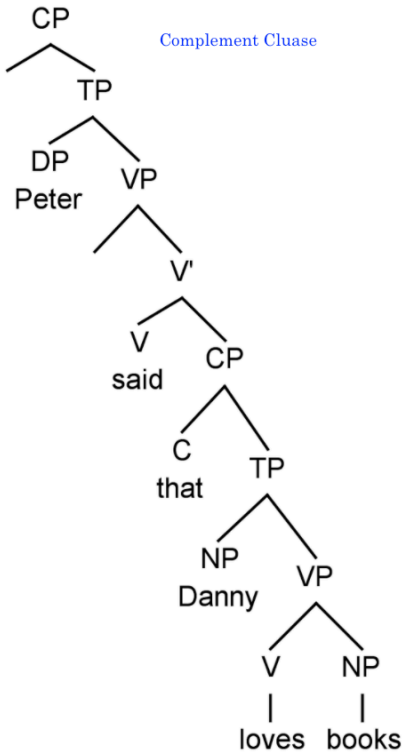


TP & CP

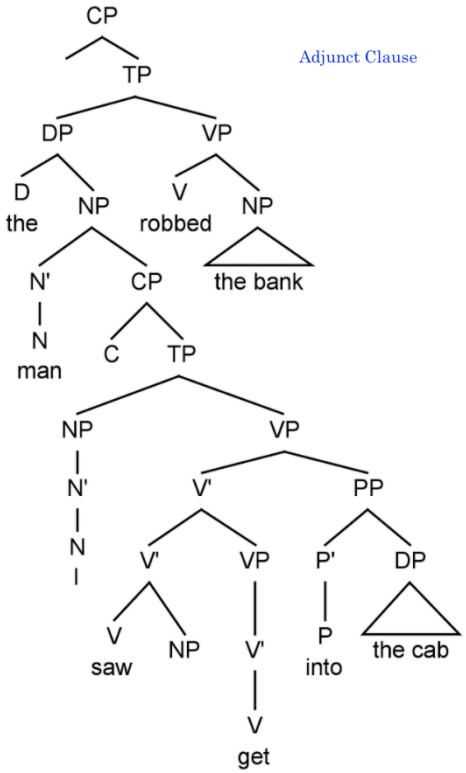
- In addition to *Specifier, head, complement and adjunct*, embedded clauses can be:
  - Specifier Clause — people selling their stocks caused X
  - Complement Clause — Peter said that X loves Y
  - Adjunct Clause — The man I saw get into the X robbed Y



Specifier Clause



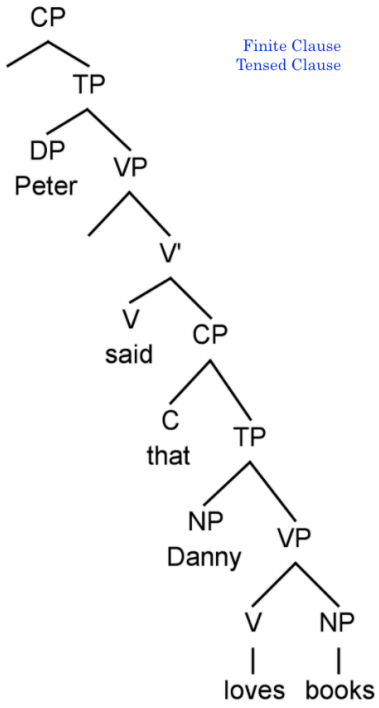
Complement Cluase



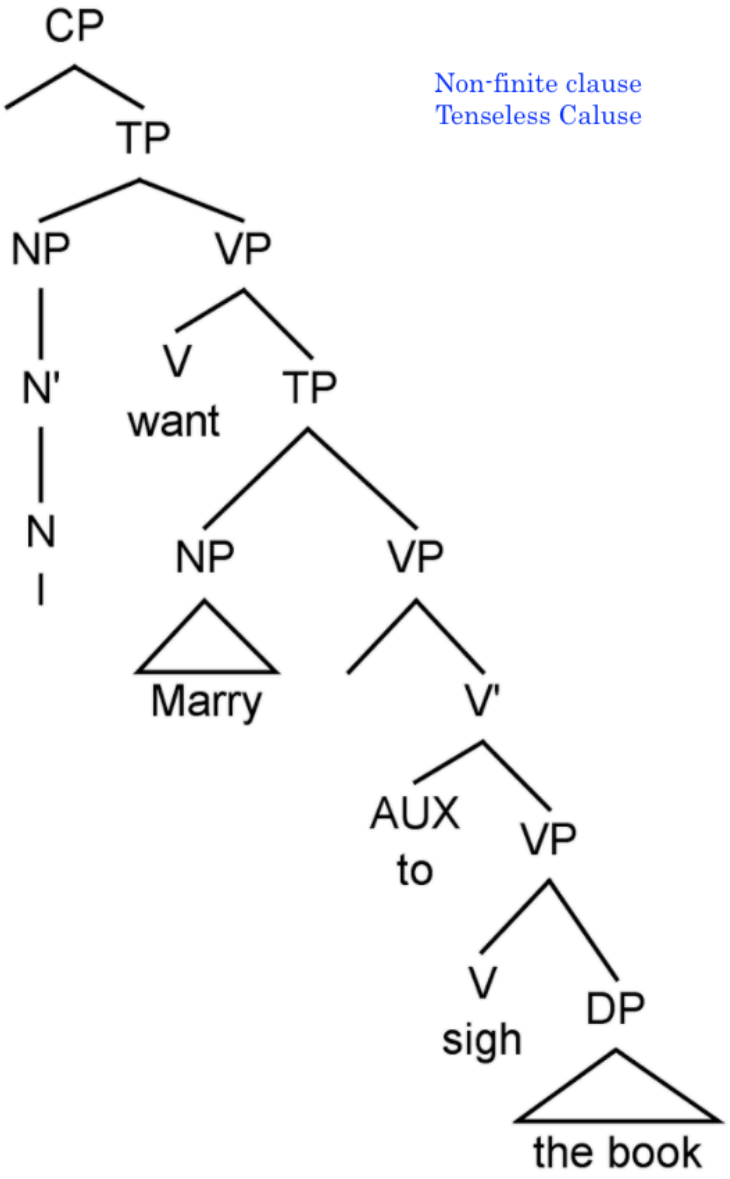
Adjunct Clause

Finite and nonfinite clauses

- Finite clauses
  - I said [that Mary signed my book]
    - Finite C. allows for past tense.
- Nonfinite clauses
  - I want[Mary to sign my book]



Finite Clause
Tensed Clause



Non-finite clause
Tenseless Caluse

Nominative and Accusative

- There are cases such as:

1. Nominative
   - Subject pronouns takes nominative case
     - I know he eats fruit
2. Accusative
   - Object pronouns takes Accusative case
     - I have seen him eat fruit

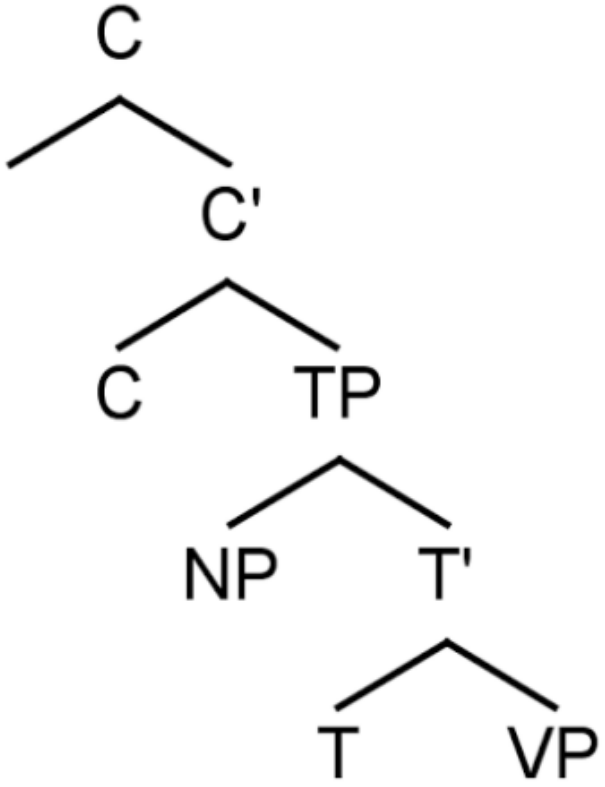
Tests of Finiteness:

1. Subject test
2. Complementizer for test

CP and TP

- Complementizer Phrase :

1. It has its C as head and S as its complement and an empty specifier used with Wh-movement
   - Null Complementizer [+∅]



7
Constraining X'-theory

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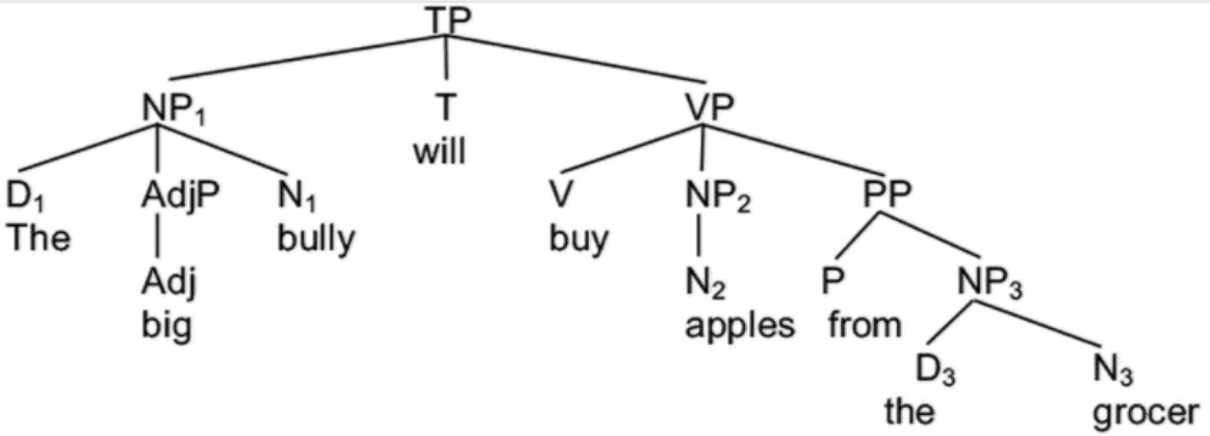


1) What node(s) dominate N_3 *grocer?*

2) What node(s) immediately dominate D_3 *the*?

