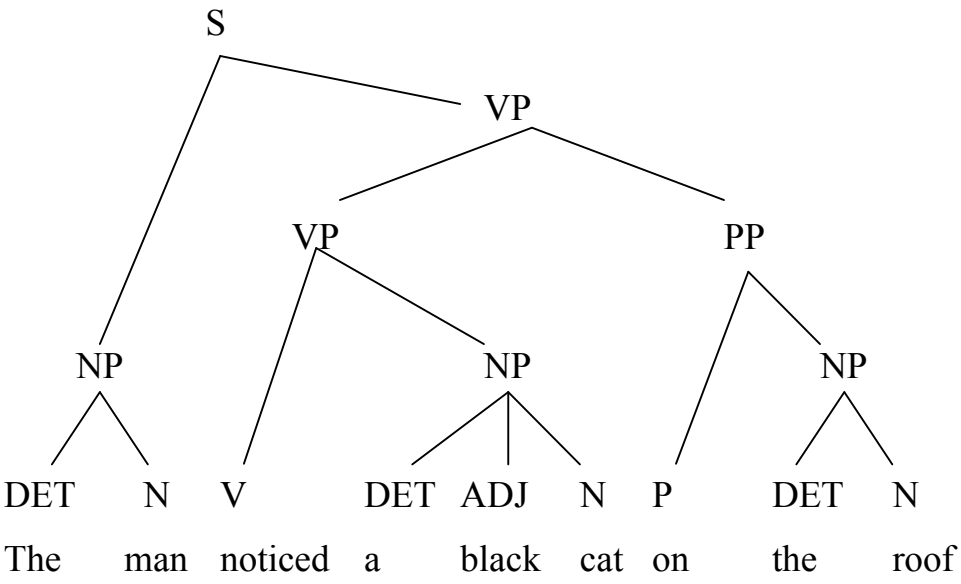
(1) The man noticed a black cat on the roof.



Phrase Structure Rules

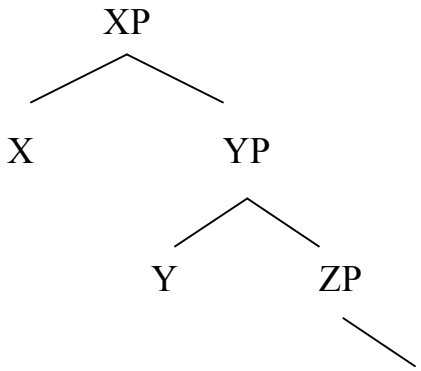
S → NP + VP
VP → VP + PP
VP → V + NP
NP → (DET) + (ADJ) + N
PP → P + NP

Grammatical relations are epiphenomena:

a. SUBJ: NP combined with VP to S
b. OBJ: XP c-commanded by V
c. ADVERBIAL: XP c-commanded by VP

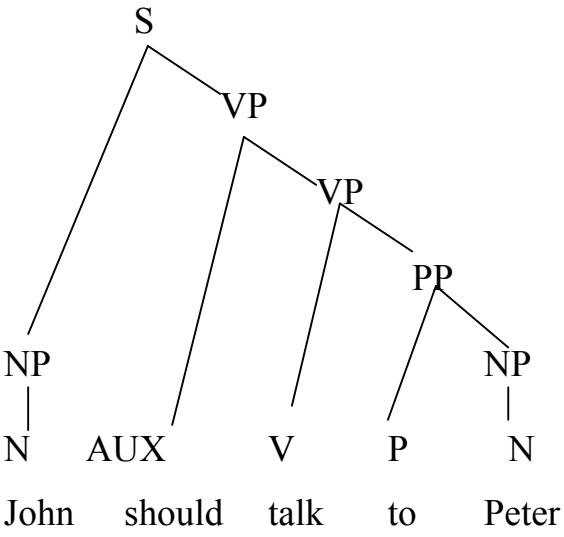
c-command

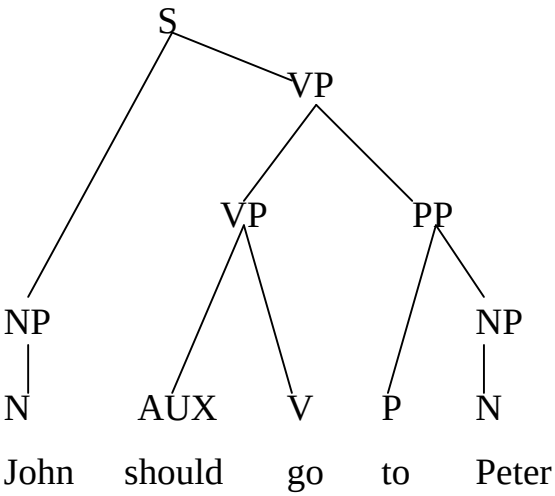
A node c-commands its sisters and their descendents (X is a descendent of Y if X is dominated by Y).



(2) You should talk to Peter.

