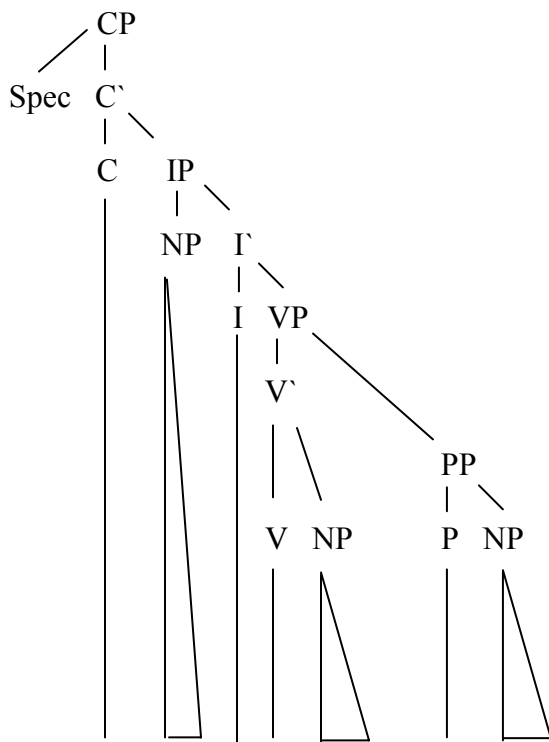


9.56, Fall 2004, PROBLEM SET, DUE Tuesday, Sept. 28, 2004 (at beginning of class)

Please note: These are not meant to be “tricky” but to help you learn, to let you test your understanding. Answers should be given in a fairly brief manner; no extra points for extra words. Clarity and correctness is most important. We are happy with and encourage working in groups, but all exercises must be written in your own words (no copying or group submissions). As always, note anyone with whom you work.

Exercise 1

On the basis of the following tree diagram, decide which of the following statements are true and which are false:



Will John – buy a car after the holidays ?

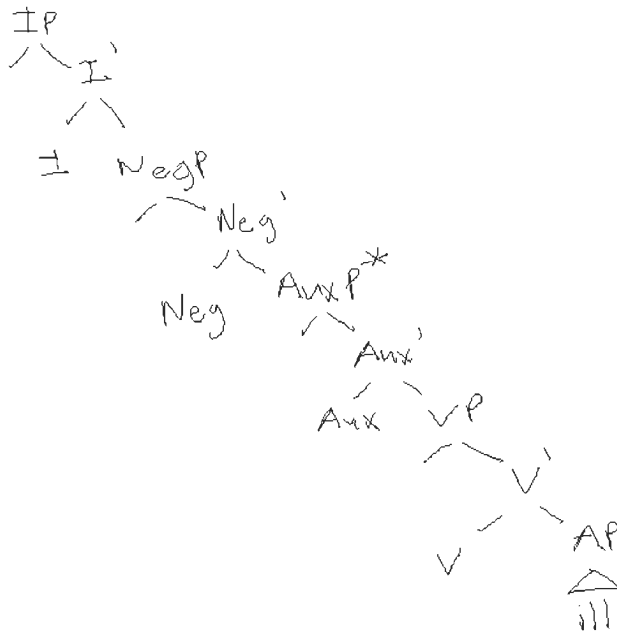
- | | |
|--|---|
| (a) IP dominates CP | F |
| (b) IP immediately dominates the subject NP | T |
| (c) IP is a sister of C | T |
| (d) V and the NP <i>a car</i> are sisters | T |
| (e) The NP <i>the holidays</i> is a constituent of IP | T |
| (f) The NP <i>the holidays</i> is an immediate constituent of VP | F |
| (g) VP and I are sisters | T |
| (h) VP precedes I | F |

Exercise 2

Consider:

- (a) Mary has been ill
- (b) Mary has not been ill
- (c) *Mary has been not ill
- (d) Mary is not ill
- (e) *Mary not is ill

Suppose that *not* starts out in the structure to the *left* (outside of) the VP. That is, *not* is a functional item, an instance of a functional category; it starts out outside VP. We know that *Mary* raises to Spec, IP. How do we account for the pattern in (a) through (e) above? In particular, *have* and *be* are Auxiliary verbs (Aux). What does Aux do? Where does it move to? All Aux? (Remember that a head (like Aux) must move to a head position. Which head is available?)



