Wh-Movement

K. Srikumar
Department of Linguistics
University of Lucknow
MA Sem II, Paper II

Questions

1. What did Sonu eat?
2. When did Sonu meet you?

   Information questions in English require Information seeking question words in the Preclausal position.

   Information seeking words in English begin with Wh sequence, so they are known as Wh-words and the questions they form, as Wh-questions.

   In several languages question words stay in their argument positions.

   They are said to be wh-in-situ languages. Hindi, Japanese, Korean etc.

3. raam ne kisko dekhaa

Yes-No question

3. Is John doing fine?

4. Will John see you tomorrow?

   These are known as yes-no Questions because they are expected to be answered in either yes or no.

They interrogate the following assertions.

- 5. John is doing fine
- 6. John will see you tomorrow.

Cont…

- Yes-no questions formed by preposing the auxiliary verbs before the Subject, if the sentence has one of it.

- Otherwise a dummy auxiliary verb DO is inserted and subjected to the same

- 7. John met you yesterday

-        =>**Do-insertion** =>

- 8. Did John meet you eysterday
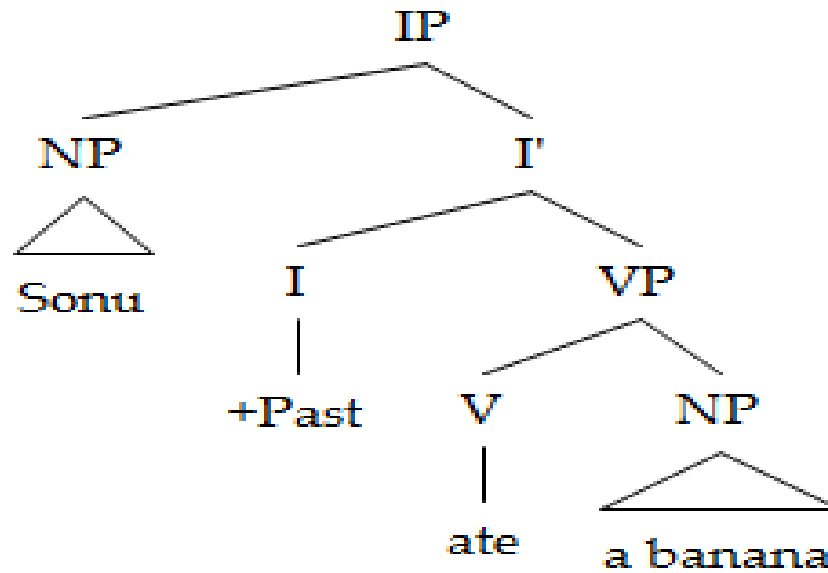
-   The process is known as **Subj-Aux inversion**

Derivation of Wh-questions

- Consider the question repeated again as(9)
- 9. What did Sonu eat?
- The verb **eat** is a transitive verb with the theta grid showing it to be dyadic in valency:
- Eat: V; 1   2
-           NP   NP
- See the simple sentence with the verb **eat**:
- 10. Sonu eat a banana

Cont…

- Question 9 is the interrogative corresponding to the statement 10.

- Verb **eat** is Subcategorized to have a complement NP in its VP
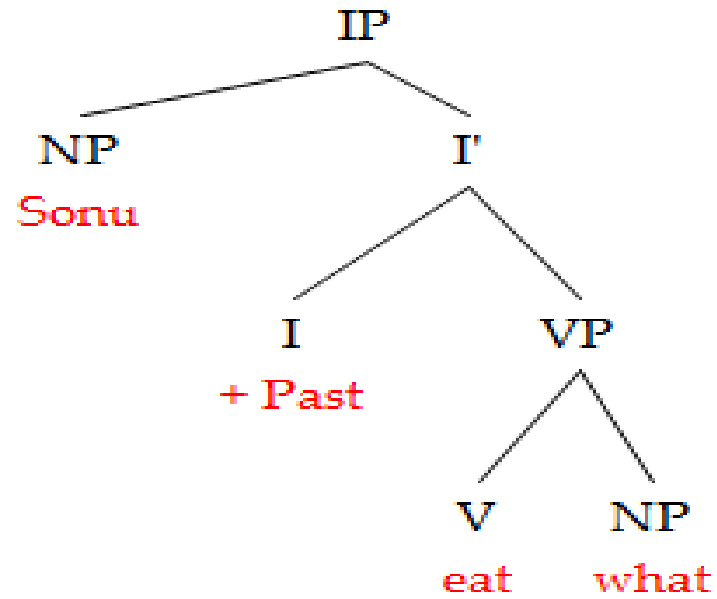
Structure

Rationale for Wh-movement

- The question in 9 has the verb **eat** but the verb appears not to have a complement NP following it.

- So the question ought to be ungrammatical, i.e. given subcategorization requirement, but surprisingly it is not.

- However, native speakers intuitively know the preclausal question word **what** to belong to the position after the verb **eat**

Cont…

- Chomsky's proposal to capture this intuition of native speakers postulates a D-structure representation for the question obeying the argument structure and subcategorization requirements of its verb

D-Structure

Wh-movement

- Given the D-Structure representation, a movement transformation is posited displacing the question word **what** from the complement position of the verb to the preclausal position.

- The Transformation is Wh-movement transformation.

- It is obligatory if the sentence is to receive an interpretation as question.

Nature of Preclausal position?

- Indirect questions in several languages including Middle English, show wh-words targetting the pre-complementizer position.

- 11 a.   Men shal wel knowe who that I am

    'Men will know well who I am'

    (Caxton, 1485:cited in Haegeman(1994:383) from Lightfoot, 1979)

    Bavarian

    b.   I woass ned *wer dass* des toa hod.

    'I know not who that that done has 'I don't know who did that.'

    (Bayer, 1983: 212)

Contd…

- Indirect questions in several languages including Middle English, show wh-words targetting the pre-complementizer position.
- 11 a.   Men shal wel knowe who that I am

    'Men will know well who I am'

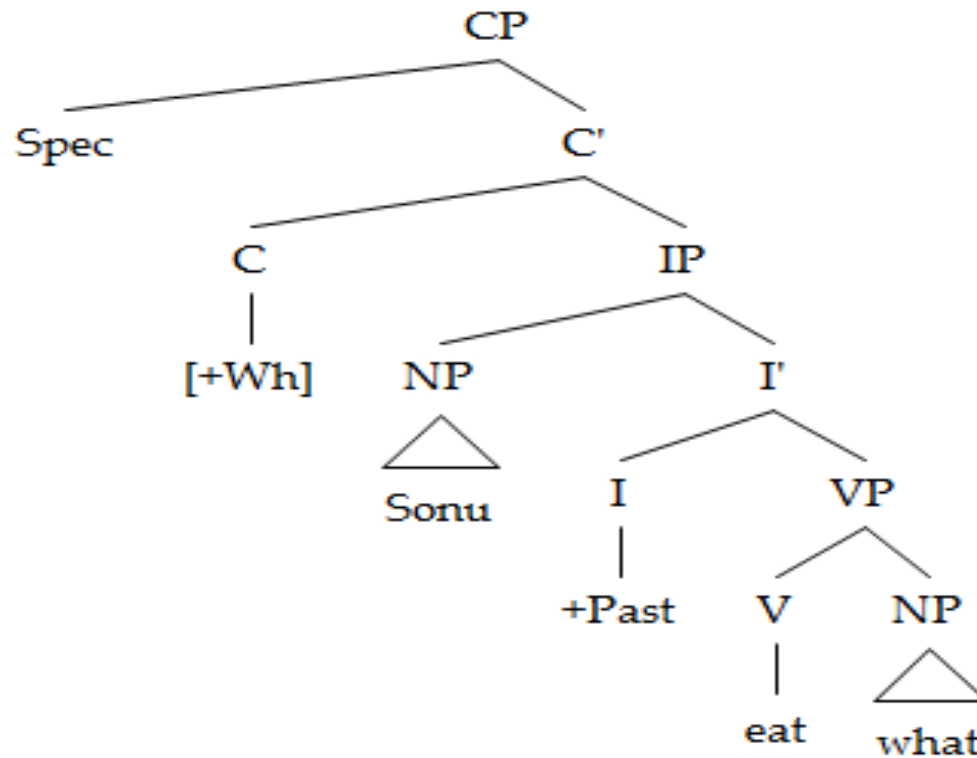   (Caxton, 1485:cited in Haegeman(1994:383) from Lightfoot, 1979)

    Bavarian

    b.   I woass ned *wer <u>dass</u>* des toa hod.