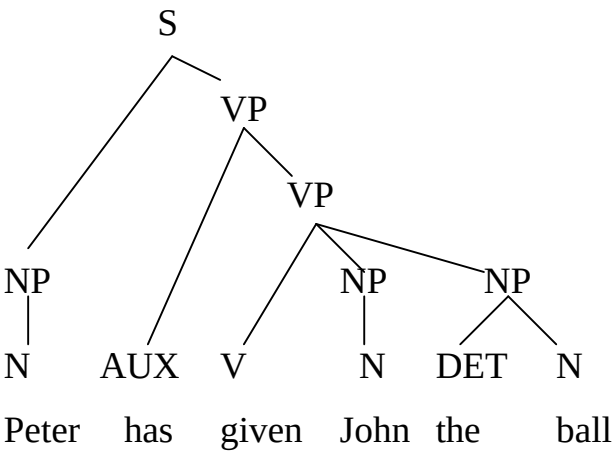
(3) Peter has given John the ball.





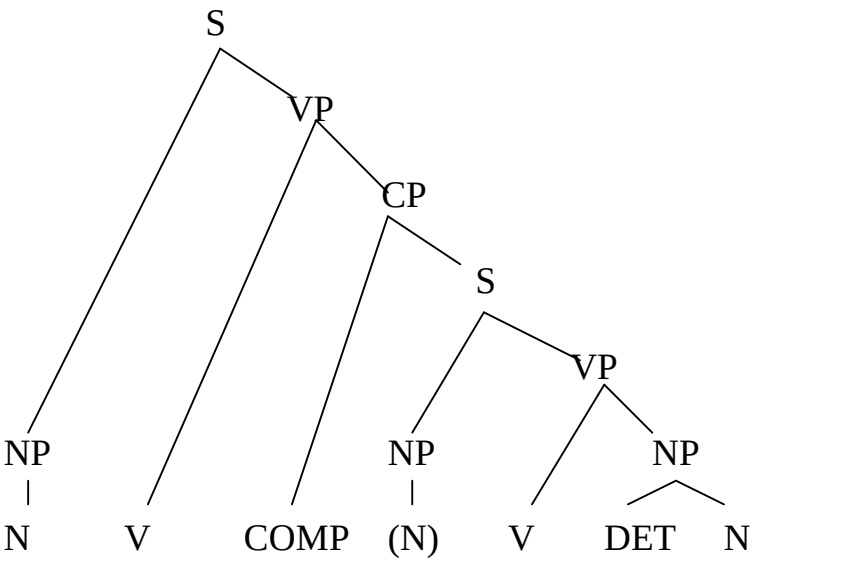
S → NP + VP
VP → AUX + (V/VP)
VP → VP + PP
VP → V + (NP/PP/VP)
NP → (DET) + (ADJ) + N
PP → P + NP

(4) I admit that this was a mistake.



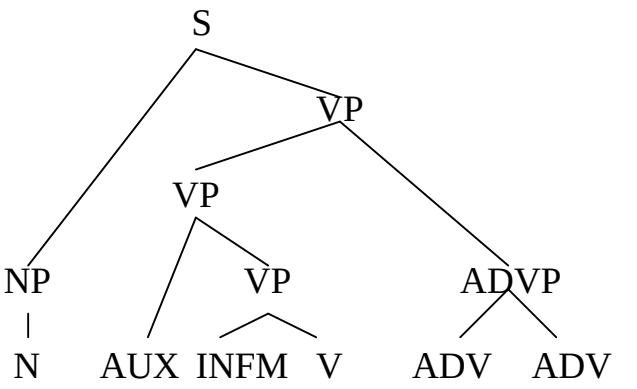
S → NP + VP
VP → AUX + (V/VP)
VP → VP + PP
VP → V + (NP/NP/PP/VP)
NP → (DET) + (ADJ) + N
PP → P + NP

(5) Ben admits that thus was a mistake.



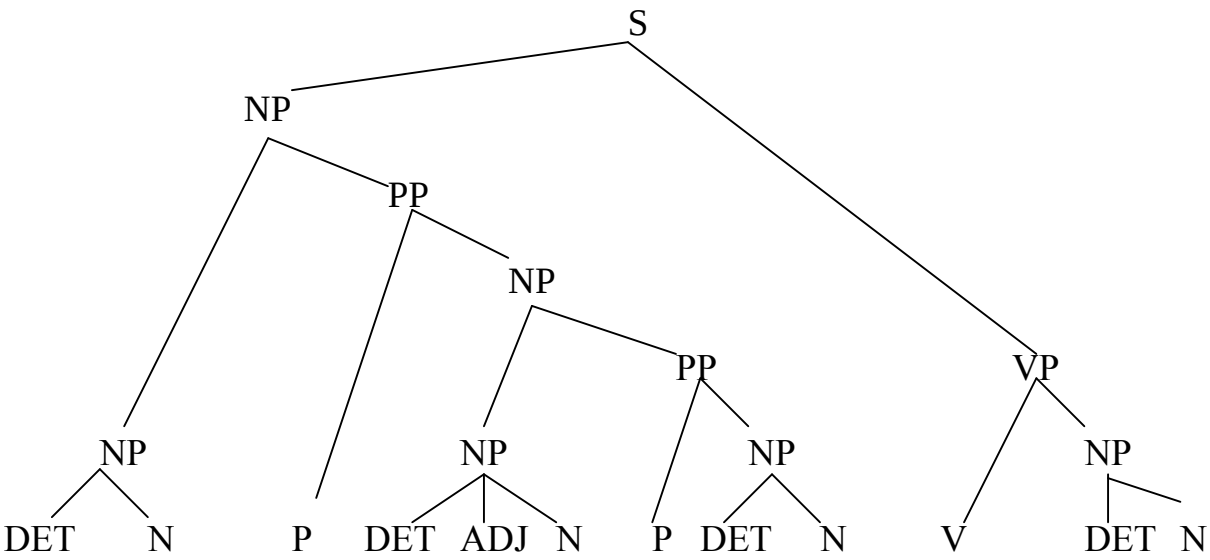
S → NP + VP
CP → COMP + S
VP → AUX + (V/VP)
VP → VP + PP
VP → V + (NP/NP/PP/VP/S')
NP → (DET) + (ADJ) + N
PP → P + NP

(6) Mary had to run very quickly.