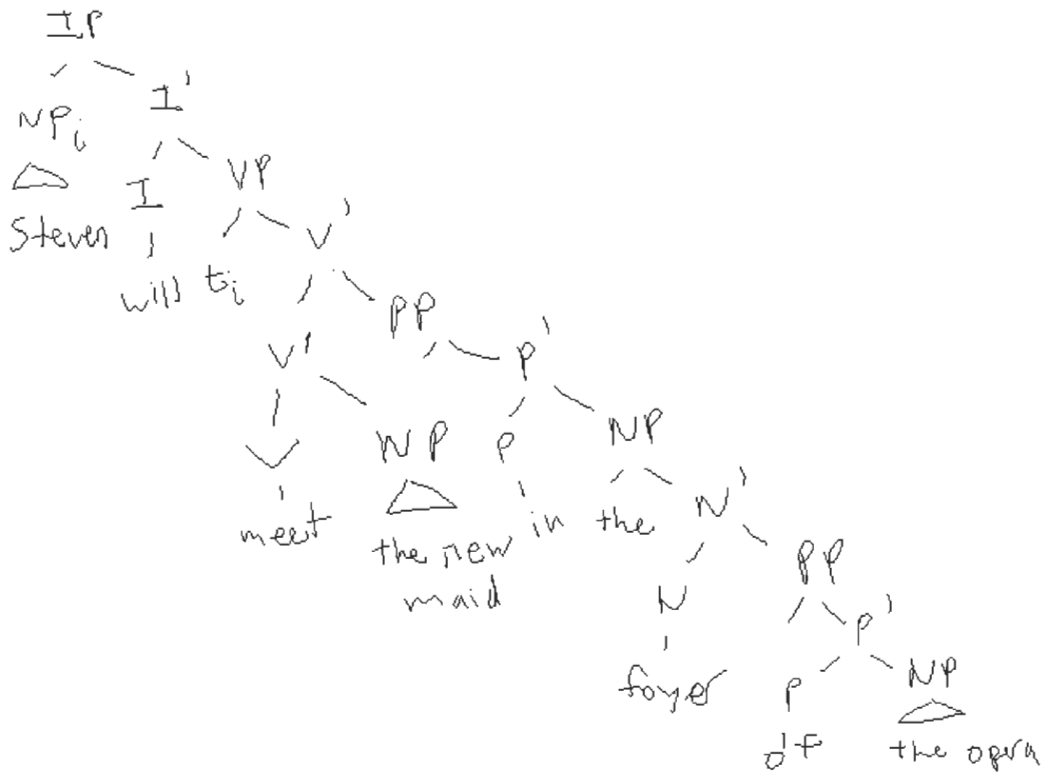
AuxP must start outside of the VP since auxiliaries play a functional role in the syntax. We know that only one auxiliary appears above negation at S-structure, so AuxP must be below NegP, with a single landing site above NegP available to host the moved auxiliary. I serves as the landing site for this moved auxiliary. Only the highest auxiliary moves to I. Ignoring differences between types of auxiliaries, the English grammar allows for four AuxPs (*She **will have been being** beaten when . . .*). Sentences (d) and (e) also show that the copula (BE) moves to I.