3) Do T *will* and V *buy* form a constituent?

4) What nodes does N_1 *bully* c-command?

5) What nodes does NP_1 *the big bully* c-command?

6) What is V *buy's* mother?

7) What nodes does T *will* precede?

8) List all the sets of sisters in the tree.

9) What is the PP's mother?

10) Do NP_1 and VP asymmetrically c-command one another?

11) List all the nodes c-commanded by V.

12) What is the subject of the sentence?

13) What is the direct object of the sentence?

14) What is the object of the preposition?

15) Is NP_3 a constituent of VP?

16) What node(s) is NP_3 an immediate constituent of?

Introduction

- Any sentence is captured wit this system.
  - However, it allows us to generate ungrammatical sentences too.

    1. a. Ali loves Mohammad
       b. *Ali loves.
       c. Ali smiled
       d. Ali gave X to Y

  - The system that allows c to be licit, must also allows that for b.
  - Since complements are optional.
  - X'-bar theory optionally allows complements.
  - We observe that some verbs require objects
  - This knowledge is stored in our Lexicon
  -

Reconstruction

- Lexicon restrictions (relations-based)
  - Predicated (modified) (VPs)
    - Defines the relations between X and the real world.
      - The verb defines the relationships between arguments X and Y.
        - A predicated requires different types of arguments:
Intransitive	1	argument	smile
Transitive	2	arguments	hit
Intransitive	3	arguments	put
  - Arguments: (DPs)
    - Are the entities participating in this relation.
  - Predicate can have complements and specifiers but not adjuncts.
    - Adjuncts are not counted as arguments.

Predicate

- Lexicon restrictions (relations-based)
  - Predicated (modified) (VPs)
  - Defines the counted as arguments
- Subcategorization restrictions
  - Predicate (V) place restrictions on its complements.
  - Verb ask take (NP) or (CP)
    - I asked [$_{NP}$ the question]
    - I asked [$_{CP}$ that you leave]
- Selectional restriction
  - Semantics restrictions on what can appear with V
    - #My comb hates raisinettes
-

Thematic Relations

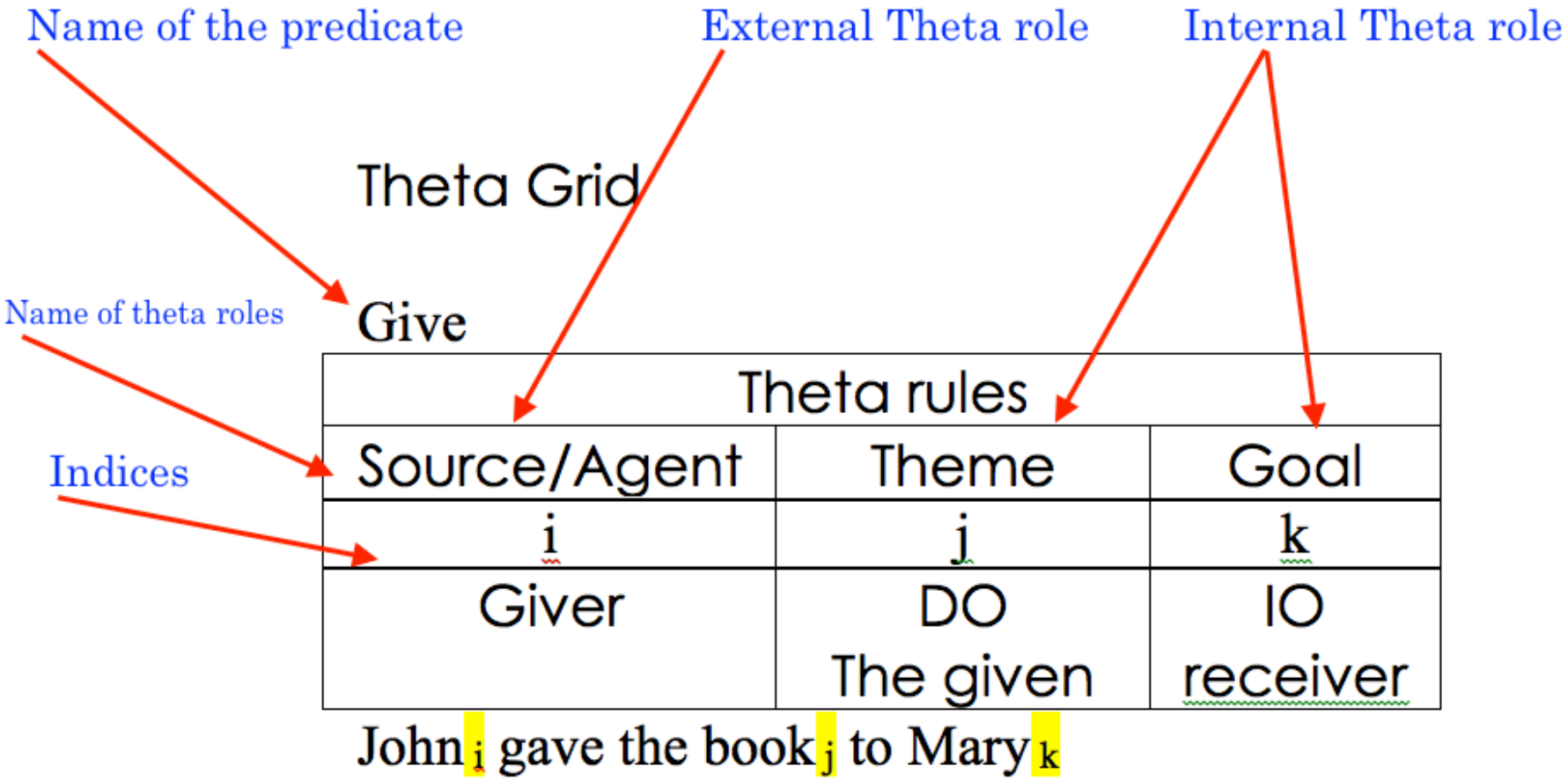
- Thematic Relations
  - Description of the role that the argument plays with respect to the predicate.
    - The man helped the woman
  - There are many thematic relations that holds between arguments and a predicate
    - Agent, Theme, Experiencer, Instrument, Goal, Recipient, Source, Location and Benefactive
- s

Thematic Relations		
Thematic Role	**Description**	**Example**
Agent	The entity that intentionally carries out the action of the verb.	**Tariq** nocks the door. Salih was followed by **Salih**. The window was broken by **Hamad.**
Theme	The entity that directly receives the action of the verb.	I helped **Mohanad.** Ali placed **the picture** on the wall. **The see** is purple.
Experiencer	The entity that undergoes an emotion, a state of being, or a perception expressed by the verb.	**She** was frightened. **Tagriq** hates his new look **The student** felt the pain.
Instrument	The entity by which the action of the verb is carried out.	He used **invisible ink** . **The car** broke into the home. She used **screwdriver** to fix it.
Goal	The direction towards which the action of the verb moves.	Tom traveled to **Tabuk** **Makkah** is our final destination **Tariq** was given the prize.
Recipient	when the verb donates a change of possession.	Hadeel gave **Alia** the book **Alia** received the clip from Hadeel
Source	The direction from which the action originates.	I went to Sanaa from **Mascat** **She** gave me a book to Hamad He came directly from **his office**
Location	The location where the action of the verb takes place.	The students are **at school** She lives in **Olya**
Benefactive	The entity that receives a concrete or abstract element as a result of the action of the verb	He handed me the book to **Nasir** She invited **me and Lee** to food

theta role or θ -role

- Theta role
  - Bundles of thematic relations that cluster on one argument.
    - Thematic relations: agent, theme, goal
    - Theta roles bundles of thematic relations to one argument