S → NP + VP
CP → COMP + S
VP → AUX + (V/VP)
VP → VP + (PP/ADVP)
VP → INFM + (V/VP)
VP → V + (NP/NP/PP/VP/S')
NP → (DET) + (ADJ) + N
PP → P + NP
ADVP → ADV + ADV

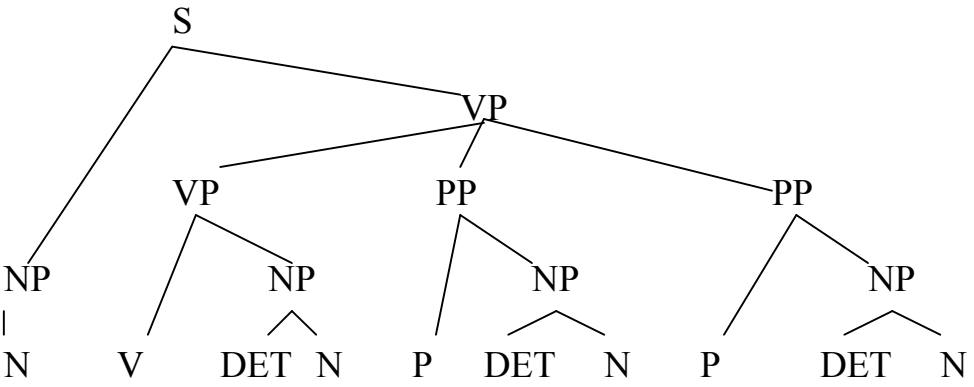
(7) The police man on the other side of the street noticed us.

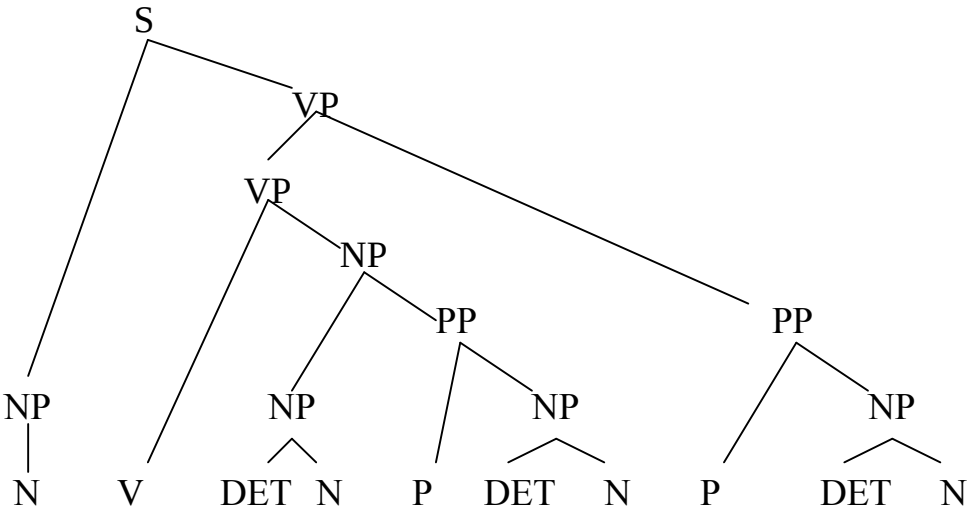


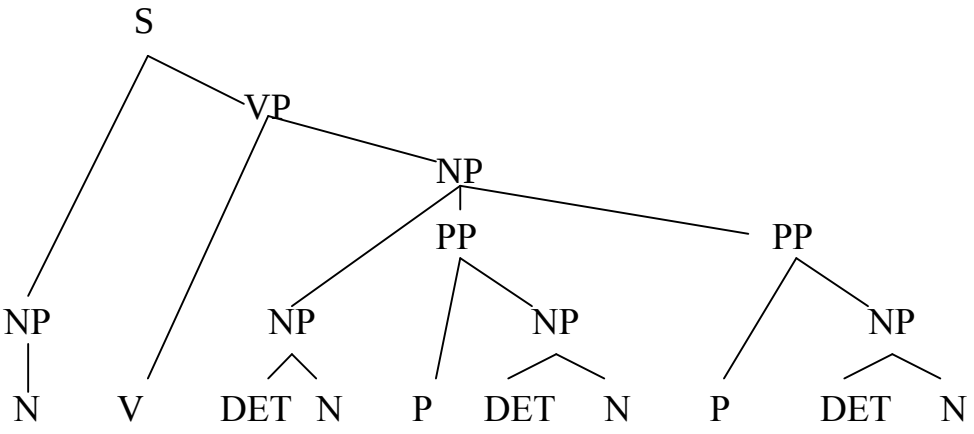
The police man on the other side of the street noticed us.