Exercise 3

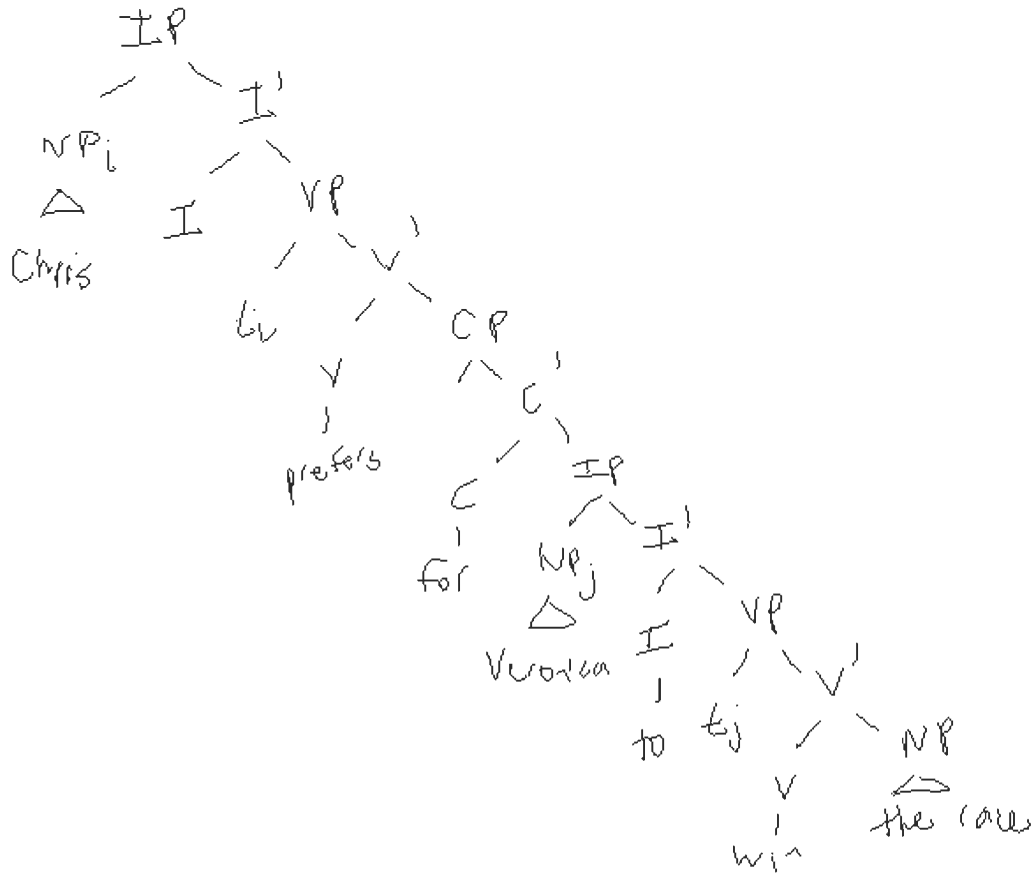
Show the X-bar structure (phrase-structure) of the following (include INFL (I) and COMPLEMENTIZER (C)):

(a) Steven will meet the new maid in the foyer of the opera.

Many of you had the second PP branching off of the NP *the new maid*, which is incorrect since *of the opera* modifies *foyer* and not *maid*.