    I know not who that that done has

    'I don't know who did that.'

                                        (Bayer, 1983: 212)

..Spec,CP

- Contemporary Belfast English retain this pattern:
- C. I wonder which dish **that** they picked
  - (Henry, 1995)
- Under X-bar theory assumptions the pre-complementizer could be [Spec, CP]
- In present day English both elements in CP not permitted simultaneously because of a bar against Doubly filled CP:
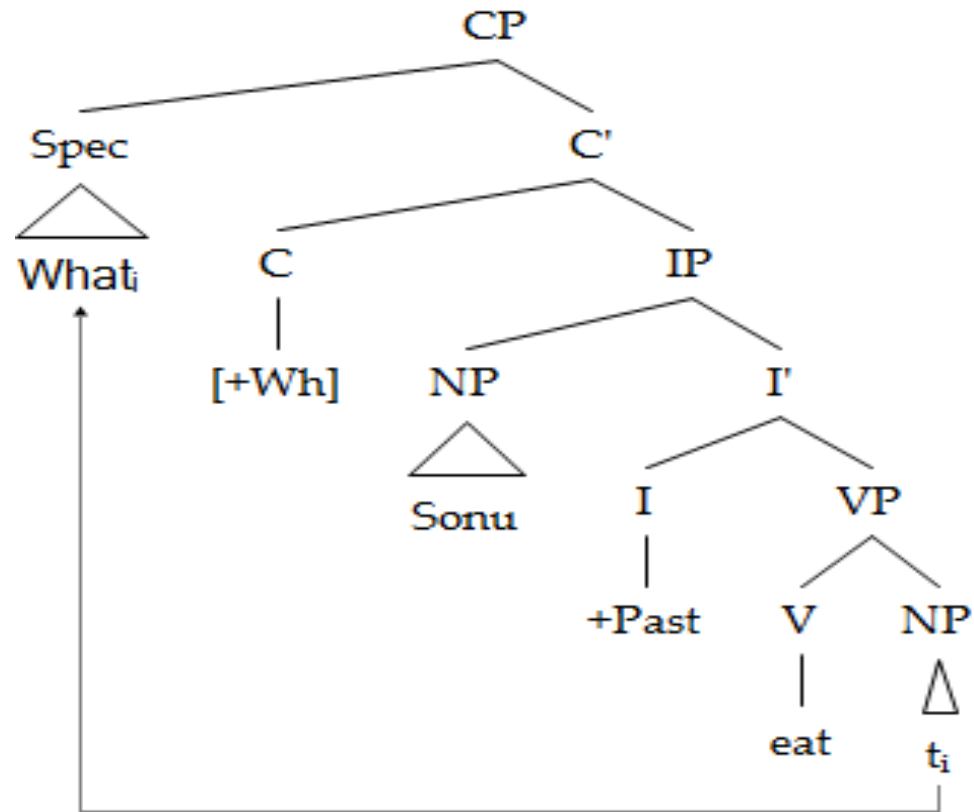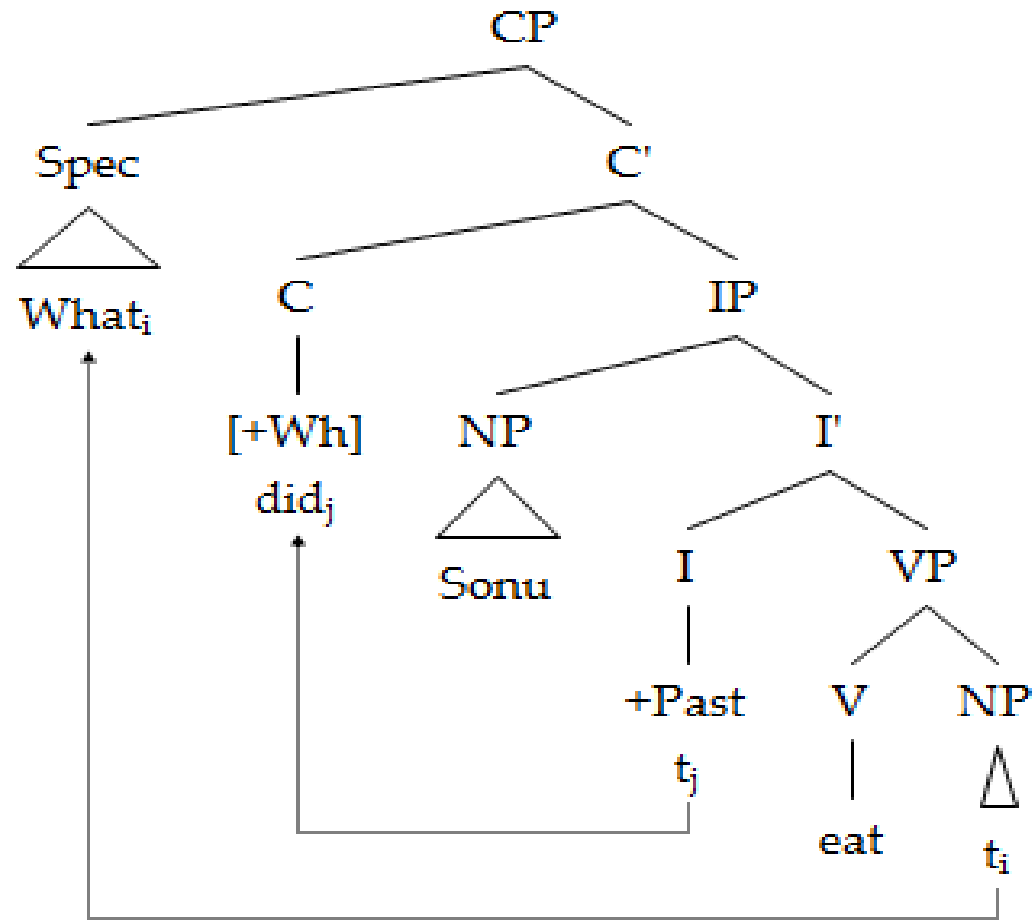- D. * A Doubly filled CP Filter: *[CP [Spec wh..][C COMP]]

D-S for the Wh-question

Cont…

- The D-S representation would have C marked as [+wh], i.e. a question.
- But merely moving wh-element leaving a coindexed trace in its D-S position would not suffice.
- In non-Subject Wh-questions in English, we need to have Sub-Aux inversion too.
- Since no overt Aux is there in the sentence, the dummy aux is inserted in INFL node and raised to C, an instance of head to head movement obeying Structure preserving hypothesis.

Output of Wh-movement

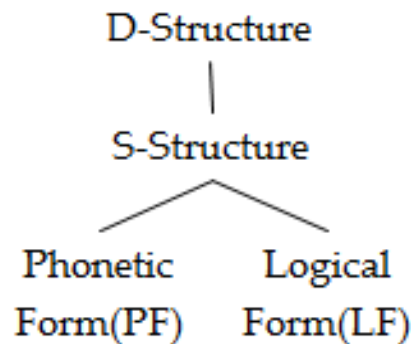# S-Structure

Wh-movement: Properties

- [Spec, CP] is a non-argument position denoted as A-bar position, and its trace is in an argument position
- Wh-trace is A' bound.
- The wh-trace is in a case marked position, i.e. case marked by its governing element, here the verb. And is said to be a variable.
- The Wh-antecedent is an operator ranging over a variable i.e its trace.
- i.e. Interpretation of What: Which X, X a variable ranging over different things.
- Who: Which X, X a variable ranging over persons

Contd..

- The moved Wh-word receives its case being in the chain consisting of the wh-antecedent and Its coindexed trace i.e. [what$_i$, t$_i$]

T-model of grammar

- The Wh-expressions receive their interpretation at Logical Form.