S → NP + VP
CP → COMP + S
VP → AUX + (V/VP)
VP → VP + (PP/ADVP)
VP → V + (NP/NP/PP/VP/S')
VP → INFM + (V/VP)
NP → (DET) + (ADJ) + N
NP → NP + PP
PP → P + NP
ADVP → ADV + ADV

(8) Peter saw the man in the park with the telescope



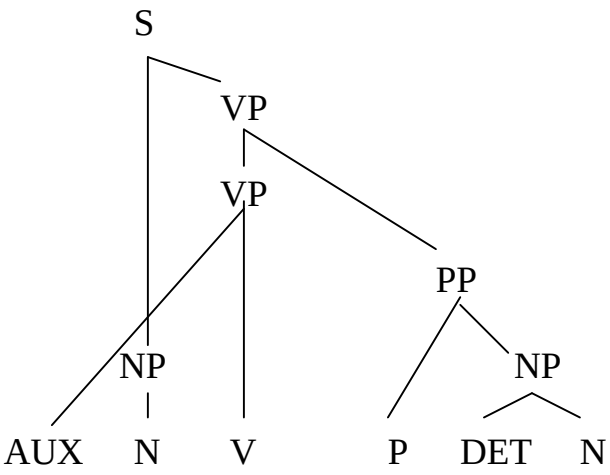




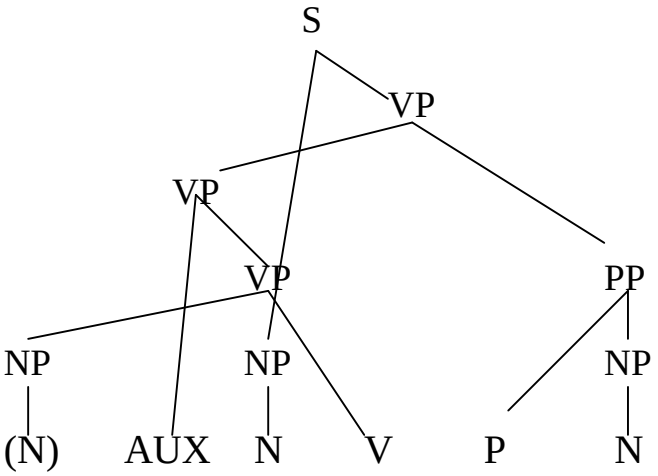
Transformations

(1) Is Peter coming to the party?

(2) What has Mary done since Wednesday?

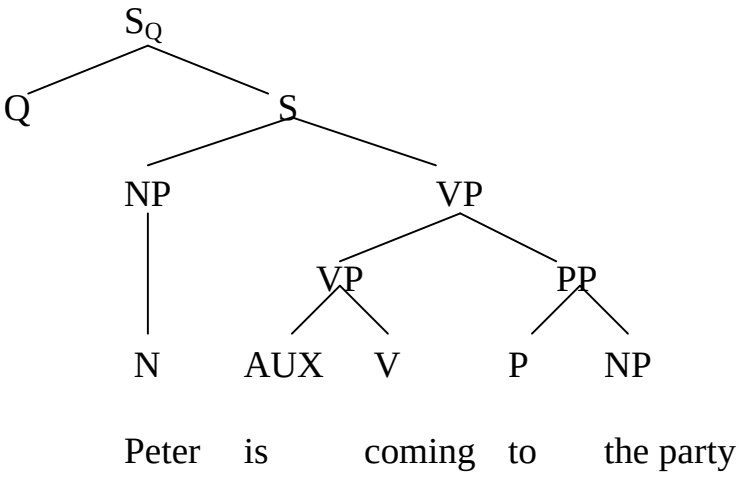


Is Peter coming to the party



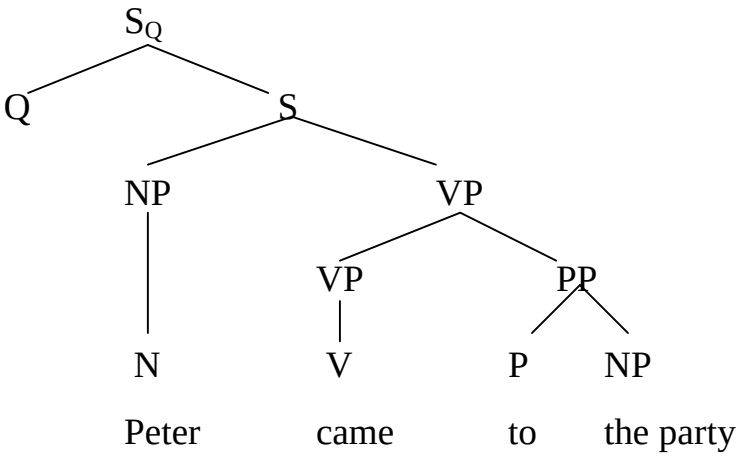
What have Mary done since Wednesday?