Theta Grid



Adjuncts are never arguments
They never appear in Theta Grids

Theta Criterion

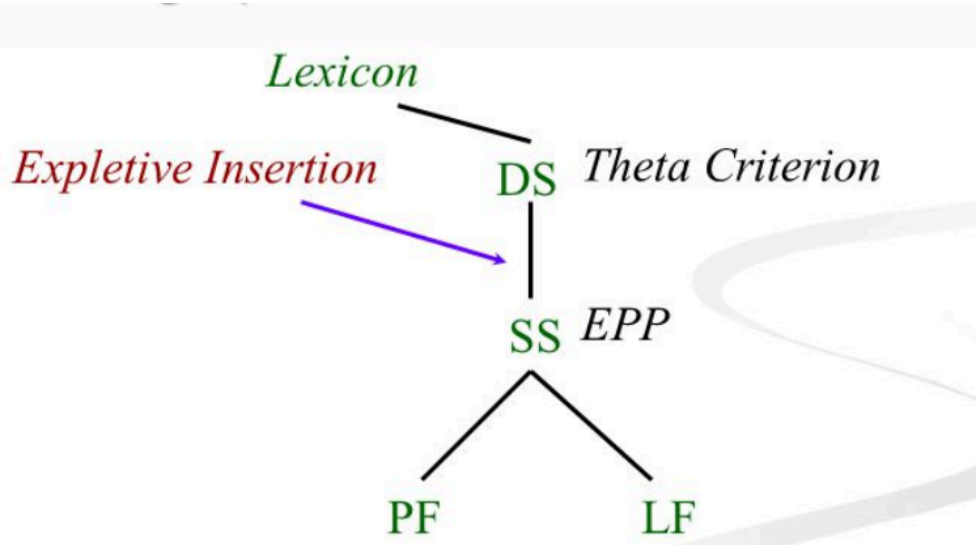
- Theta Criterion
  - It governs the linking between semantic roles and syntactic position
  - To constrain X'-bar theory by ruling out any X that doesn't meet the requirements.
    - Each argument bears one and only one θ-role,
    - Each θ-role is assigned to one and only one argument.

Lexicon

- X'-theory is too powerful.
  - Theta criterion is there to place some constraints over X'-Theory
  - We have two internal systems:
    1. Computational component
       - That is responsible for building up sentences and ruling out all ungrammatical sentences.
    2. Lexicon
       - Mental dictionary or list of words and their properties that will provide us with theta roles in order to achive (1)
       - **Lexical items** (words) stored as entries in the mental dictionary.
       - L. contains all meanings about part of speech (meaning, syntactic categories, pronunciation, theta grid etc).

Projection principle

- **Projection principle**
  - Lexical information (such as theta roles) is syntactically represented at all levels.
  - Lexicon feeds into the computational component which then combines words and generate sentences.
- **Extended projection principle (EPP)**
  - All clauses must have subjects. Lexical information is syntactically represented.



Mid-term exam

- Mid-term exam will be on(19-21/11/2017)
- Chapters included (1-8)

8
Head-to-head movement

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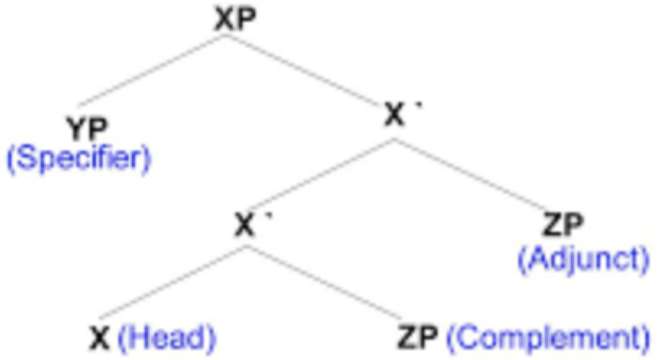
What is the difference between D-structure and S-structure
What is verb-raising and why do we need it?
What is V->T and T->C movement?
What is the evidence for both of them?
What is VP-internal subject hypothesis?
What is do-support?

Introduction

- According to X'-theory, Obj is the complement of V (sister of V daughter of V') and nothing can intervene between a comp. and its head.
  - This should mean that adjunct and the specifier are not allowed between a head and its complement.
    - X-bar theory cannot account for everything.
    - Many languages allows VSO word order.
    - This derive us to look for solutions.



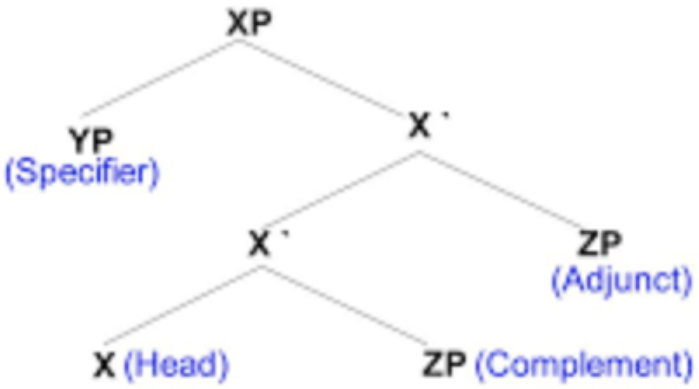
Irish

- However, in Irish (VSO), the subject (specifier) intervenes between the subject and the object.

V	S	O

1) Phóg Máire an lucharachán.
Kissed Mary the leprechaun
"Mary kissed the leprechaun."

- This sentence cannot be generated by X'-theory.
- It is impossible to draw a tree where the specifier (Subj) intervenes between the head (V) and the complement (Obj)
- New rule is needed.



Movement

- Movement:
  - Move something around the sentence.
  - This rule will account for problems such as VSO word order adjuncts and the.
  - This rule will account for problems such as French adjuncts (adverbs).

French

- French language allows adjuncts to appear between VP head and the complement. (S V Adv Comp)
  - Souvent intervenes between the verb and the object.

	S	V	Adv		Comp.
2)	Je	mange	souvent	des	pommes.
	I	eat	often	of.the	apples
	S	Adv	V		Comp.
	"I	often	eat		apples."

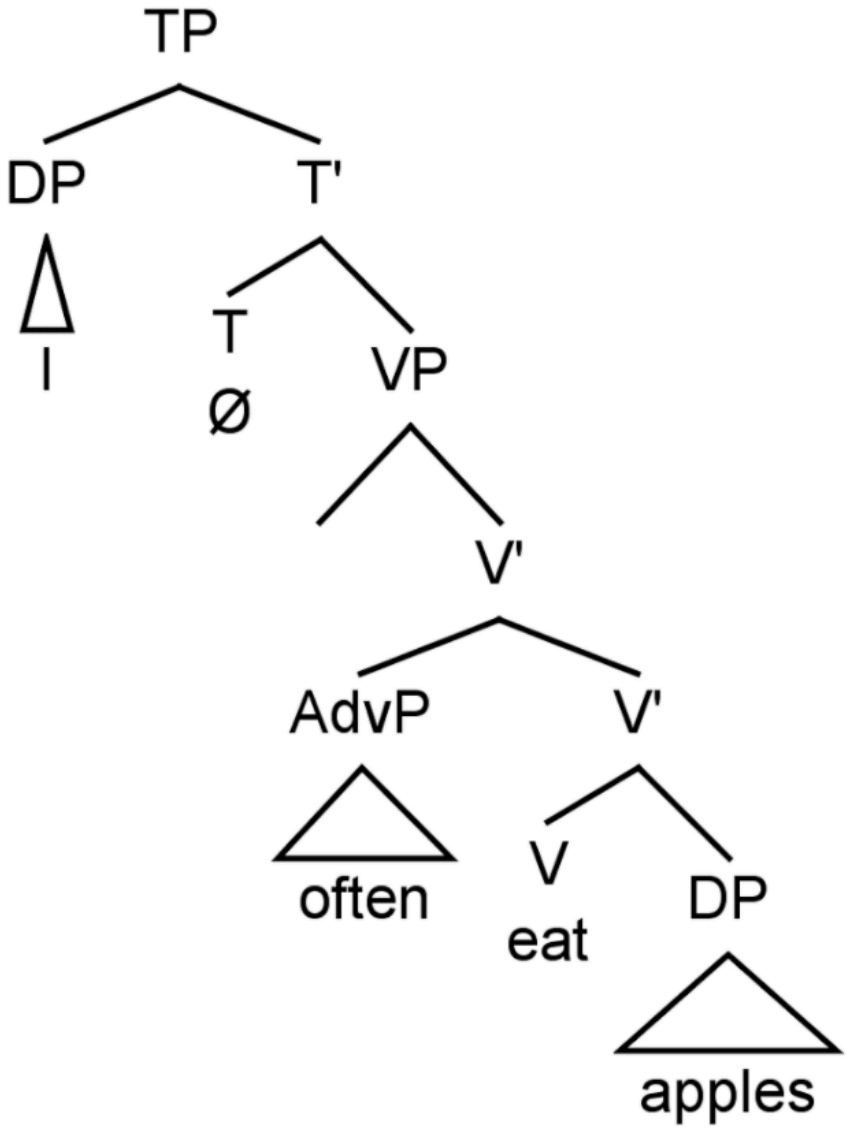
X'-bar cannot draw the tree for the same reason as well.

X'-theory under-generates X because it cannot produce a possible grammatical sentence.

Phrase structure rules cannot generate a possible sentence.

That is why we need ***Transformational rules***.

Adjunct in English



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	I	eat	often		of.the	apples
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	"I	(T)	often	eat		apples."