- The T-Model of Grammar (Chomsky and Lasnik, 1977)

D-Structure
|
S-Structure

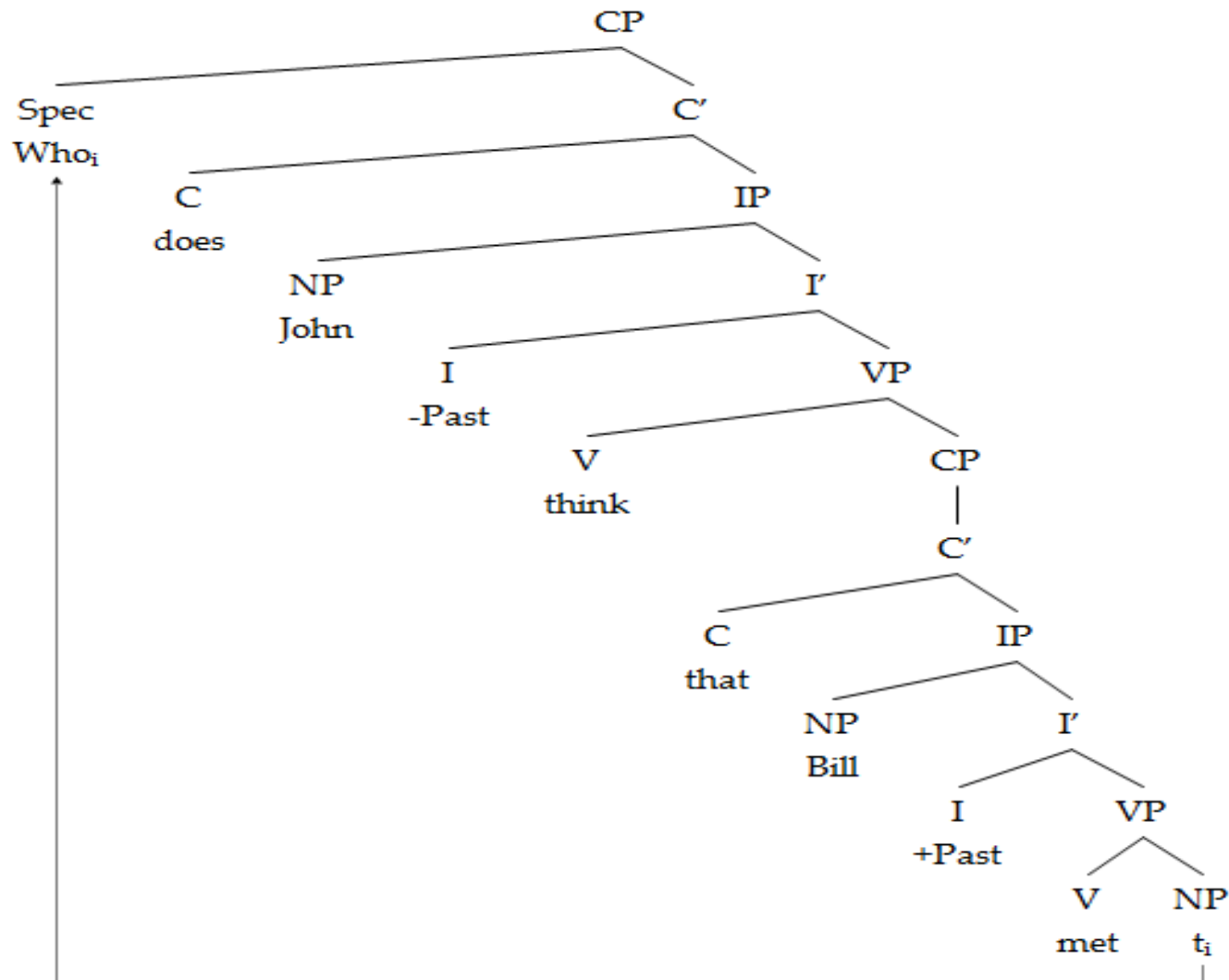Phonetic   Logical
Form(PF)   Form(LF)

Does Subject Wh-words move?

- Subject Wh-phrases: do they move?
- 12. Who met you yesterday
- Overtly no evidence for movement
- In general, wh-words move spec, CP
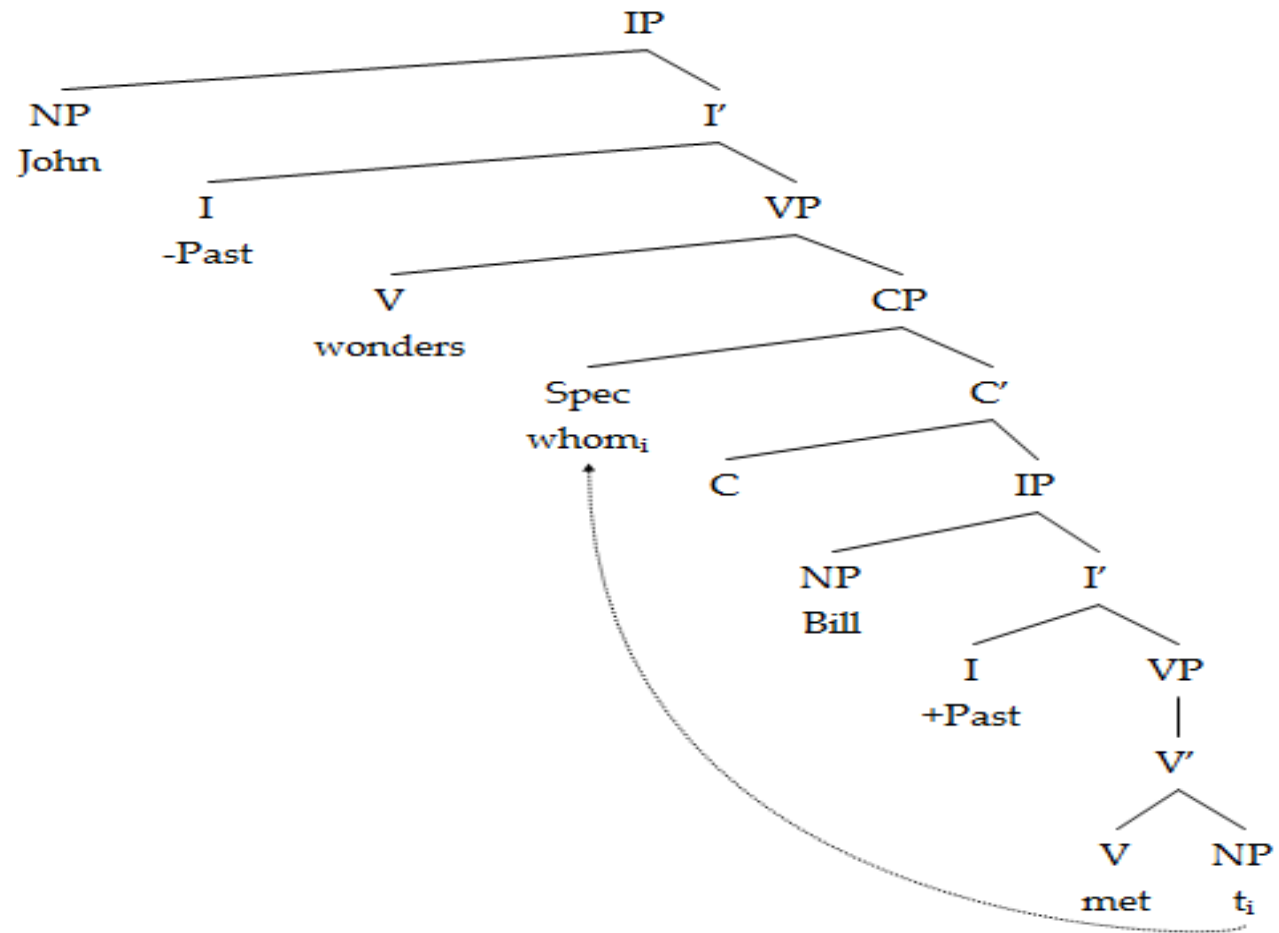- So the null hypothesis, Subject Wh-phrase too assumed to move to Spec, CP

Long distance wh-dependency?