Yes-no questions

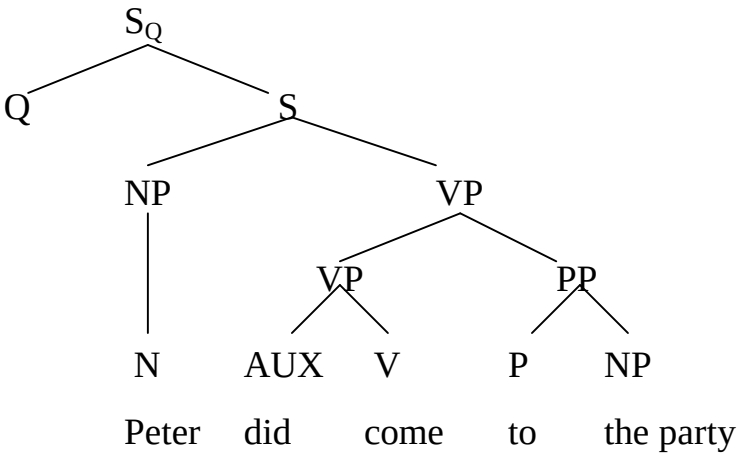


Question Inversion

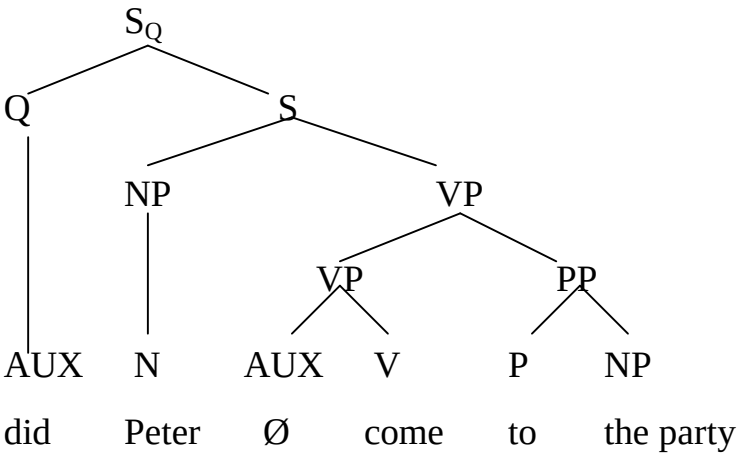
In a sentence marked with Q, move the first auxiliary to the beginning of the sentence and attach it to Q.



deep structure



do-support

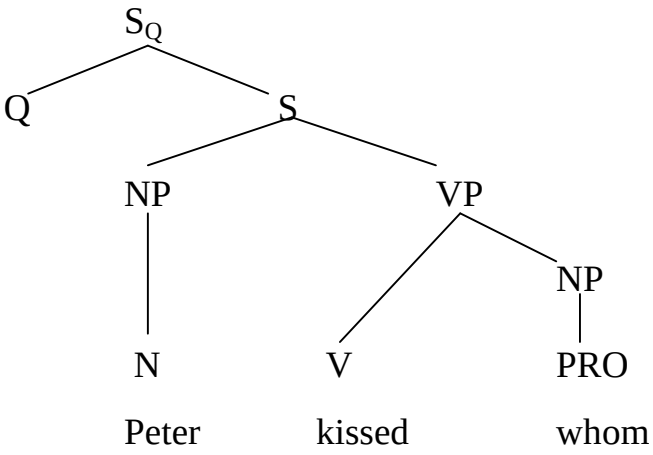


subj-aux inversion

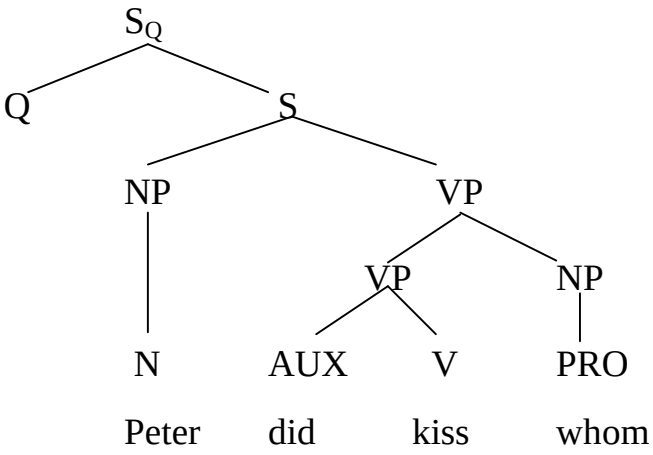
Do-support

In a sentence marked with Q, if the first verb is not an auxiliary, Chomsky-adjoin the dummy auxiliary ‘do’ to the left of the highest VP.