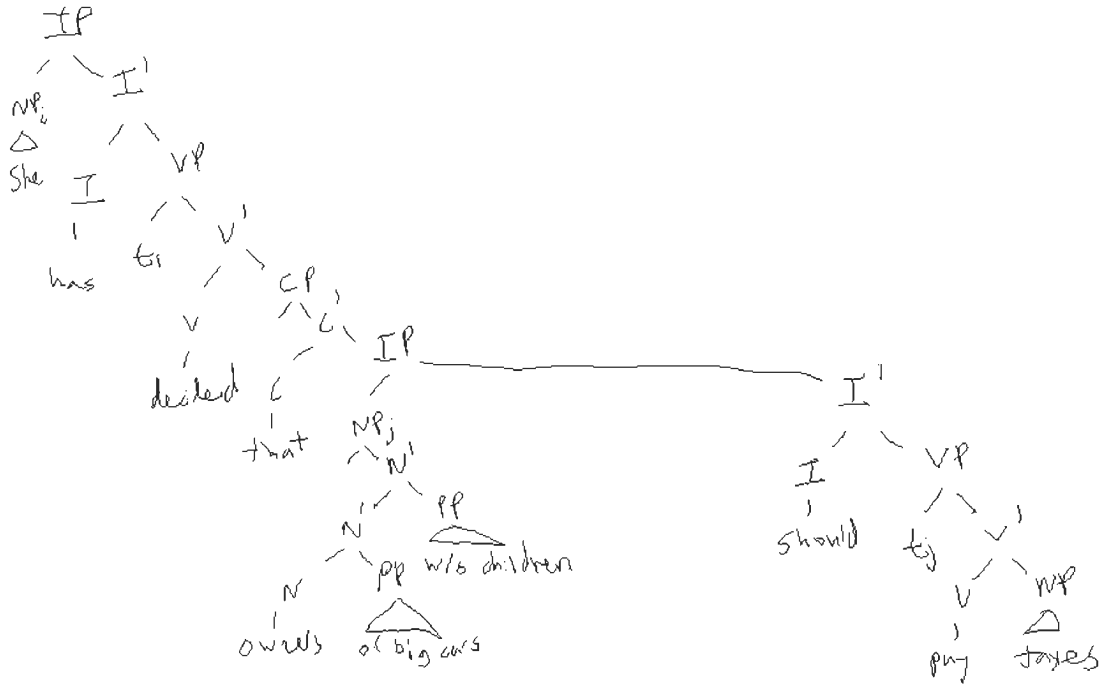


- (b) Chris prefers for Veronica to win the race
 (HINT: *to* is often thought to be the word that is the head of a non-finite clause)



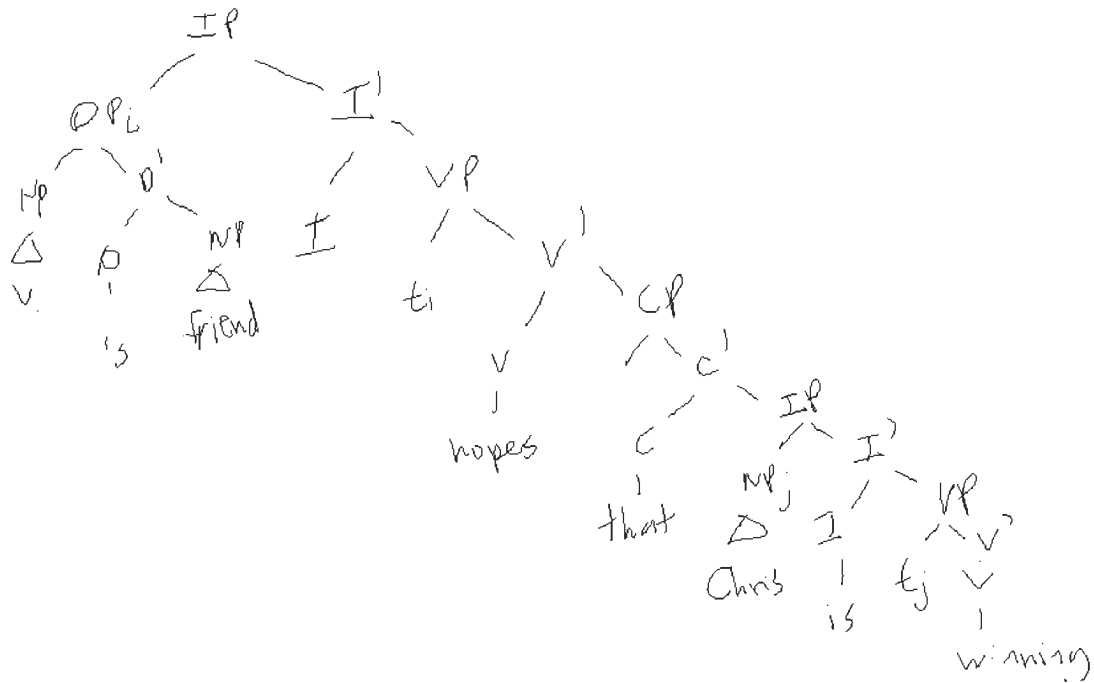
(c) She has decided that owners of big cars without children should pay tax.