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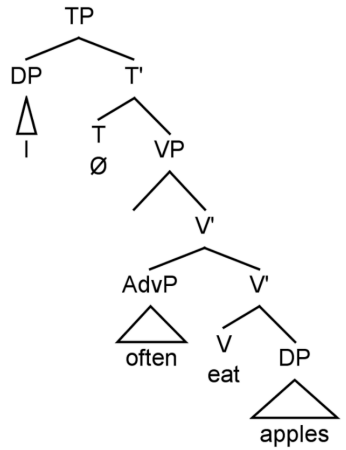
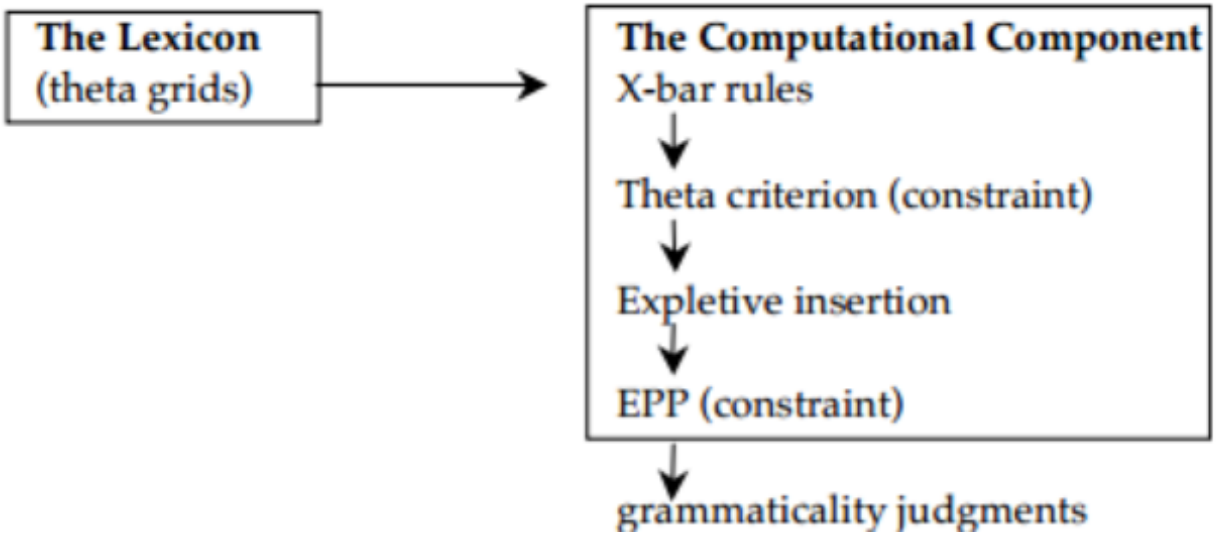


French

- X'-theory failed to produce two possible sentences in two different languages.
  - So, we need a set of rules (**Transformational rules**) that change the structure generated by phrase structure rules.
    - Take output of X'-theory and change it into different tree.
  - The output is changed into different trees.
  - All ungrammatical sentences are ruled out at D-level.



Transformation and Insertion rules

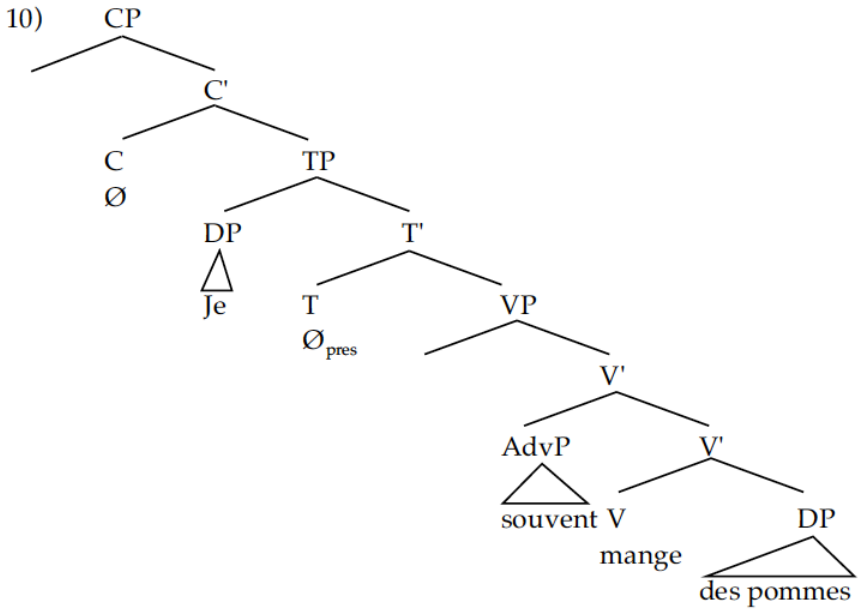
- Movement rule: moving things around the sentence.
- Insertion rule: putting sth. new into the sentence.
  - Movement of the head:
    - Sentences (1)&(2) are possible because of movement.
    - Our goal is to present a simple, elegant account for different sentences.

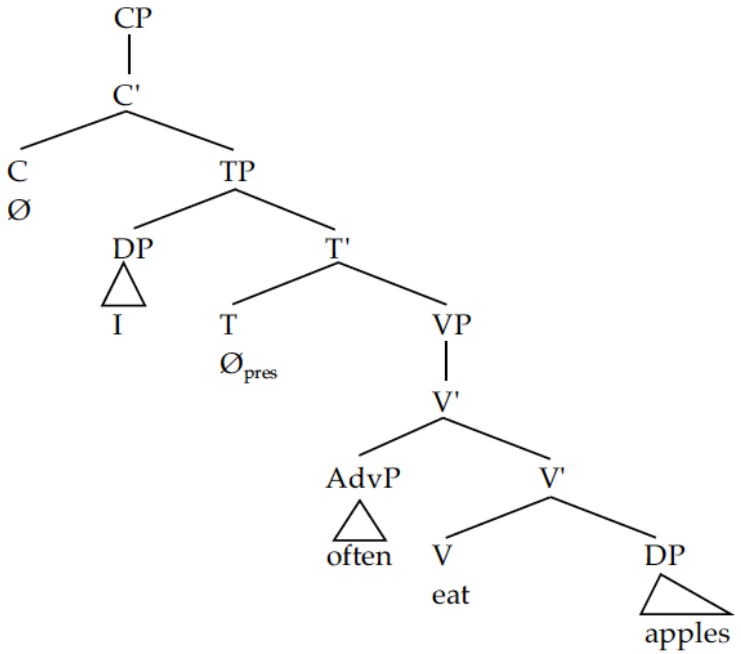
Verb Movement (V->T)

- In (2), Adjunct appears between head of VP and complement, unlike (3)

2) Je mange souvent des pommes.
I eat often of.the apples
"I often eat apples."

3) I often eat apples.





Verb Movement (V->T)

- Verb raising: V->T move the head V to the head T.

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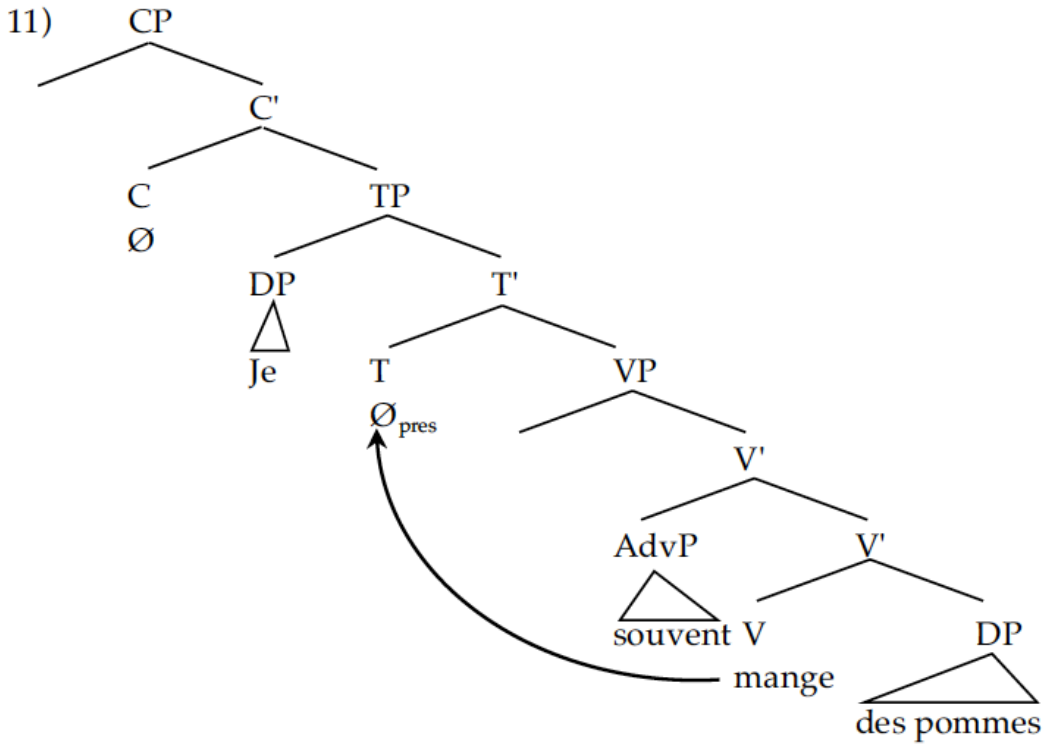