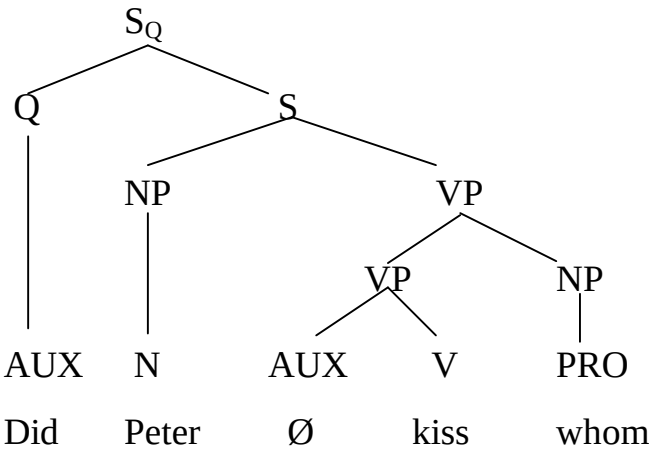
WH questions



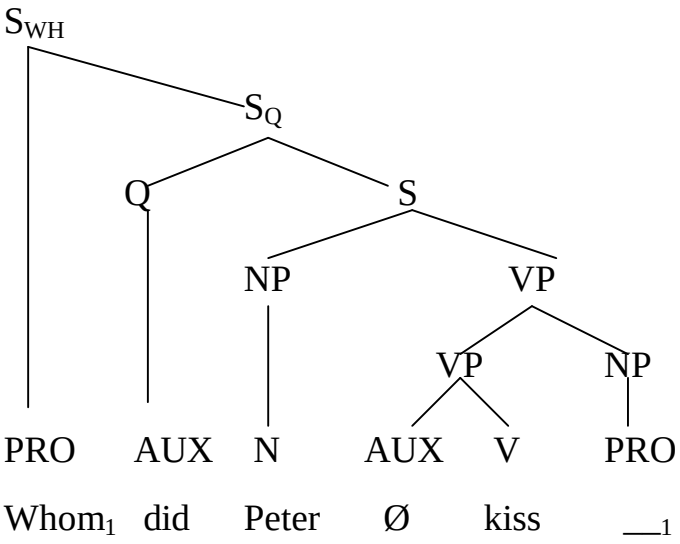
deep structure



do-support



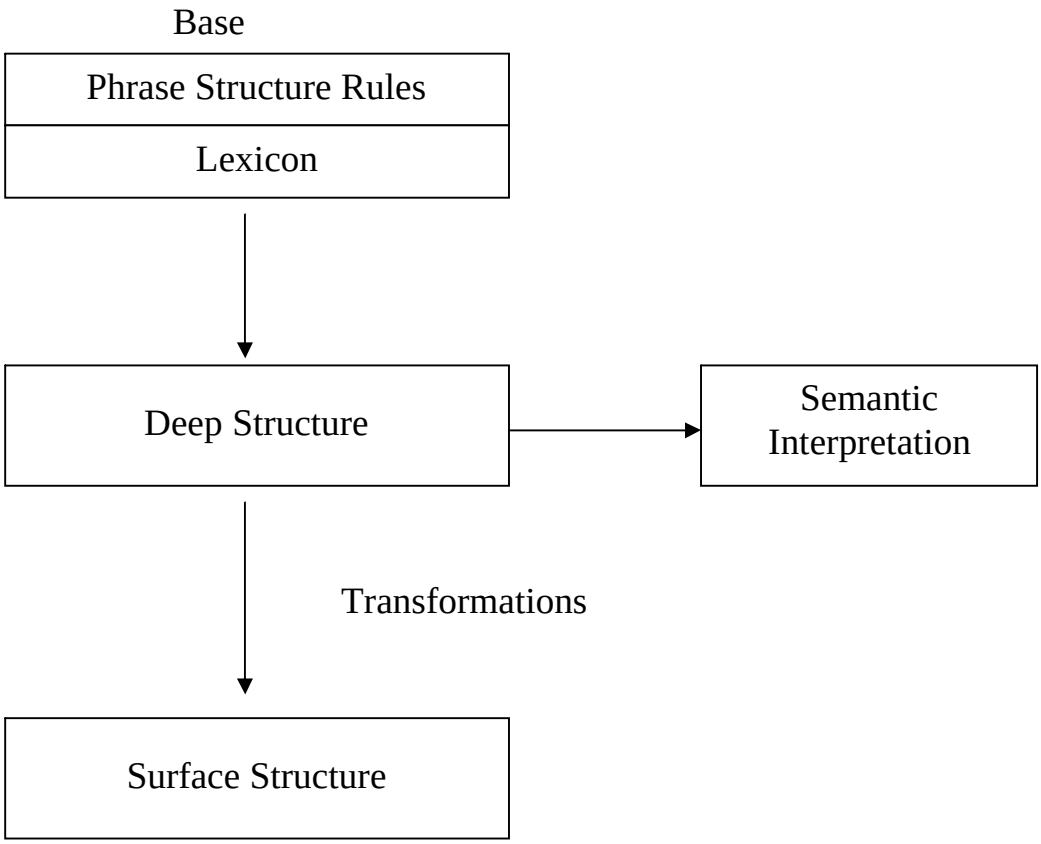
subj-aux-inversion



WH-Movement

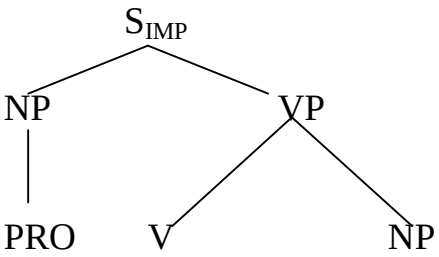
In a sentence marked with Q and containing a WH word, move the WH word to the beginning of the sentence and attach it to a newly created node S_{WH} dominating the entire sentence.

Aspect Model



1. Phrase structure rules derive the underlying structure
2. Once this structure exists, lexical items are inserted
3. Phrase structure rules and lexical insertion yield the deep structure
4. The deep structure provides the basis for semantic interpretation
5. The surface structure is derived from the deep structure by transformations

Imperatives

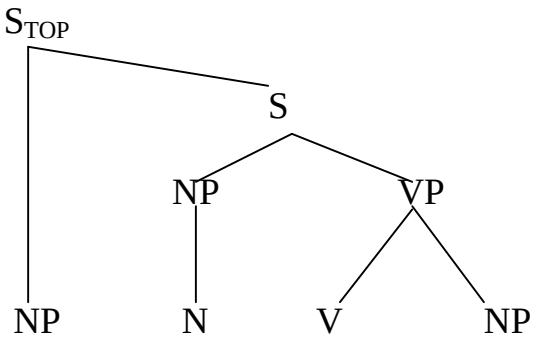


You close the door

Imperative deletion

In a sentence marked with IMP, delete IMP and the NP containing the second person subject.