- Types of Wh-movement
- Short vs Long distance wh-movement
- 13. Who does John claim that Bill saw?
- 14. John wonders what Bill bought?
- 15 *Why does John wonder what Bill bought?
- 16. ?What does John wonder who bought?
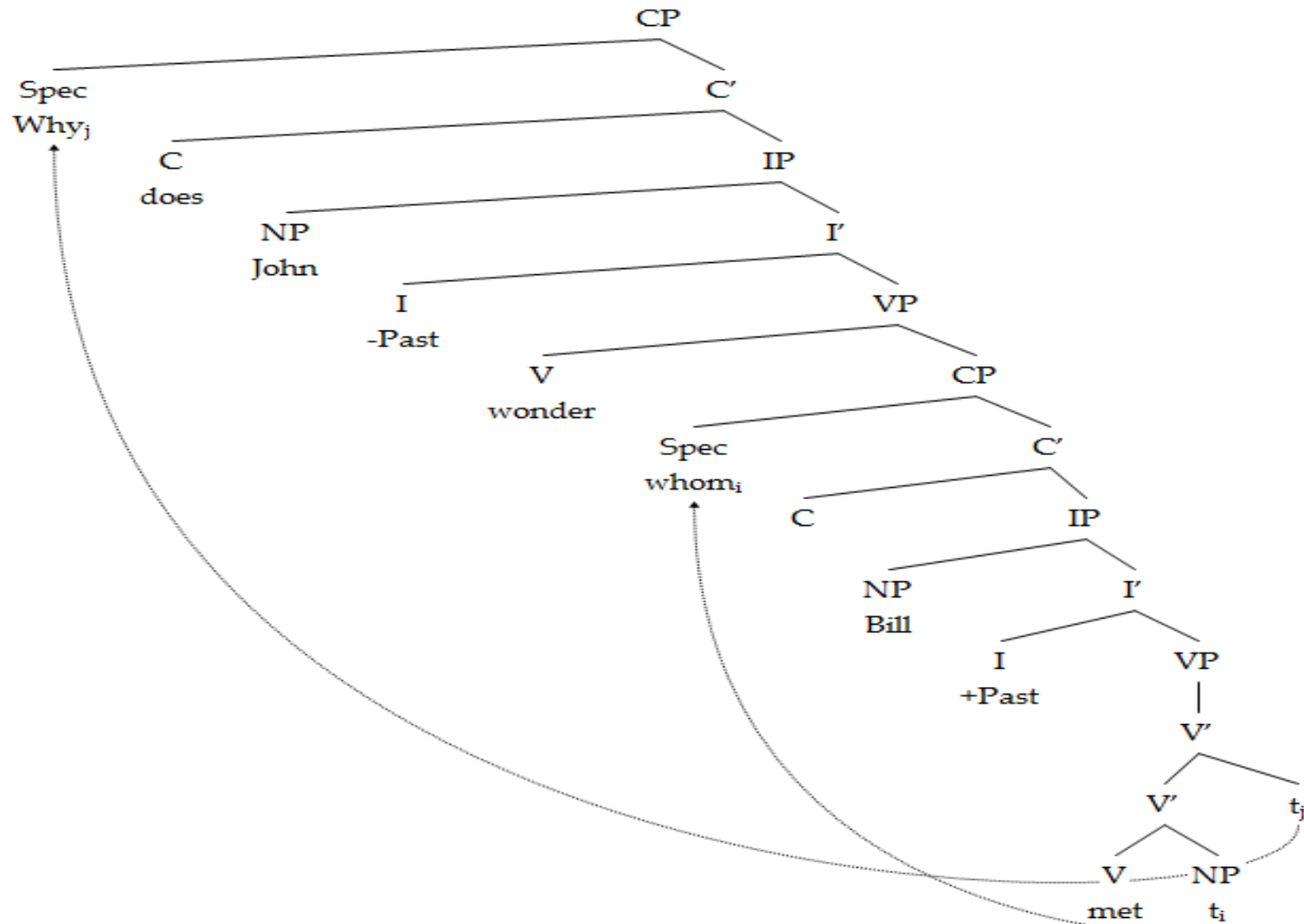- How does Long distance wh-movement take place ?
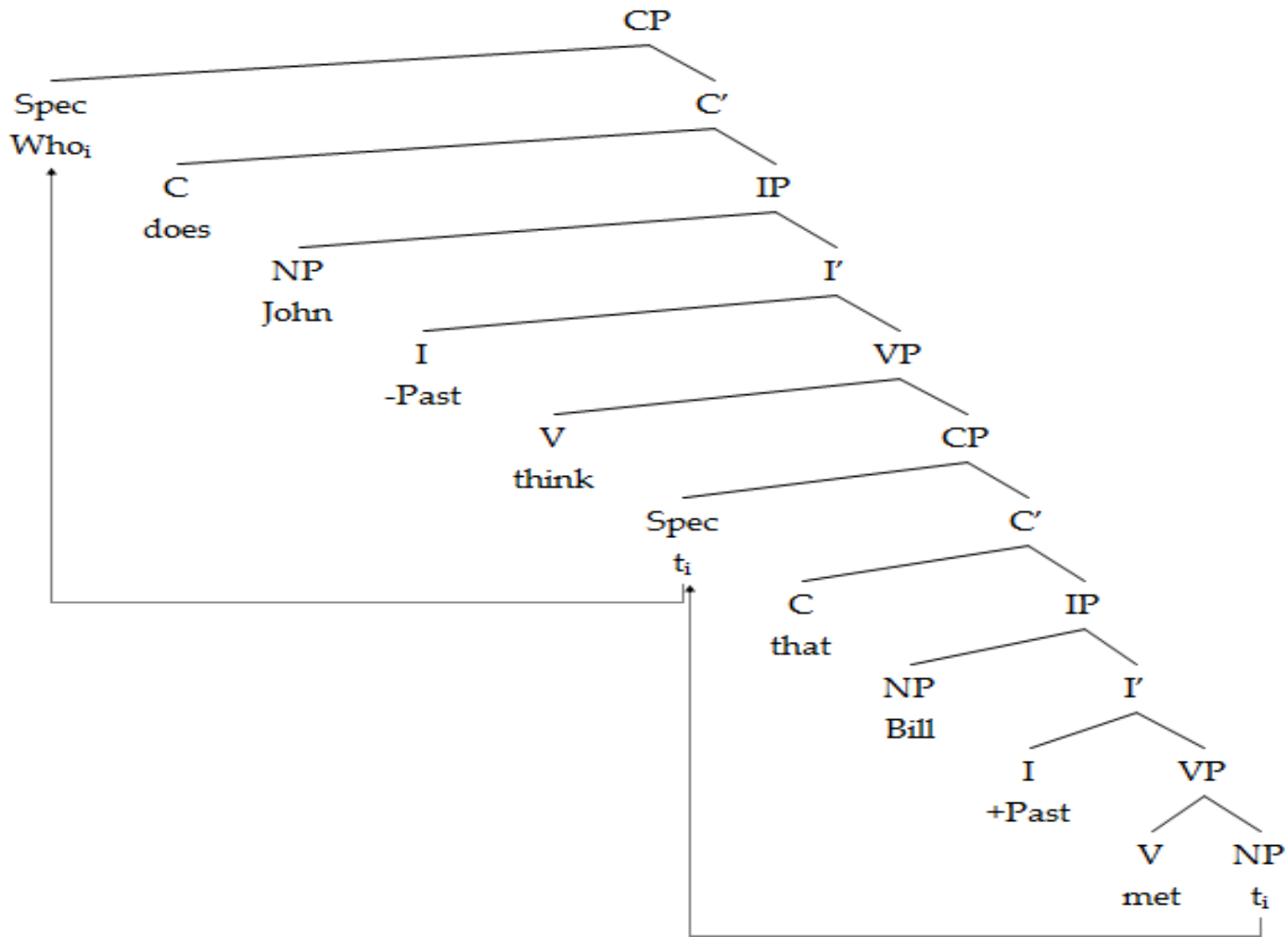- Single leap?
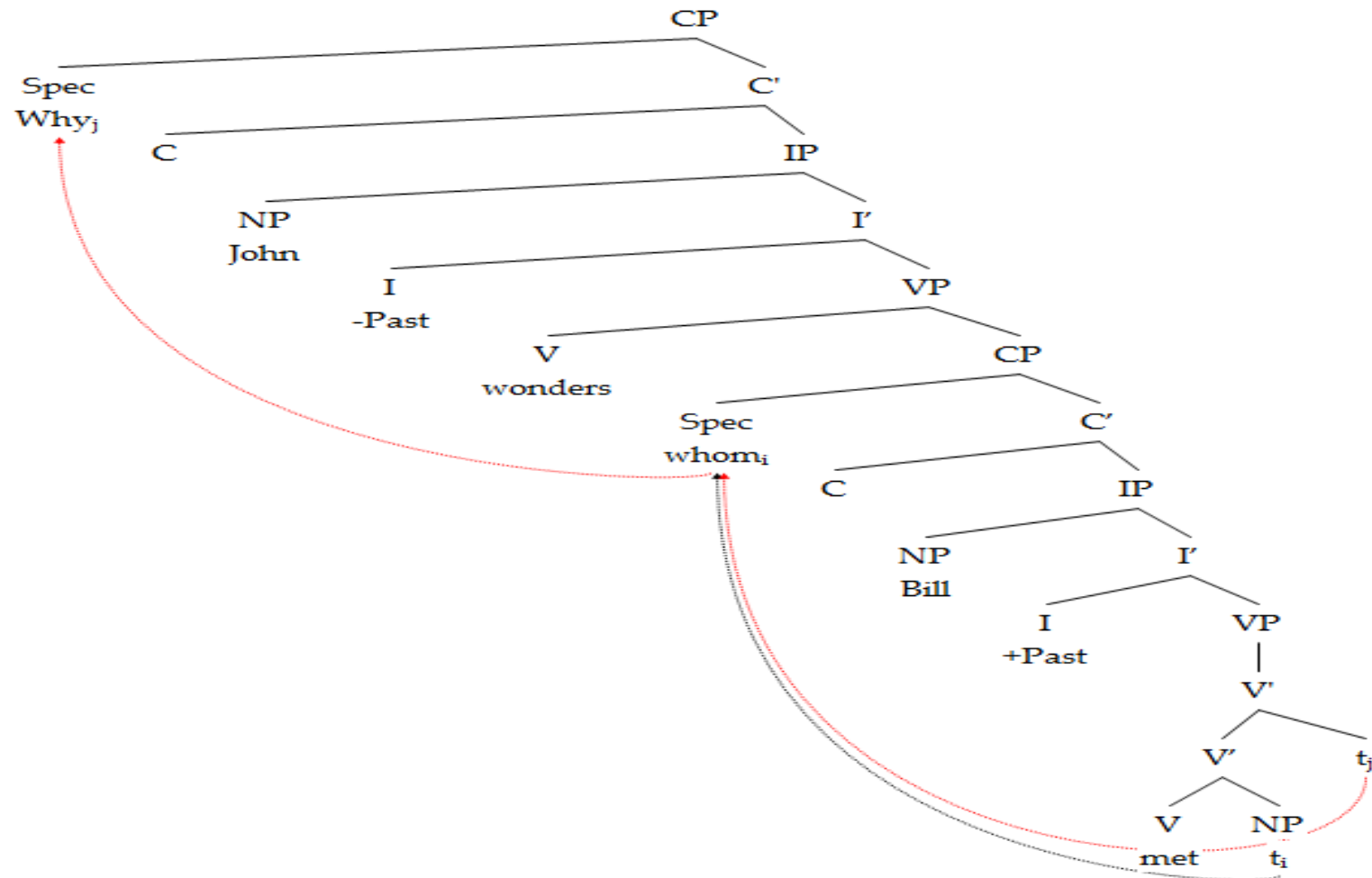
Single leap?