You had to have the second PP adjoined to the N' *owners of big cars* (i.e. it is not the cars who are without children).



Many, many ways to have done the possessive. All were accepted if *Veronica* appeared low enough in the structure not to c-command the IP.

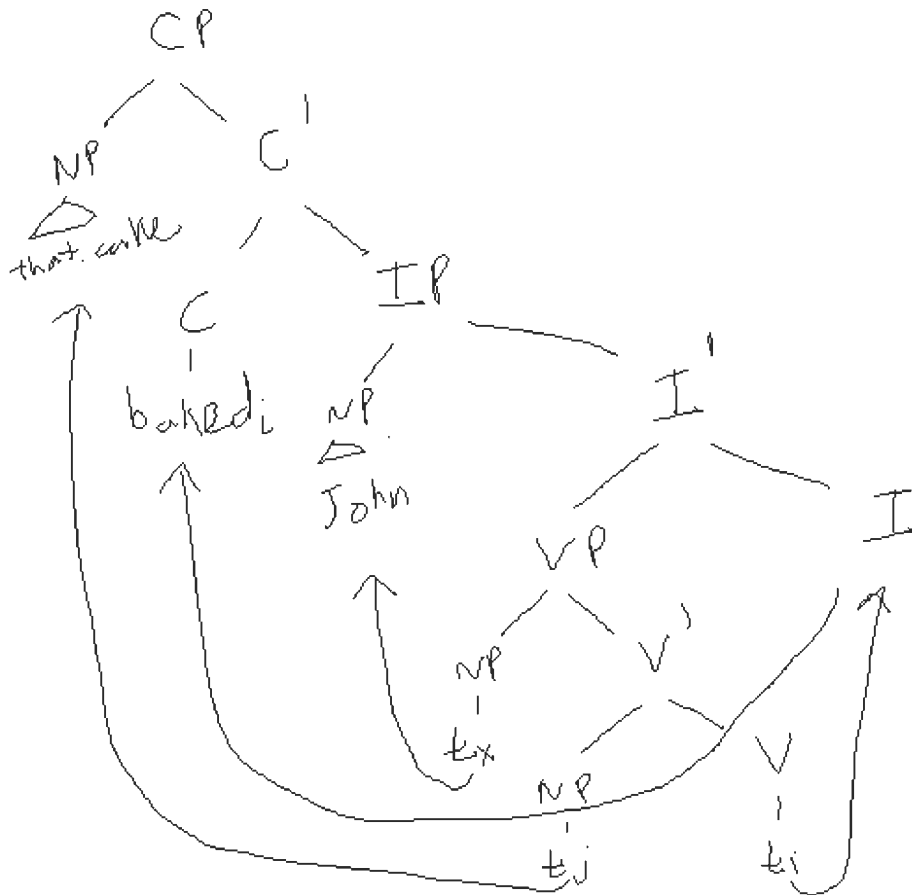
(d) Veronica's friend hopes that Chris is winning



Exercise 4

Show the derivation in GERMAN of the sentence: "That cake baked John." (Meaning the sensible meaning, of course, i.e., John baked that book.). In particular, draw a tree and show the movements.

Remember, German is SOV at D-structure.



Exercise 5

Norwegian in an SVO/V2 language. For each of the following sentences say whether the sentence is good in the adult language. In each case, why? (Remember that in a V2 language an adverb like “soon” can be the constituent which moves into first position (Spec,C)). +*fin* means “finite”

(1) John leaves (+fin) soon

Good. “Leaves” moves to C, “John” moves to Spec,CP.

(2) Soon leaves (+fin) John

Good. “Leaves” moves to C, “Soon” moves to Spec,CP.

(3) John leave [-fin] soon

Bad. Need finite V in root clause; “John” fails to get Case.

(4) Soon leave [-fin] John

Bad. Need finite V in root clause; “John” fails to get Case.

(5) Soon John leaves [+fin]

Bad. “Leaves” cannot be in C with two constituents to its left.