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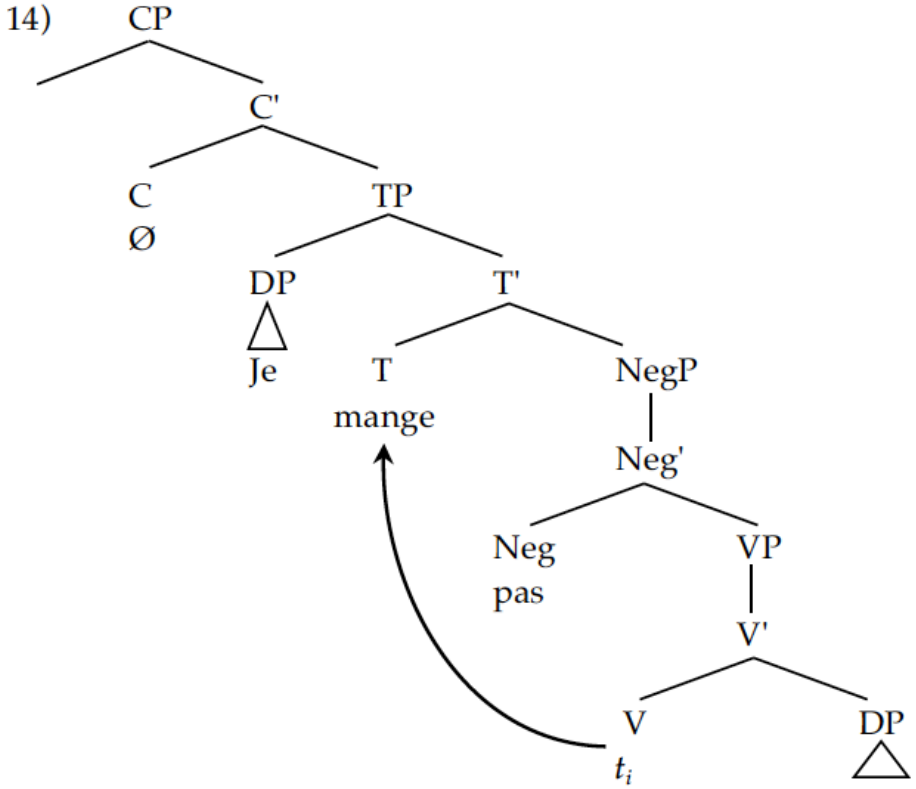
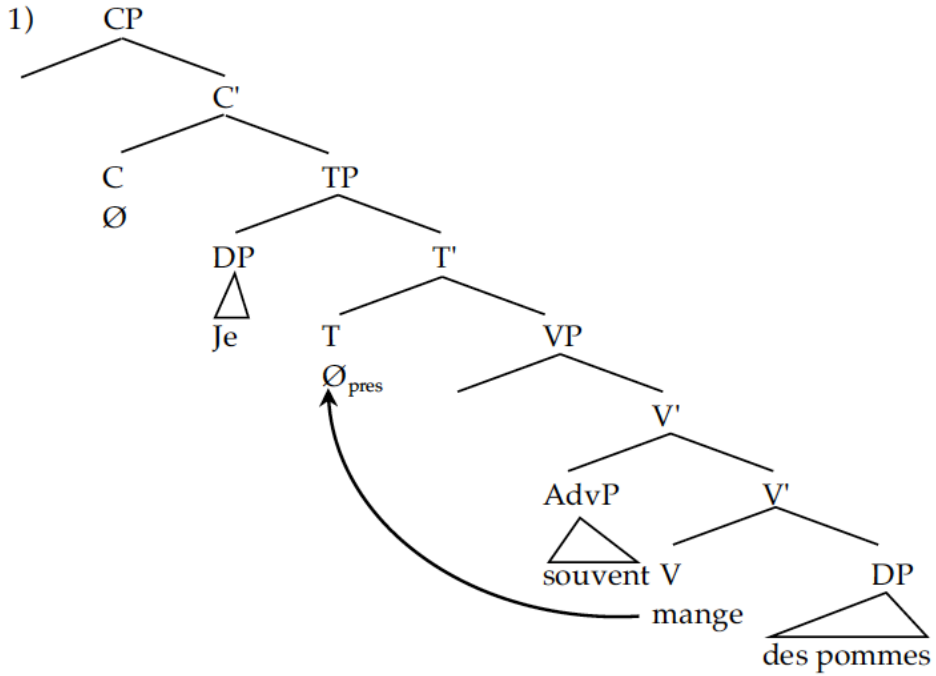


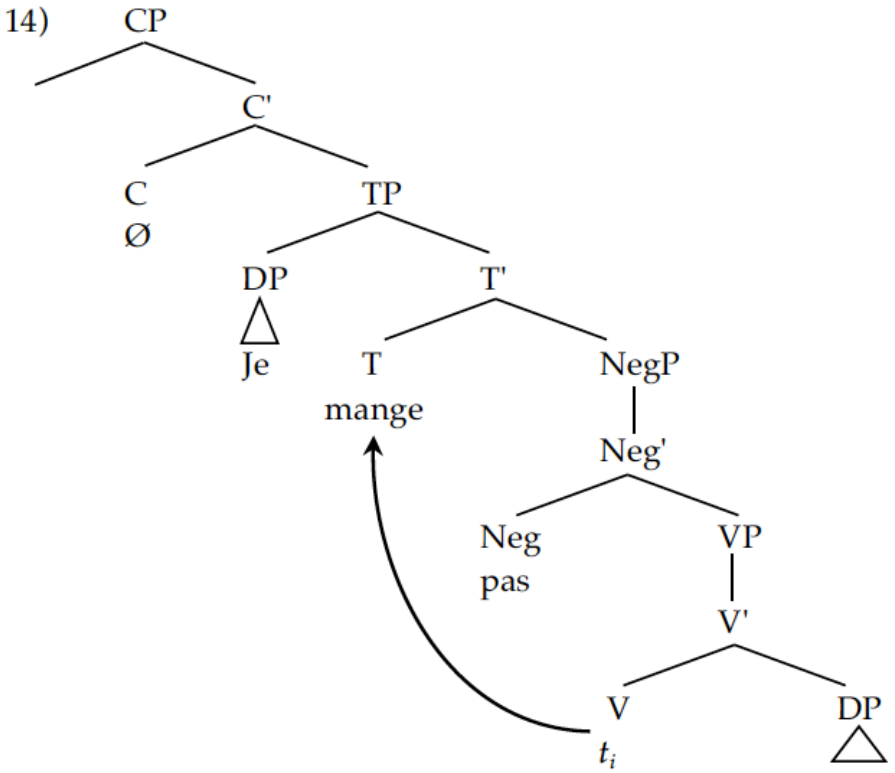


Verb Movement (V->T)

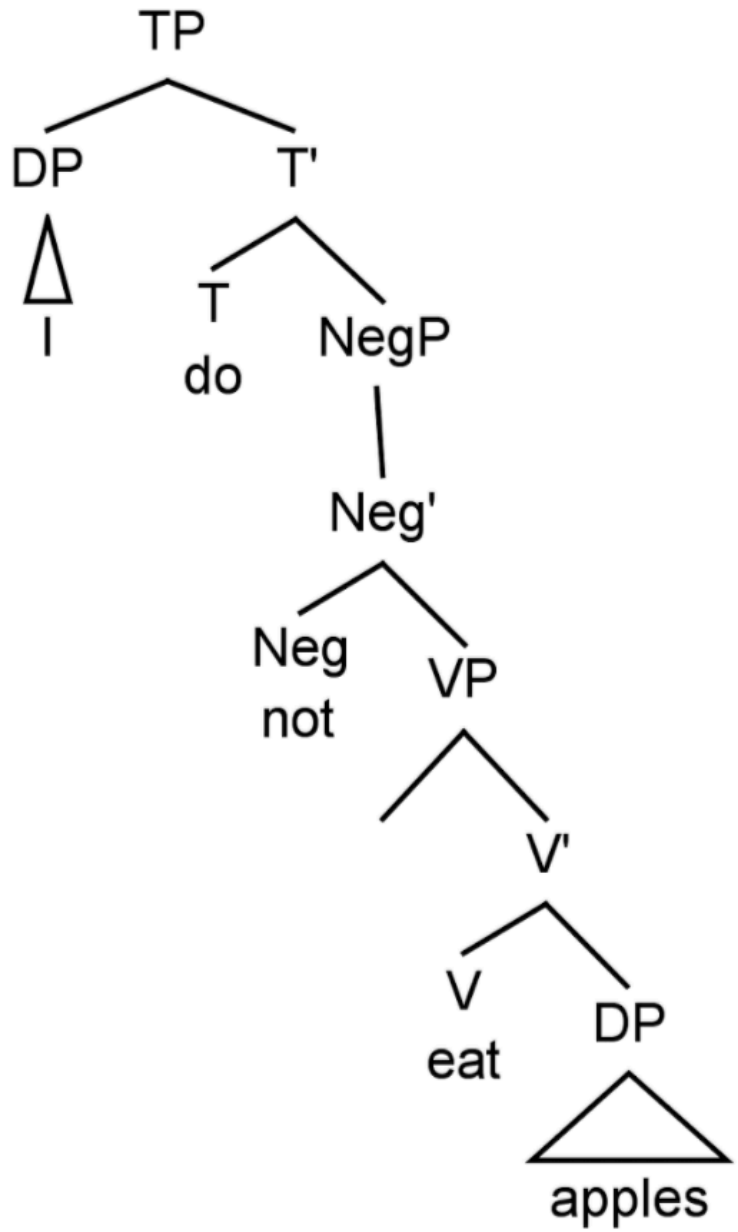
- Verb raising :
  - V->T move the head V to the head T.