Indirect question

Wh-island
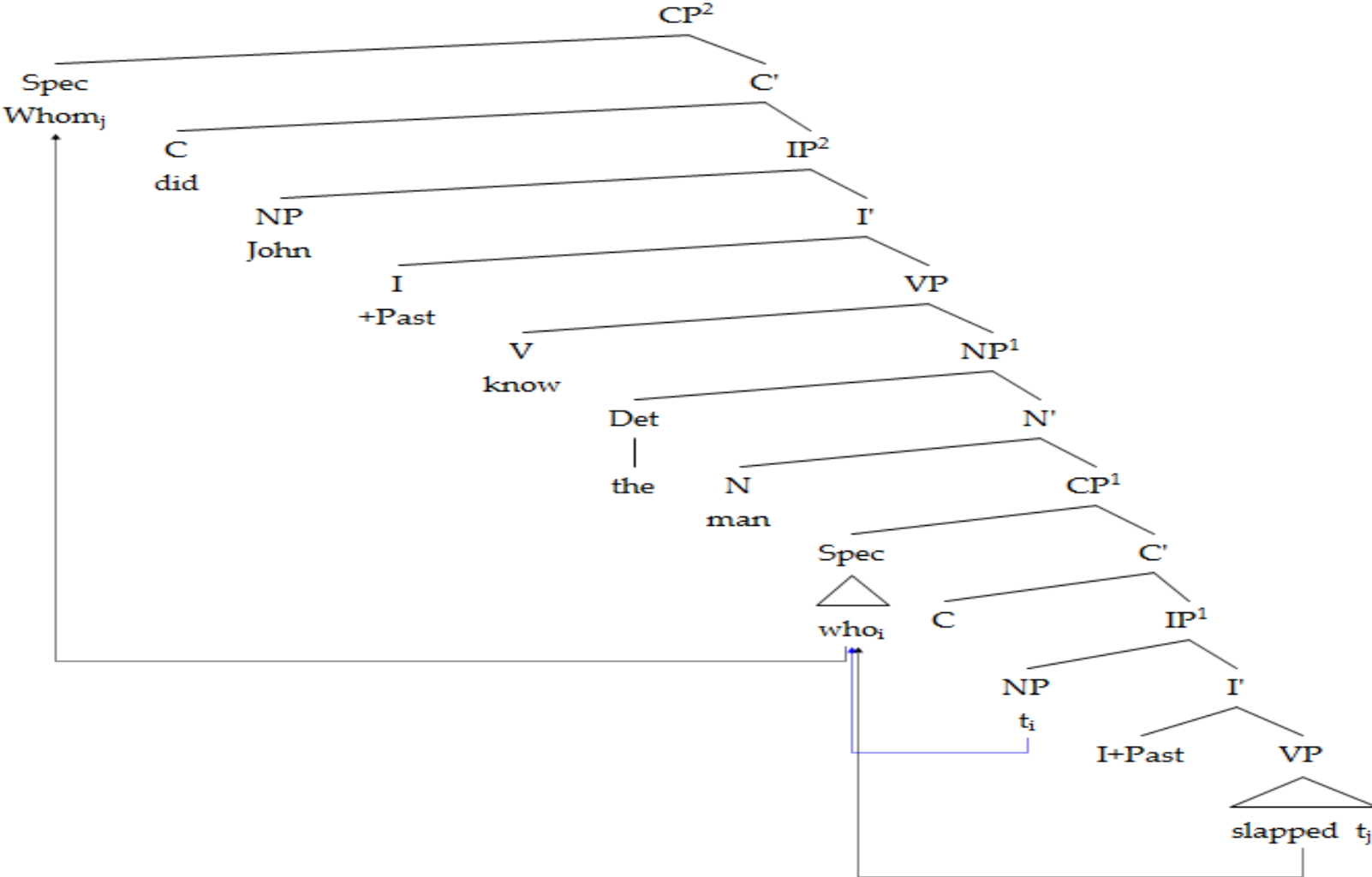
Successive Cyclic movement
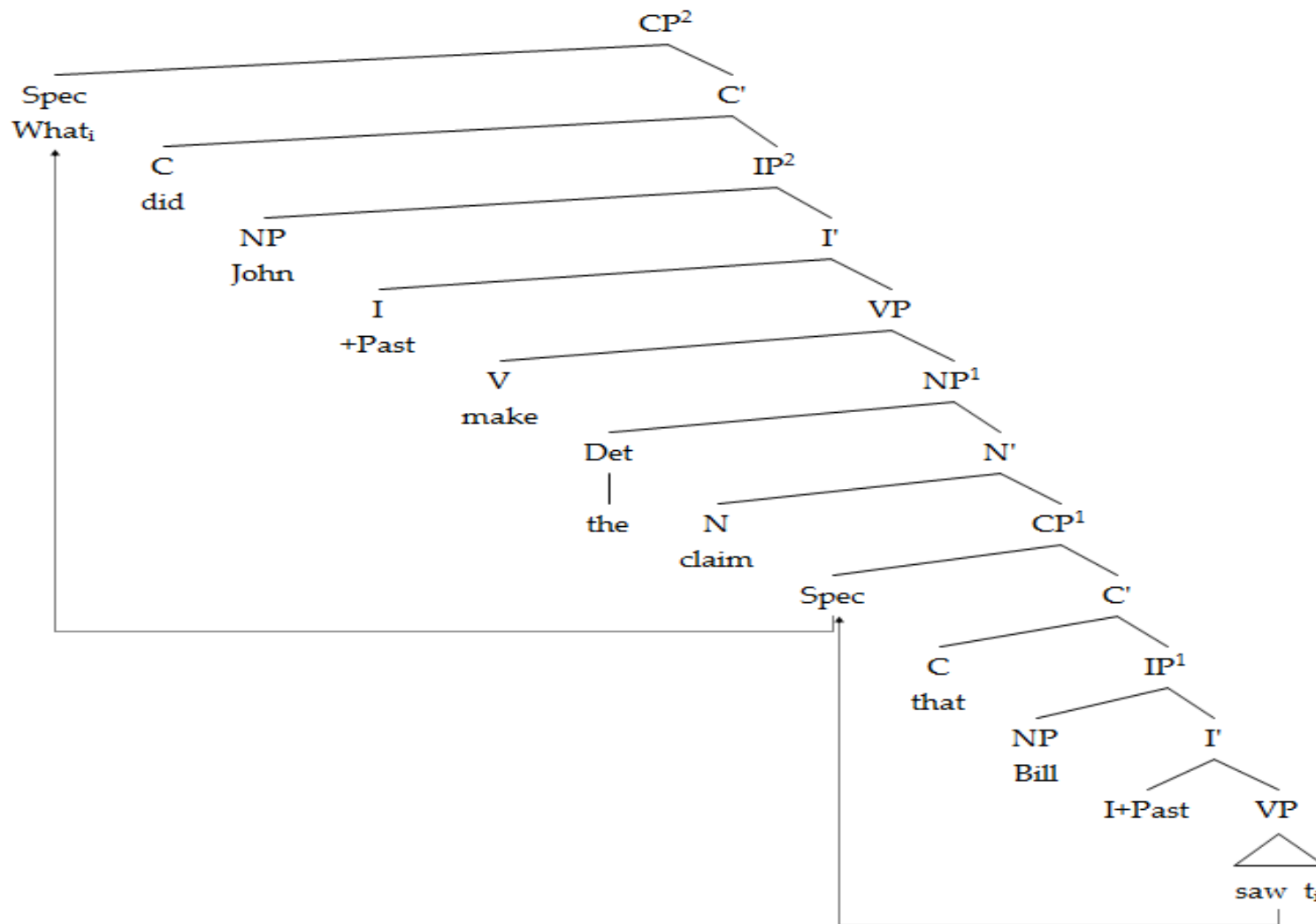
Wh-island violation: non-subjacent movement