(6) Soon John leave [-fin]

Bad. Need finite V in root clause; “John” fails to get Case.

Exercise 6

Illustrate Principles A, B, and C of the binding theory with examples of your own, providing three examples for each principle.

For the most part, everyone gave fine examples.

Principle A

Principle B

Principle C

Exercise 7

Consider the following sentences in light of the binding theory as discussed in class. How do you explain their ungrammaticality?

- (a) *Brian_i liked [Mary's picture of himself_i]

Most of you attributed this to a violation of the locality constraint of Principle A. But very few of you stated the binding domain necessary to rule this out. That is, the binding domain cannot be the IP (*Brian* and *himself* are part of the same IP). This sentence suggests that NP also serves as a binding domain.

- (b) *Brian_i's mother liked himself_i

Violation of c-command constraint of Principle A (*Brian* does not c-command *himself*).

- (c) *I expect [himself_i to invite Poirot_i]

Violations of both Principle A (*himself* is not bound) and Principle C (*Poirot* is bound).

Exercise 8

Consider the following examples. Does the binding theory explain the judgments we indicate? Why?

(a) *John requests that himself leave soon.

Yes. *Himself* requires a local antecedent which is not available.

(b) *John longs for Mary to date himself.

Yes. *Himself* requires a local antecedent which is not available.

(c) A picture of himself astonished John

No. *Himself* requires a local antecedent which is not available, yet the sentence is ok.

(d) Unflattering descriptions of himself have been banned by our president.

No. Again, the anaphor is not bound. Here, however, we've a passive sentence, so perhaps the anaphor is bound at D-struct (requires that Principle A need only be satisfied at D-Struct then).

(e) *Himself astonished John.

Yes. Another example of an unbound anaphor.

(f) Joan_i recognized the necessity for her_i to leave.

Yes. The antecedent for *her* is sufficiently far away (different clauses).

Exercise 9

My D- and S-struct notation is to save me from having to draw more trees while allowing the relevant movements to be highlighted.

Discuss the derivation of the following sentences. For each sentence, provide a D-structure representation, an S-structure representation, and discuss the assignment of theta roles and of case.

(a) The prisoners have been arrested.

D-Struct: have been arrested [the prisoners]

S-Struct: [the prisoners]_i have been arrested t_i

The verb *arrested* assigns a theme role to *the prisoners*. The unaccusative passive verb cannot assign Case, so *the prisoners* must raise to Spec,IP where it is valued for Nom Case (from finite I).

(b) Poirot seems to like the countryside

D-Struct: seems [to Poirot like the countryside]

S-Struct: Poirot_i seems t_i to t_i like the countryside.

The verb *like* assigns an experiencer (not agent!) role to the external argument and a theme role to the internal argument. Poirot cannot receive case from the embedded clause (non-finite I) so it raises to the matrix Spec,IP where it gets Nom case.

(c) George is thought to have been invited to the court.

D-Struct: is thought [to have been invited George to the court]

S-Struct: George_i is thought t_i to have been invited t_i to the court

This sentence involves two passive transformations (many of you forgot about the second one). The NP *George* is assigned a theme role from *invited*. It continues to raise to satisfy EPP and receive Case (in matrix Spec,IP).

(d) John is likely to leave soon.

D-Struct: is likely [to John leave soon]

S-Struct: John_i is likely t_i to t_i leave soon.

Exercise 10

Consider the following sentences. For each sentence we offer some possible syntactic representations. Which one is theoretically justified? Provide evidence.

(a) John tried to go.

- a. $[_{IP} \text{John}_i \text{ tried } [_{CP} [_{IP} \text{PRO}_i \text{ to go}]]]$
- b. $[_{IP} \text{John}_i \text{ tried } [_{IP} t_i \text{ to go}]]]$

A.

First, we see two theta-roles. That is, John is both a trier and a goer. The theta-criterion tells us that for each theta-role, there must be a unique argument.

Second, no expletive construction is allowed (**It tried that John went*), providing further evidence that *John* is an argument of *try*.