4) Je mange pas des pommes.
I eat not of.the apples
"I don't eat apples."

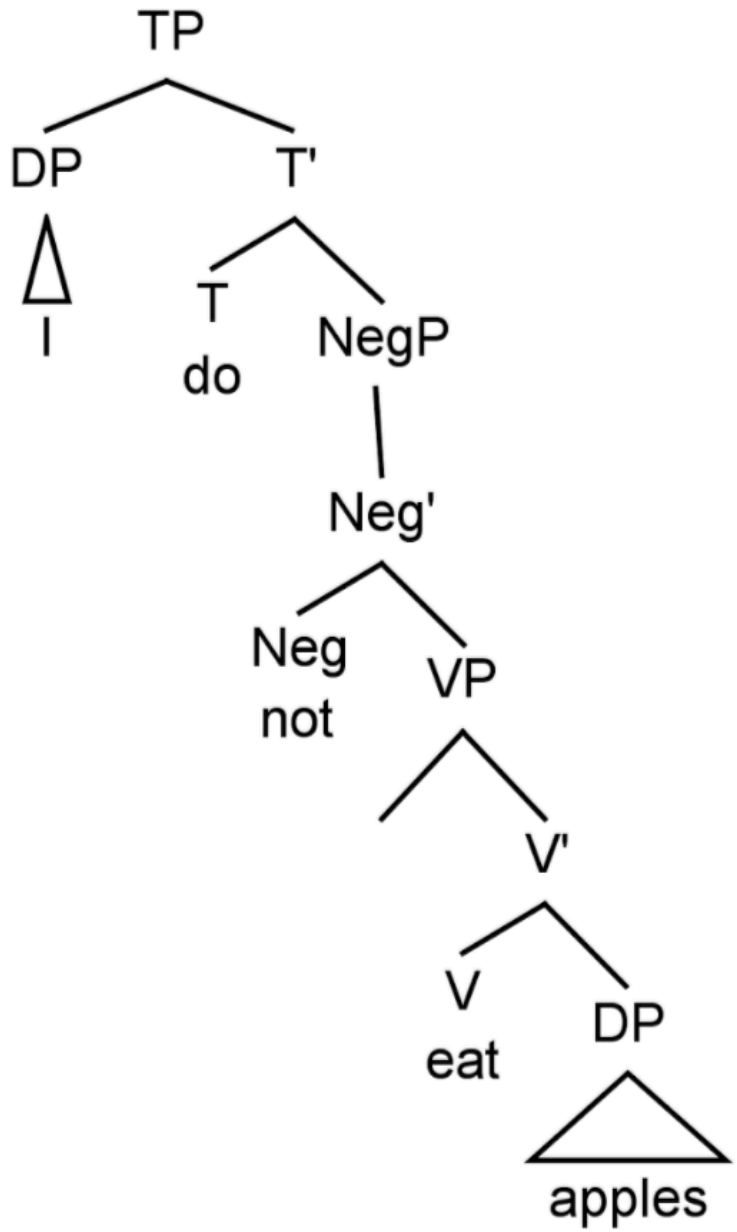
5) I don't eat apples.