Subjacency Condition

- Subjacency:
  Movement can not cross more than one bounding node in each cycle, where bounding nodes are IP and NP

- Subjacency accounts for Ross'(1967) Constraints.

- Complex NPs

- 17a. *What did John make the claim that Bill
  saw?

-     b. *Whom did John know the man who
  slapped?

Extraction from Relative clause

CP^2

Spec
Whom$_j$

C'

C
did

IP^2

NP
John

I'

I
+Past

VP

V
know

NP^1

Det

N'

the

N
man

CP^1

Spec

who$_i$

C'

C

IP^1

NP
t$_i$

I'

I+Past

VP

slapped t$_j$

Wh-extraction: Noun Complement Clause

Pied-piped Wh-movement

- 18 a. To whom did John give a book?
-       b. Whom did John give a book to?
- Sometimes Wh-movement could pull along additional material, yielding what is known as pied piped movement.
- Wh-extraction from PPs in English permits pied-piping of PP or the preposition may be left behind i.e. stranded.
- Language differs respect to this option. In French, preposition stranding is not permitted.

Motivations for Wh-trace

- i. **Theta criterion and projection principle**
- 19. What do you think that John borrowed from Bill?
- **Agreement and Binding**:
- 20 a. John thinks that these students are fast learners/*learner
- 20 b. Who$_i$ do you think [t$_i$ are fast learners/* learner]?
- 21 a. John thinks that the boys have left the party together
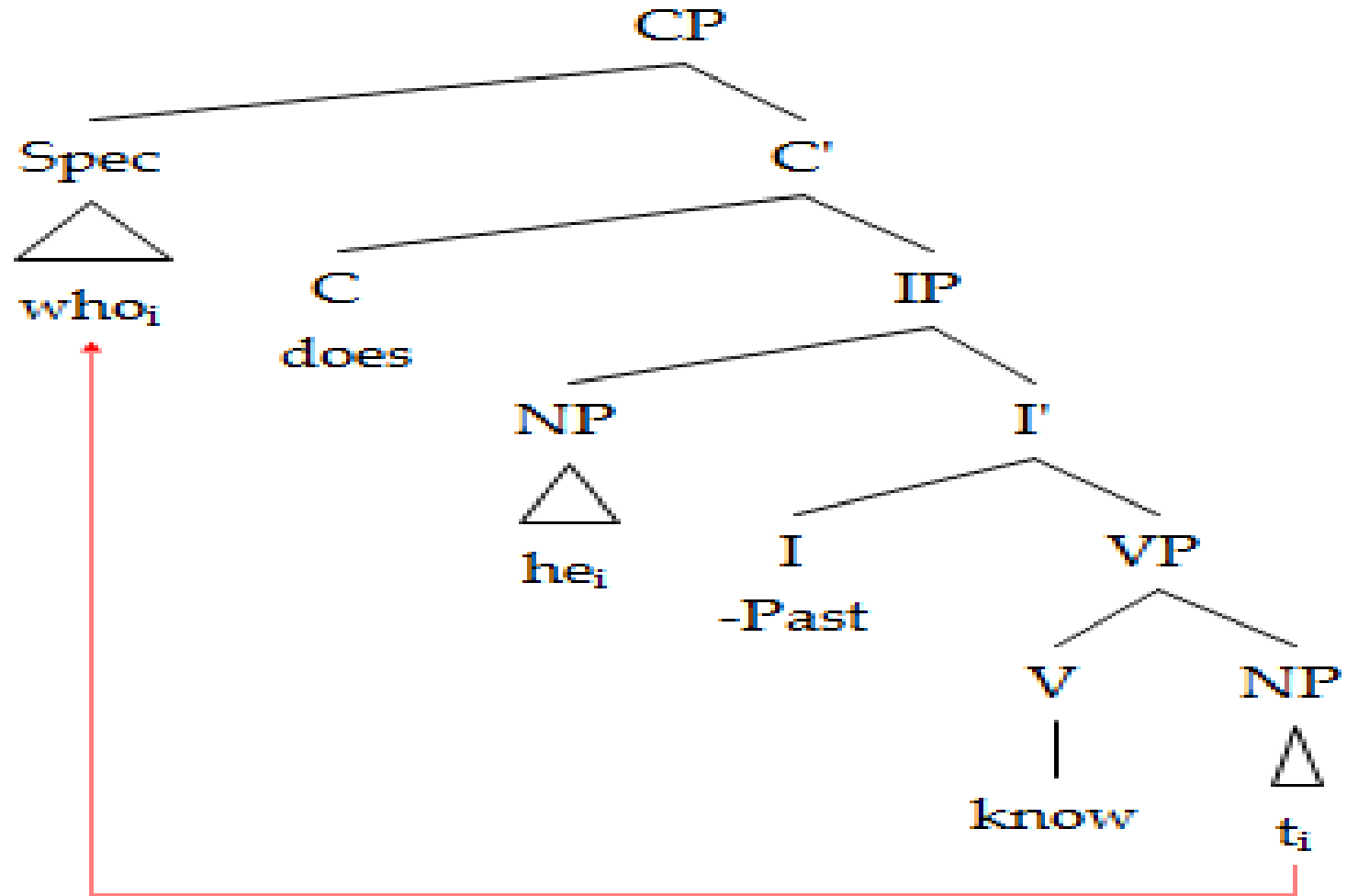- 21 b. Which boys$_i$ do you think [t$_i$ have left the party together]?