(b) John appears to be happy.

- a. $[_{IP} \text{John}_i \text{ appears } [_{IP} t_i \text{ to be happy}]]]$
- b. $[_{IP} \text{John}_i \text{ appears } [_{CP} [_{IP} \text{PRO}_i \text{ to be happy}]]]]]$

A.

First, we see only one theta-role. That is, John is happy, but not an appearer. The theta-criterion therefore tell us that there is only one argument present.

Second, there is a semantically equivalent sentence using an expletive subject (*It appears that John is happy*), which shows that *John* is not an argument of *appear*.

(c) John is happy to leave.

- a. $[_{IP} \text{John}_i \text{ is happy } [_{IP} t_i \text{ to leave}]]]$
- b. $[_{IP} \text{John}_i \text{ is happy } [_{IP} \text{PRO}_i \text{ to leave}]]]$
- c. $[_{IP} \text{John}_i \text{ is happy } [_{CP} [_{IP} \text{PRO}_i \text{ to leave}]]]]]$

B or C accepted (A is clearly wrong since we don't get an expletive construction and see two theta roles). I realized that deciding between B and C is actually a bit trickier than we intended. No grades were affected.

Exercise 11

Consider the following (ungrammatical) examples. Together, they demonstrate a certain restriction on A-movement. What is this restriction?

- (a) *A kiss_i was given Mary t_i by John.
- (b) *John_i seems that Mary likes t_i.
- (c) *John_i seems that he_i is believed t_i to be happy.
- (d) *John_i seems that [_{IP} it appears [_{IP} t_i to be happy]].

To answer this question, it helps to list related sentences that *are* grammatical.

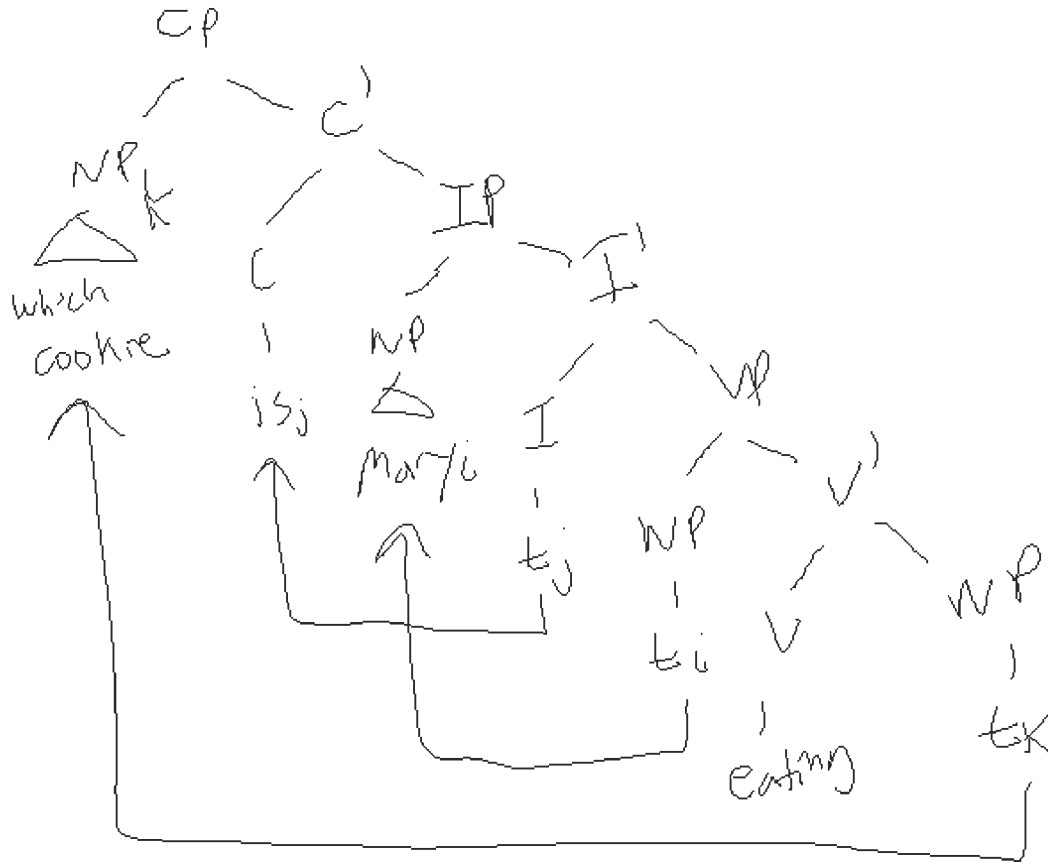
- (e) *A kiss_i was given Mary t_i by John.
Mary was given t_i a kiss by John.
- (f) *John_i seems that Mary likes t_i.
Mary_i seems t_i to like John.
- (g) *John_i seems that [_{IP} it appears [_{IP} t_i to be happy]].
It seems to appear that John is happy.