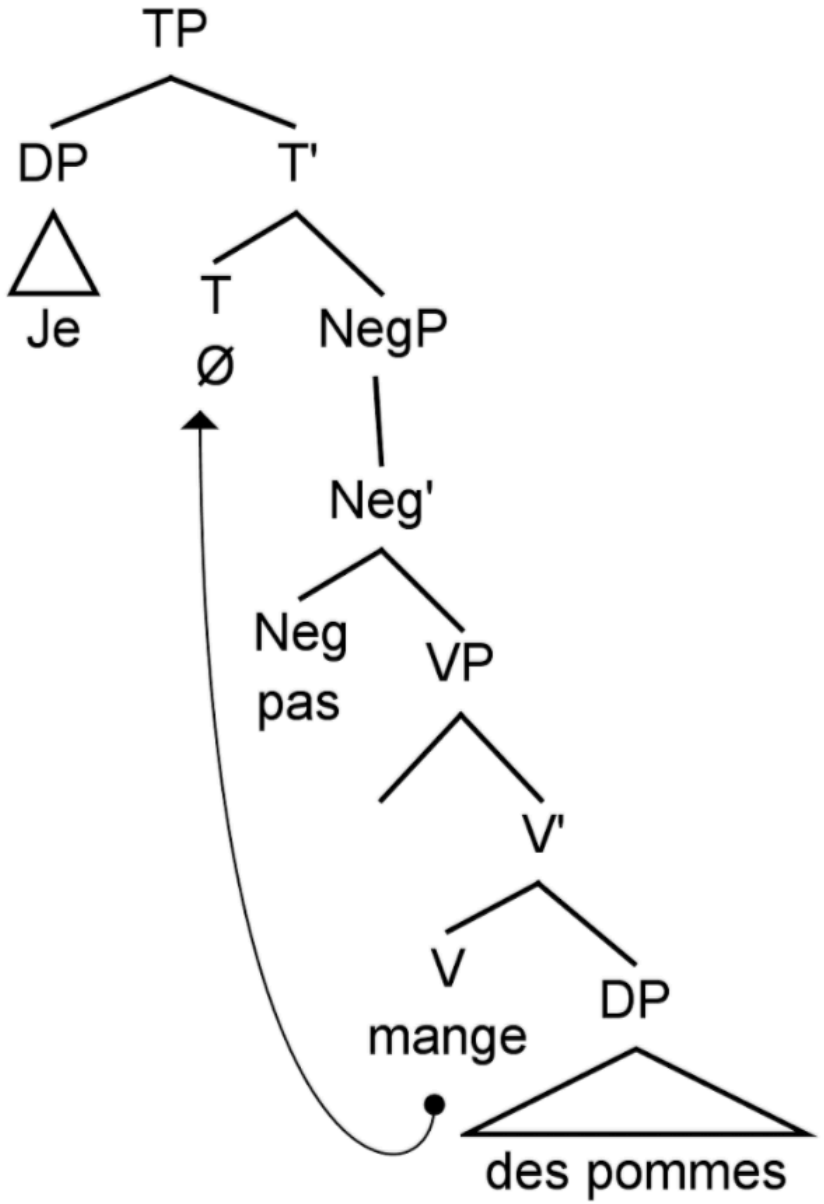


Negation

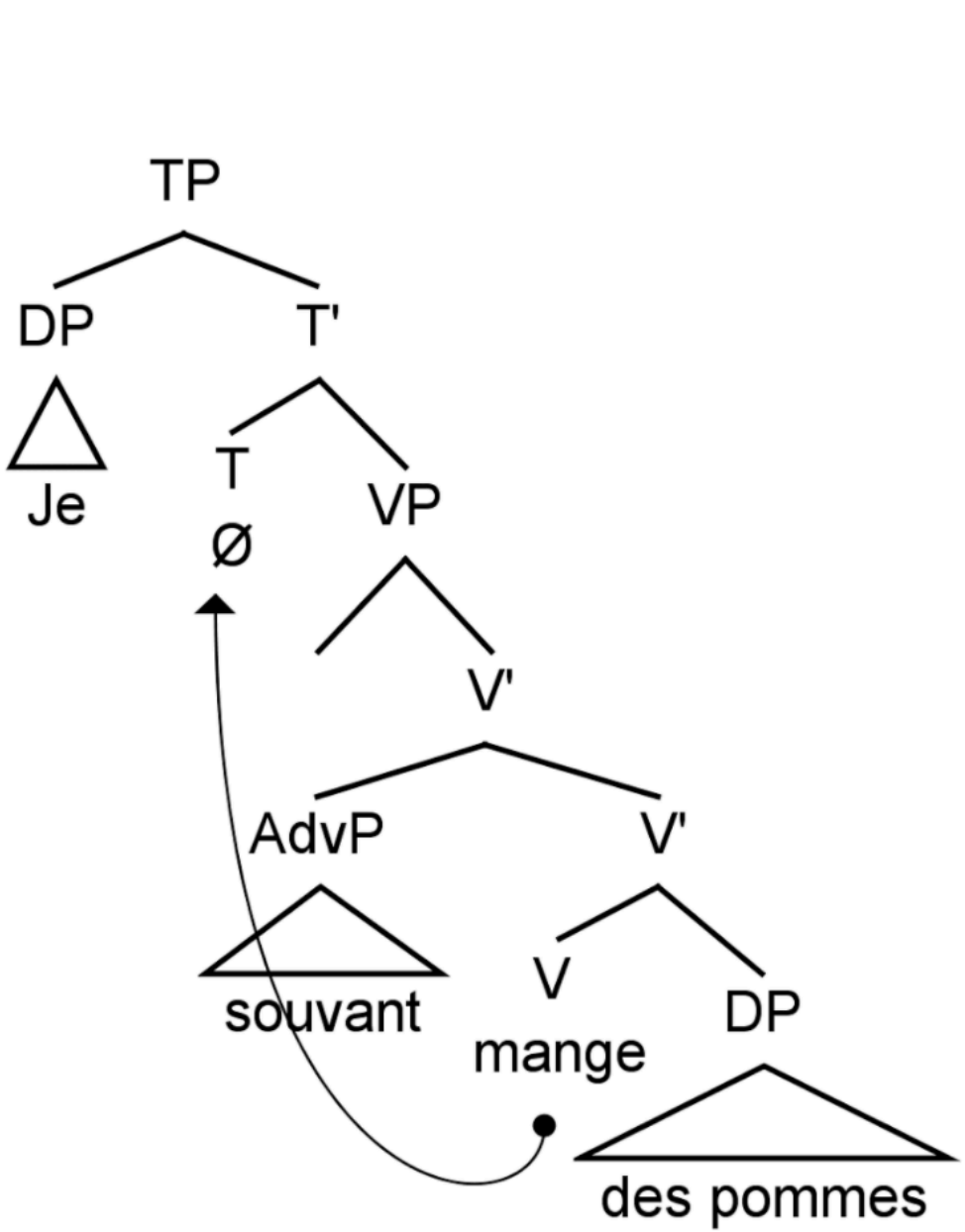


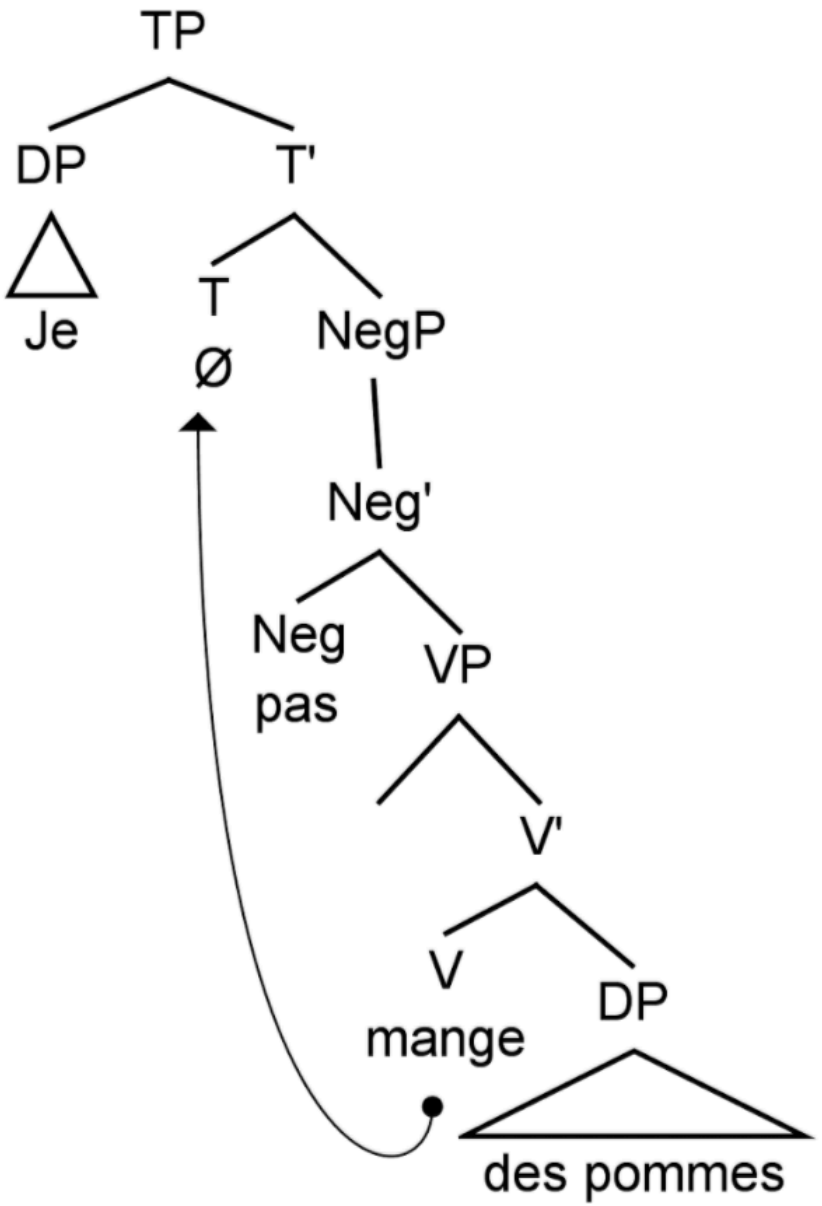
Negation


TP
DP
T'
I
T
do
NegP
Neg'
Neg
not
VP
V'
V
eat
DP
apples


TP
DP
T'
Je
T
Ø
NegP
Neg'
Neg
pas
VP
V'
V
mange
DP
des pommes

Negation and adjunct





Irish

- Different word order (VSO)
  - There is no way that X'-theory account for such type of sentences.

1) Phóg Máire an lucharachán.

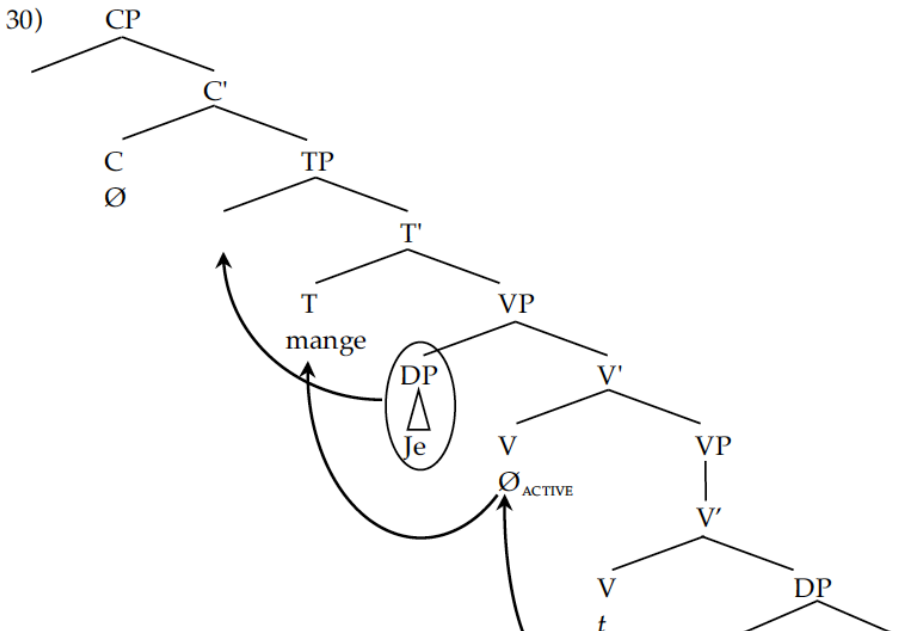
Kissed Mary the leprechaun

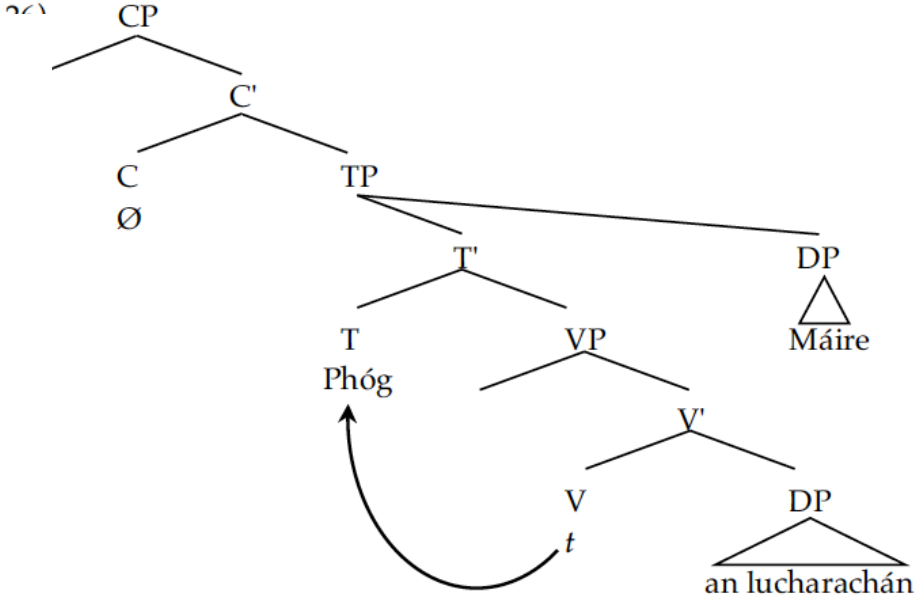
"Mary kissed the leprechaun."

- If X-bar fails, the transformational theory gives us the answer.
- If we assume that the underlying word order of VSO is actually SVO, by the virtue of movement.

VP-internal subject hypothesis

- VP-internal subject hypothesis: Subjects are generated in the specifier of VP to meet thematic motivations
  - V->T raising
  - Subject NPs move from the Spec of VP to the Spec of TP.
  - Two movements: one of the verb, one of the subject.
  - Verb raises to T passing negation, adjuncts, and VP sub.





*Phóg an lucharachán Máire.