Cont…

- 22 a. John thinks Sam hated him
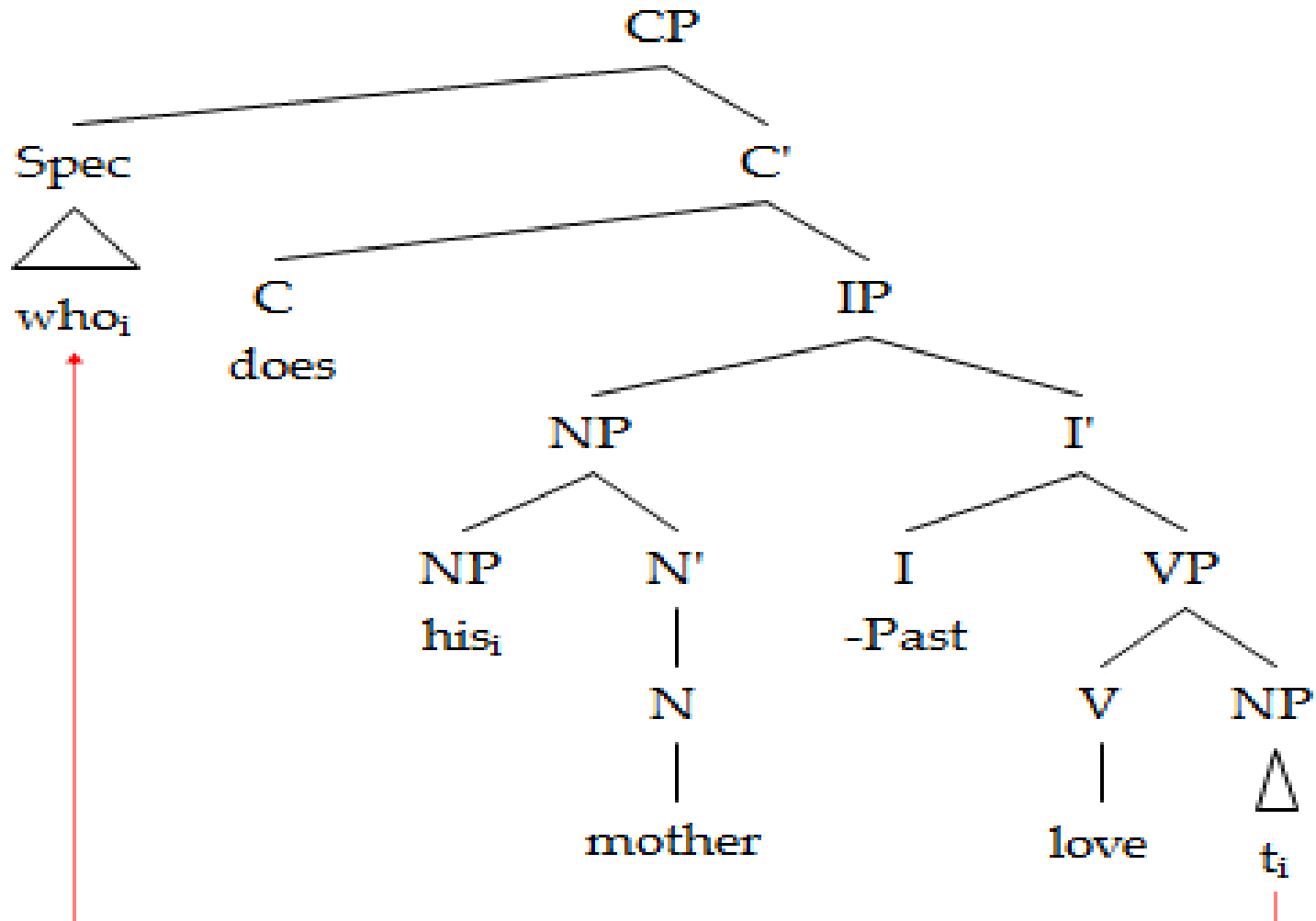- 22 b. Who$_i$ does John think [t$_i$ hated him]?

Crossover effects

- **Strong Crossover**
- 23 a. *Who$_i$ does he$_i$ think t$_i$ left?
-     b. *Who$_i$ does he$_i$ know t$_i$ here?
- **Weak Crossover**
- 24 a. Who$_i$ loves his$_i$ mother?
-     b. *Who$_i$ does his$_i$ mother love t$_i$?
- **Leftness Condition**
- A wh-trace must not be coindexed with a pronoun to its left.
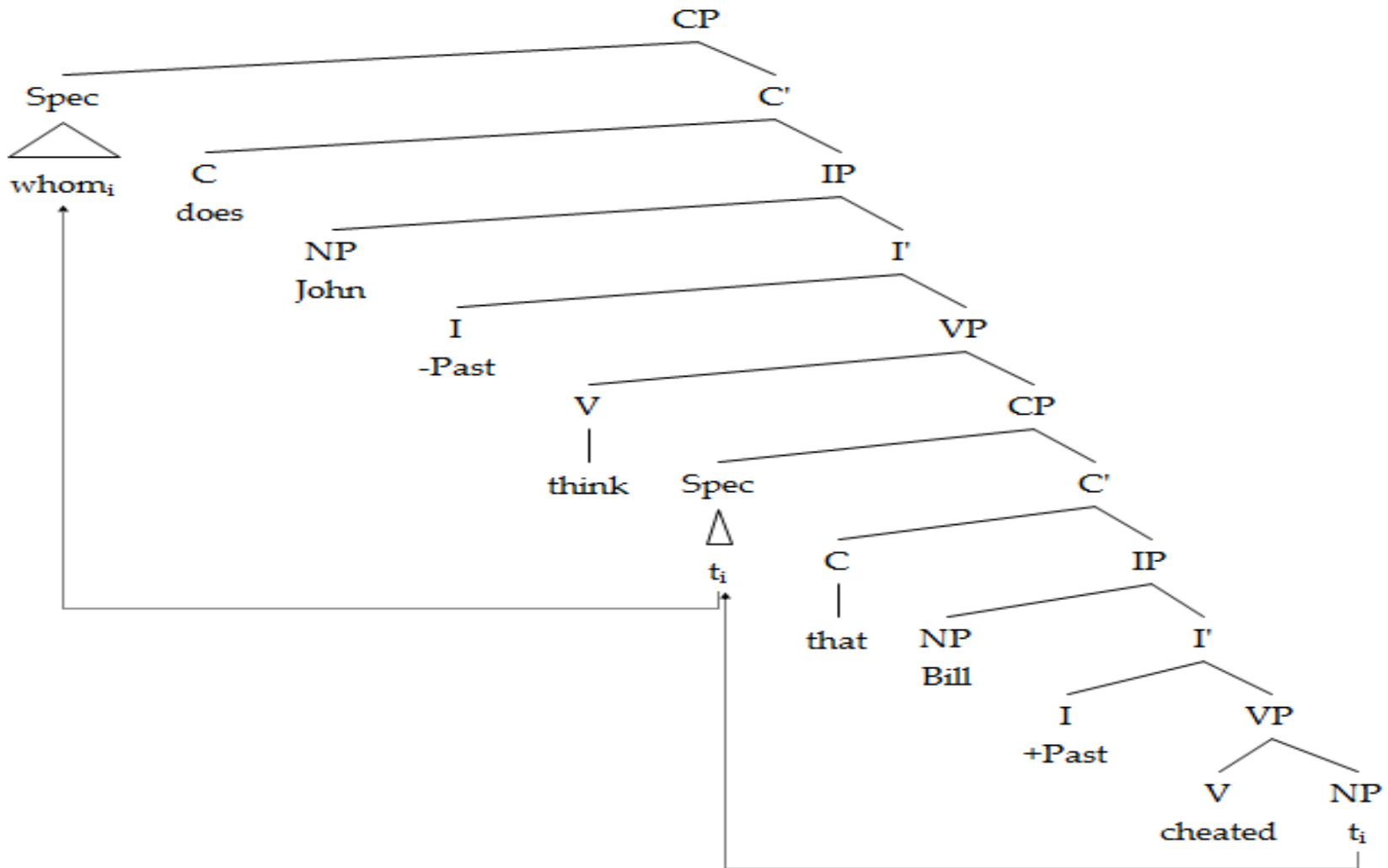
Strong Crossover

Weak Crossover

That-trace Filter

- **Subject-Object Asymmetry**
- 25 a. Whom$_i$ does John think [$_{CP}$ t$_i^1$ that [$_{IP}$ Bill
        cheated t$_i$ in a game of chess]]?
  b. Whom$_i$ does John think [$_{CP}$ t$_i^1$ [$_{IP}$Bill cheated
        t$_i$ in a game of chess]]?
  c. *Who$_i$ does John think [$_{CP}$ t$_i^1$ that [$_{IP}$ t$_i$ cheated
        David in a game of chess]]]]?
  d. Who$_i$ does John think [$_{CP}$ t$_i^1$ [$_{IP}$ t$_i$ cheated
        David in a game of chess]]]]?