Topicalization

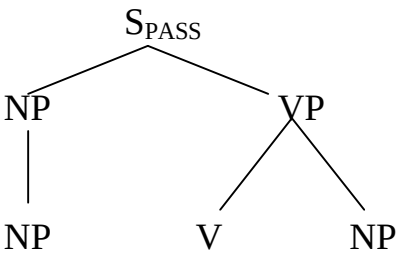


$Bananas_1$ Peter hates $\_\_{}_1$

Topicalization

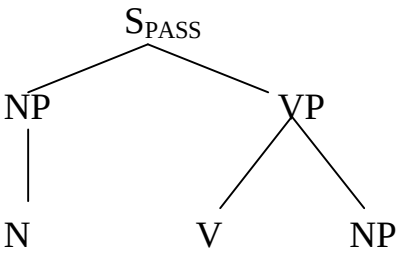
Move an NP to the beginning of a sentence and attach it to a newly created node S_{TOP} dominating the entire sentence.

Passive



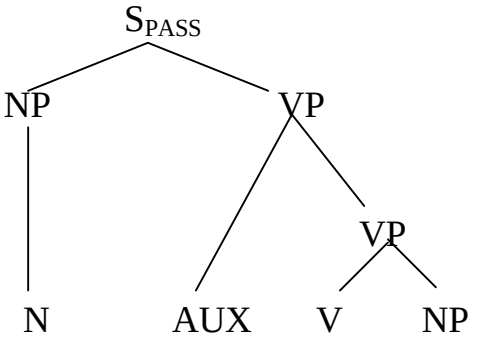
deep structure

The boy hit the girl



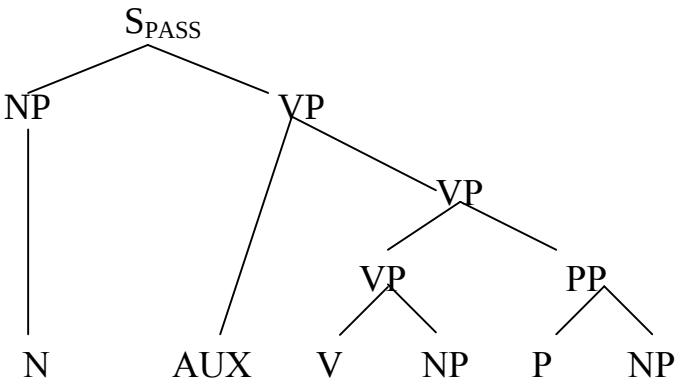
NP movement

The girl$_1$ hit __ $_1$



AUX inversion

The girl$_1$ was hit __ $_1$



‘by’ phrase insertion

The girl$_1$ was hit __ $_1$ by the boy

Passive

a. Replace the NP dominated by S through the NP c-commanded by V.
b. Chomsky-adjoin to the left of the lowest VP a V containing the passive auxiliary ‘be’.
c. Chomsky-adjoin to the right of one of the VPs a PP consisting of the P ‘by’ and the original NP dominated by S.

Pronominalization

Replace an NP by a personal pronoun; express the inherent sex features of the noun by the corresponding gender form of the pronoun (optional).

E.g. Peter > he
Mary > she
The book > it

Nominalization

Replace a verb by a corresponding nominalization (optional).

E.g. believe > belief
consider > consideration
play > player

Equi and raising

(1) Peter expected him to leave.
(2) Peter persuaded him to leave.

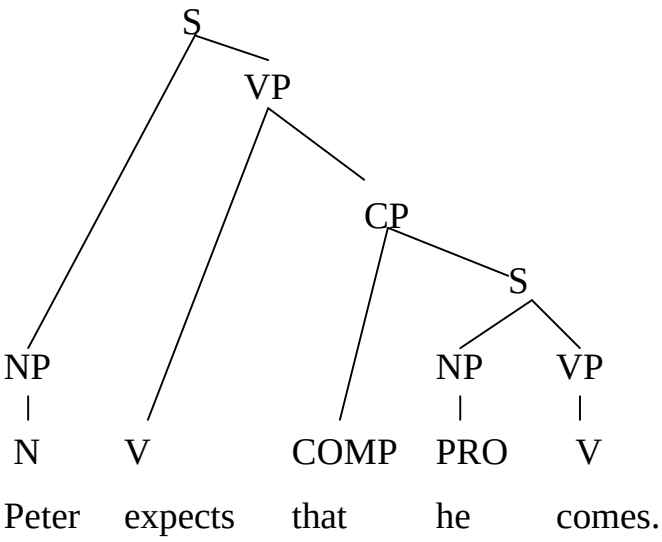
(3) a. Peter expected the doctor to examine the patient.
    b. Peter expected the patient to be examined by the doctor.
(4) a. Peter persuaded the doctor to examine the patient.
    b. Peter persuaded the patient to be examined by the doctor.