VP-internal subject hypothesis

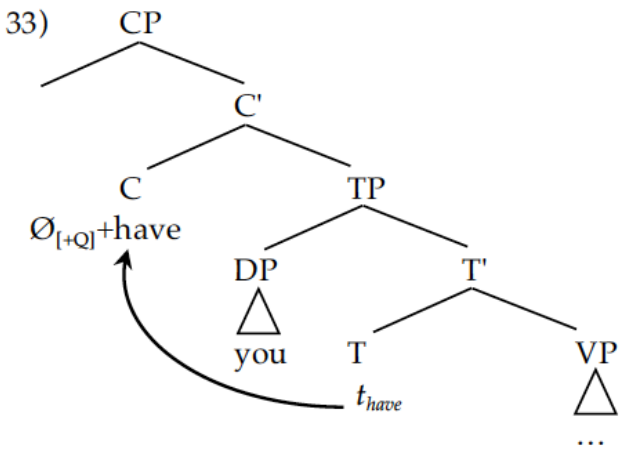
- X-bar theory failed to generate correct order of sentences.
- We solved the problem by a new rule: transformation.
- By taking a structure generated by X'-theory and change it in restricted ways.
- We looked at two restricted ways:
  - 1. V->T (movement of heads)
    - 1. raising the verb to the T head.
    - The raising is done to meet the inflection requirement.
    - V-raising can explain adjunct appears between a head and its complement.
    - VP-internal subject hypothesis can explain the VSO word order.
    - This movement is triggered by morphological requirement.

T->C raising

- X- is can explain the VSO word order.
  - In Yes/No question, the Aux. verb is inverted with the subject.
    - You have helped me.
    - Have you helped me?
  - But this is unlike many other languages.
  - In Irish, no alternation but there is an initial complementizer (an) English has null∅ [+Q] complementizer

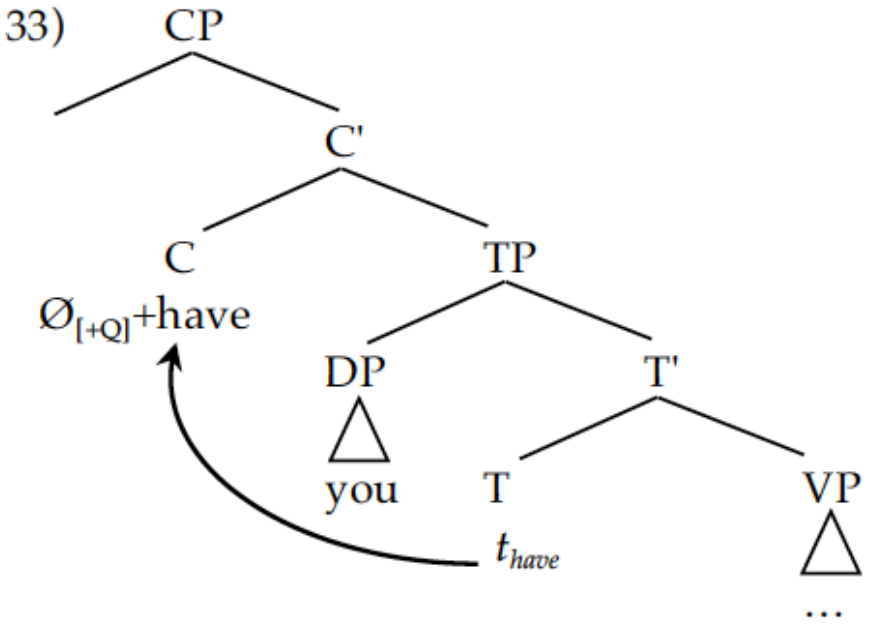
An	bhfaca	tú	an	madra?
Q	See	you	the	dog

'Did you see the dog?'



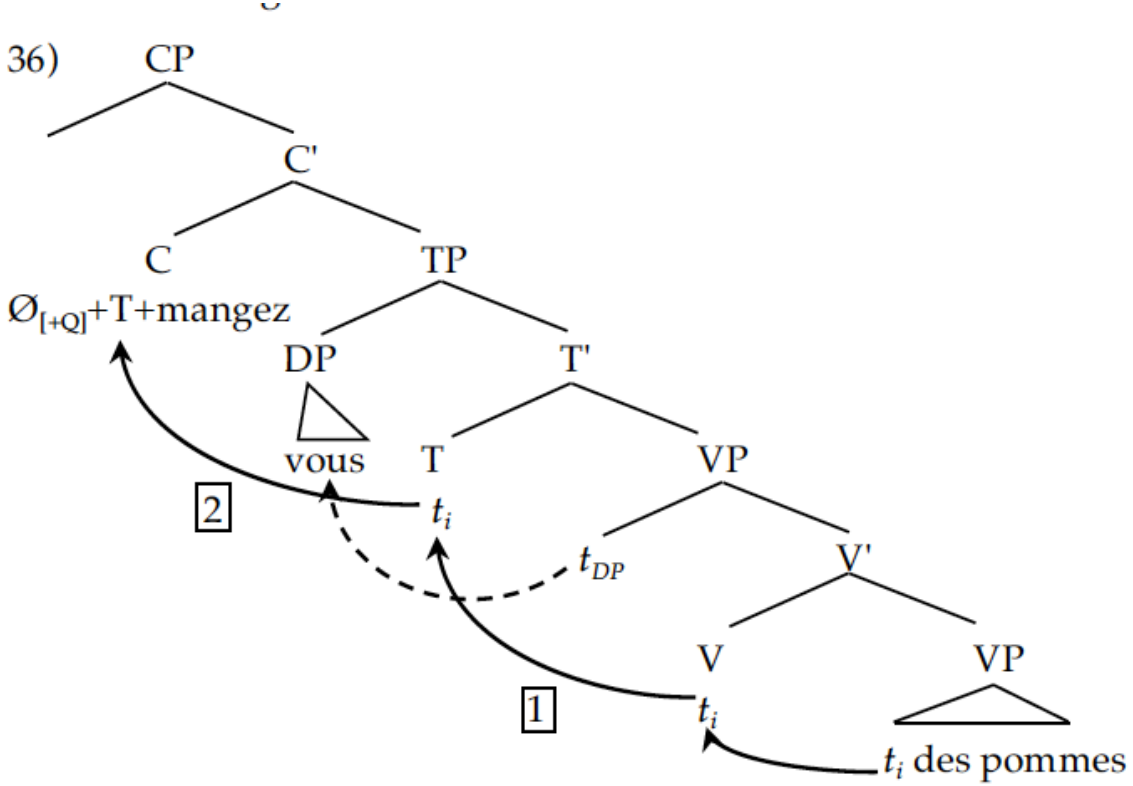
T->C raising

- On argument in support of TtoC movement
  - Overt question complementizer are in complementary distribution.
    - I asked have you squeezed the paper?
    - I asked whether you squeezed the paper?
    - *I asked whether have you squeezed the paper?
  - This movement is triggered by a complementizer.



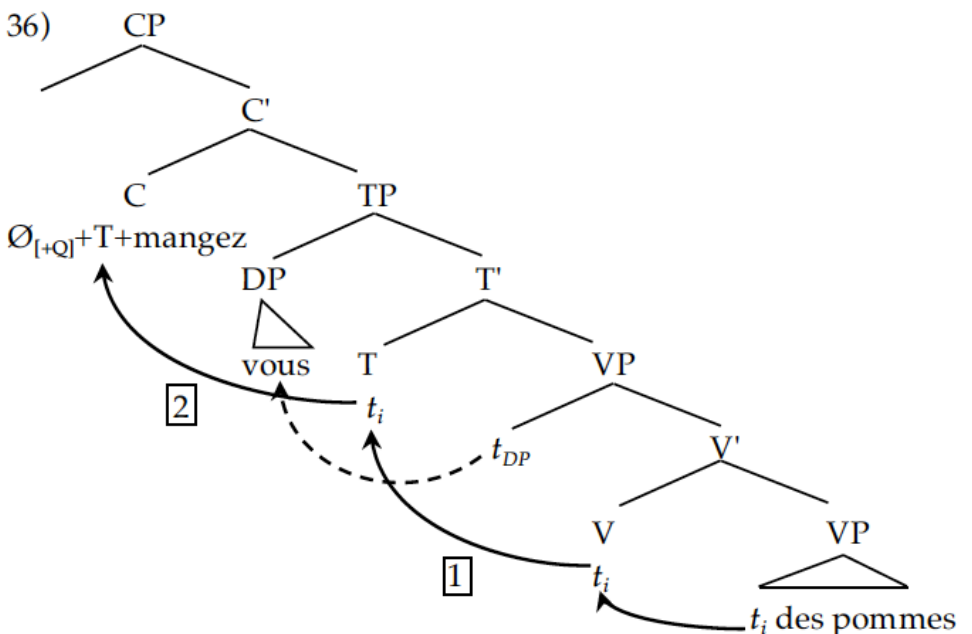
T->C raising

- both are triggered by a head-to-head movement
- Only ouxiluary undergo T->C movement.
- Main verb don’t raise to T. (English)
- Main verb raise to T. (French)
-



Do-support

- This is a test
  - You eat apples
  - Do you eat apples?
    - If we insert the dummy auxiliary, then it undergo T->C movement.
    - When there is no other option for supporting inflectional affixes, insert the dummy verb do into T



So

- X'-bar theory cannot account for other languages' adjunct, word order, Neg.
- These're generated by Head-to-head movement.
- V->T movement is motivated by phonological reason.
- T->C movement is motivated by complementizer feature [+Q]
- Do-support test is needed when T cant be supported by any other way.