  That trace Filter: *That-trace

S-S representation for Long move of Object wh-phrase

S-S representation for Long move of Subject wh-phrase

Formal Licensing of Traces

- Traces are governed
- But Traces must be governed in a special way to licence them, i.e. Proper Governed
- Two types of Government: Theta Government and Antecedent Government
- Governors: heads and coindexed maximal projections

ECP

- **Empty Category Principle**
- Traces must be properly governed
- A governs B if and only if A theta governs B or A antecedent governs
-   (Chomsky 1986:17)
- **Theta Government & Antecedent Government**
- A theta governs B iff A governs B and theta marks it and A antecedent governs B iff A governs B and A is coindexed with B.
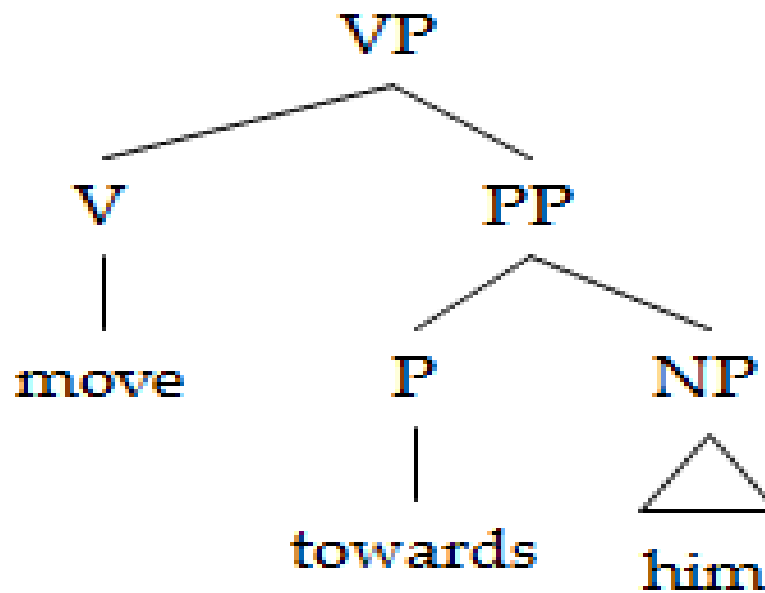
Government integrated

- **Government**
- A governs B iff
- A is a governor;
- A m-commands B;
- No Barrier intervenes between A and B;
- Minimality is respected.
- Where governors are:
- a. heads and
- b. Coindexed XPs.

Minimality

- **Minimality**
- A governs B iff there is no node Z such that
- (i)   Z is a potential governor for B;
- (ii) Z c-commands B;
- (iii) Z does not c-command A.
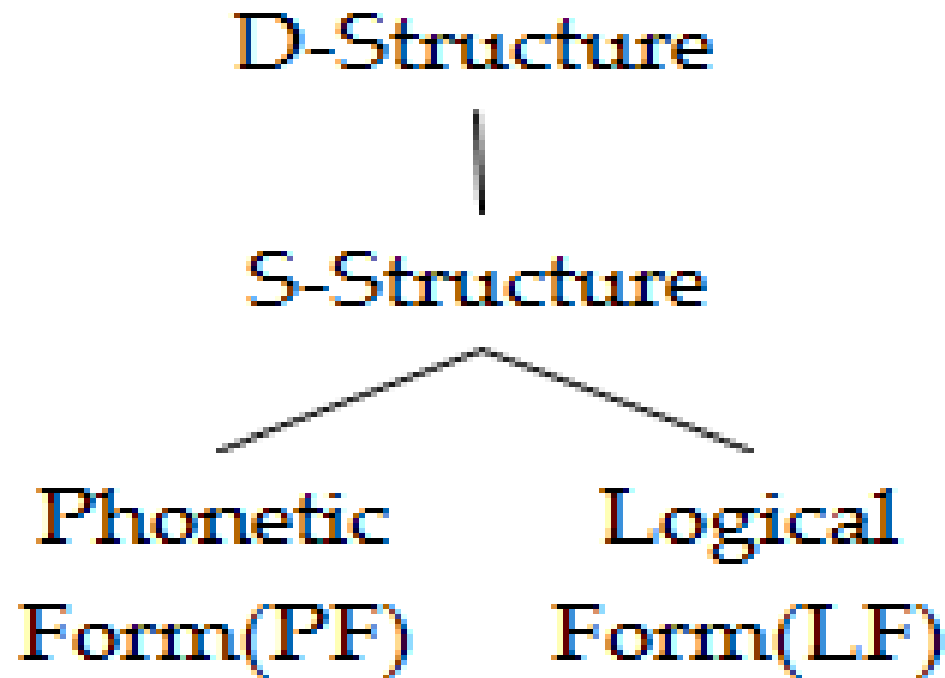
What minimality predicts?

Cont...

26 a. Who$_i$ does John think [$_{CP}$ t$_i$^{1} [$_{IP}$ t$_i$ cheated David in a game of chess]]]]?

b. *Who$_i$ does John think [$_{CP}$ t$_i$^{1} that [$_{IP}$ t$_i$ cheated David in a game of chess]]]]?

c. Why$_i$ does John think [$_{CP}$ t$_i$^{1} [$_{IP}$ Bill cheated David t$_i$ in a game of chess t$_i$]]]]?

d. Why$_i$ does John think [$_{CP}$ t$_i$^{1} that [$_{IP}$ Bill cheated David in a game of chess t$_i$]]]]?

Argument-Non-argument Asymmetry

- Subject and object – Arguments
- Adjuncts – Non-Arguments
- Lasnik and Saito (1984): Treat this as Argument-non-Argument Asymmetry
- They propose Gamma marking for checking observance of ECP by traces.
- Gamma marking must apply by S-S for arguments and by LF for non-arguments

T Model of Grammar

D-Structure

|

S-Structure

Phonetic
Form(PF)

Logical
Form(LF)

LF-Representation

27 a. Who$_i$ does John think [$_{CP}$ t$_i^1$ [$_{IP}$ t$_i$ cheated
[+ϒ]
        David in a game of chess]]]]?

   b. *Who$_i$ does John think [$_{CP}$ t$_i^1$ that [$_{IP}$ t$_i$
[-ϒ]
        cheated David in a game of chess]]]]?

LF- Adjunct Wh-Extraction

27 a. Why$_i$ does John think [$_{CP}$ t$_i$^{1} [$_{IP}$ Bill cheated David t$_i$ in a game of chess   t$_i$]]]]?

$$[+\Upsilon]$$

d. Why$_i$ does John think [$_{CP}$ t$_i$^{1} ~~that~~ [$_{IP}$ Bill cheated David in a game of chess   t$_i$]]]]?

$$[+\Upsilon]$$

References

Bayer, J. 1983. COMP in Bavarian Syntax. *The Linguistic Review* 3, 209-279.

Carnie, Andrew. 2006. *Syntax: A Generative Introduction* (2nd Ed.).   Oxford: Blackwell.

Chomsky, N. A. 1981. *Lectures on Government and Binding*. Dordrecht: Foris.

Chomsky, N.A. 1986. *Barriers*. Cambridge, MA: MIT Press.

Haegeman, L. 1994. *Introduction to Government and Binding theory*(2nd Ed.). Oxford: Blackwell.

Henry, A. 1995. *Belfast English and Standard English: Dialect variation and parameter setting*. Oxford: OUP

Lasnik, H. and M. Saito. 1984. On the nature of proper government. *Linguistic Inquiry* 15, 235-289.