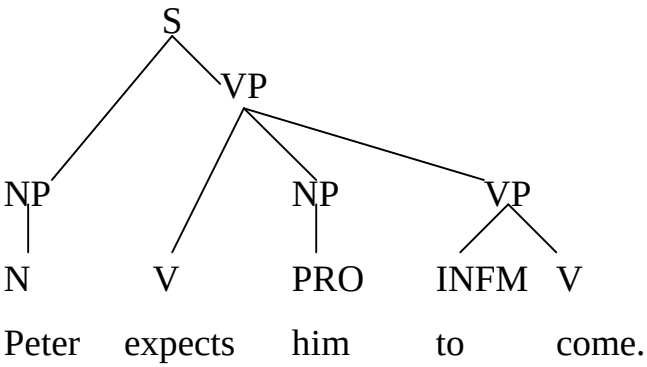
(5) AGENT expect EVENT
(6) AGENT persuade PATIENT EVENT

(7) Peter expected it to rain.
(8) *Peter persuaded it to rain.

(9) Peter expected that Mary will come.
(10) *Peter persuaded that Mary will come.

Subject-to-object raising



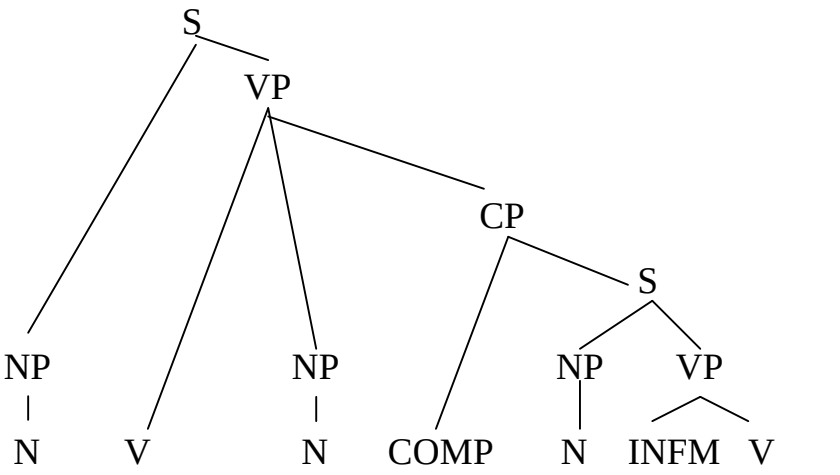


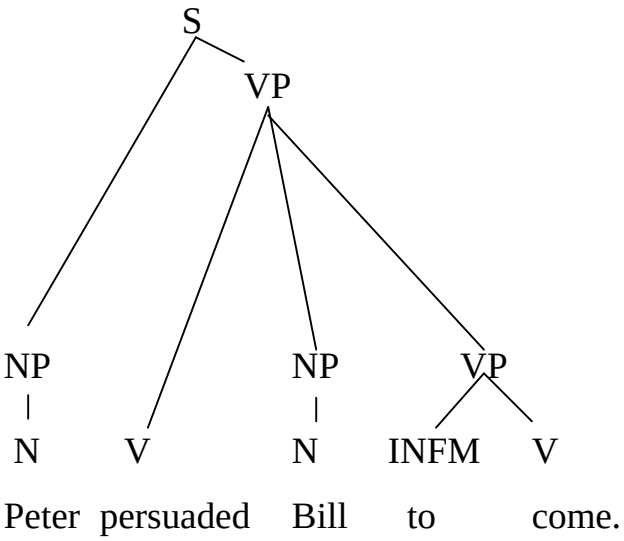
Subject to object raising

In a sentence containing a finite nominal clause

a. raise the subject of the nominal clause to the higher clause; change the case feature of the NP and attach it immediately to the VP dominating V.
b. transform the VP of the nominal clause into an infinite and attach the VP-infinitive to the VP dominating V.

Equi (Controll)





Equi

If the subject of a ‘for’ nominal clause is coreferential with the object of the higher clause delete the subject NP of the lower clause and change the CP to an infinitival VP.

Eager and likely

(1) John is likely to win.

(2) John is eager to win.

(3) It is likely for John to win.

(4) *It is eager for John to win.

(5) a.	It is likely that John will win.	Deep structure
b.	John is likely to win.	Surface structure

(6) a.	John is eager for John to win.	Deep structure
b.	John is eager to win.	Surface structure

Island constraints

1. Sentential Subject Constraint

Nothing can be moved out of a sentential subject

(1) a. That Bill loves what is obvious.
b. *What did that Bill loves __ is obvious.

2. Complex NP constraint

Nothing can be moved out of a complex NP (i.e. relative and nominal clauses)

(2) a. Mary noticed the man who said what? REL
b. *What did Mary notice the man who said __ ?
(3) a. Mary believes that John ate what? COMP
b. ?What does Mary believe that John ate __ ?

3. Coordinate structure constraint

Nothing can be moved out of a coordinate structure.

(4) a. Peter talked to Mary and who?
b. *Who did Peter talk to Mary and __ ?

Rule ordering

(1) a. It seems that the car hit the man.
b. It seems that the man got hit by the car. passive
c. The man seems to got hit by the car. Subj-to-subj raising

(1) a. It seems that the car hit the man.
b. The car seems to hit the man. Subj-to-subj raising
c. <cannot be applied> Passive