The difference between the ungrammatical and grammatical sentences involves a locality constraint on A-movement. Only the closest NP to I may move there. A corollary of this constraint is that an NP can never skip over another NP by A-movement.

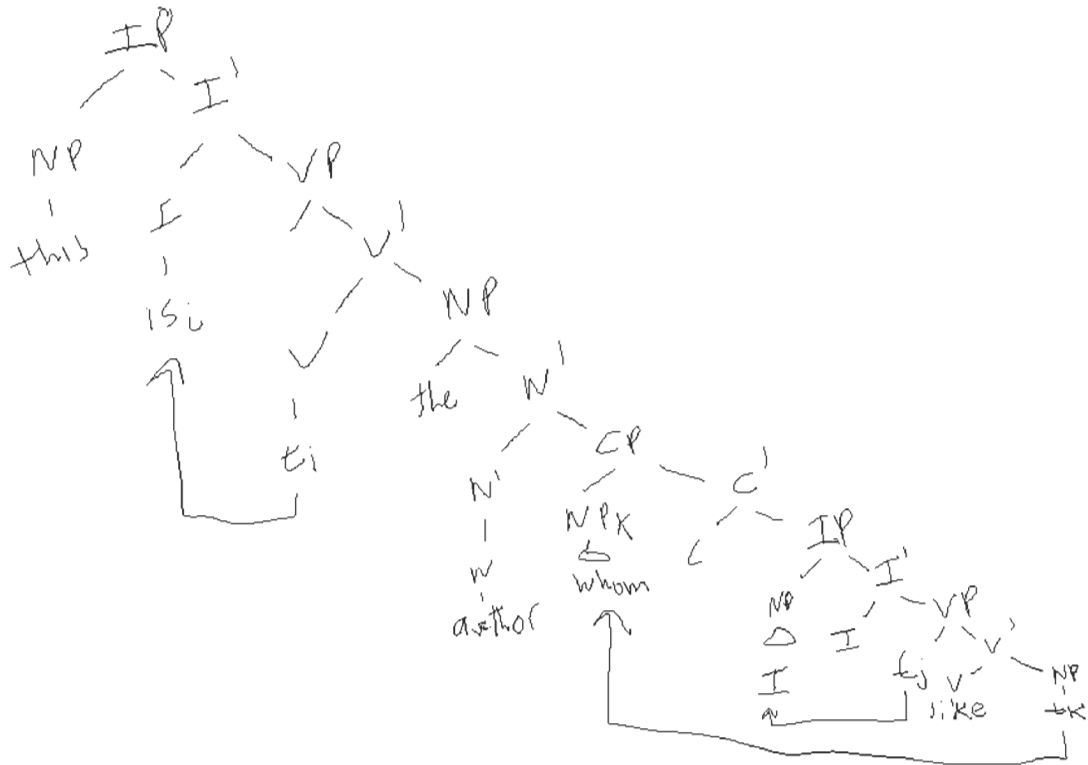
Exercise 12

Show the phrase (X-bar) structure and the movements that take place in the following:

(a) Which cookie is Mary eating?

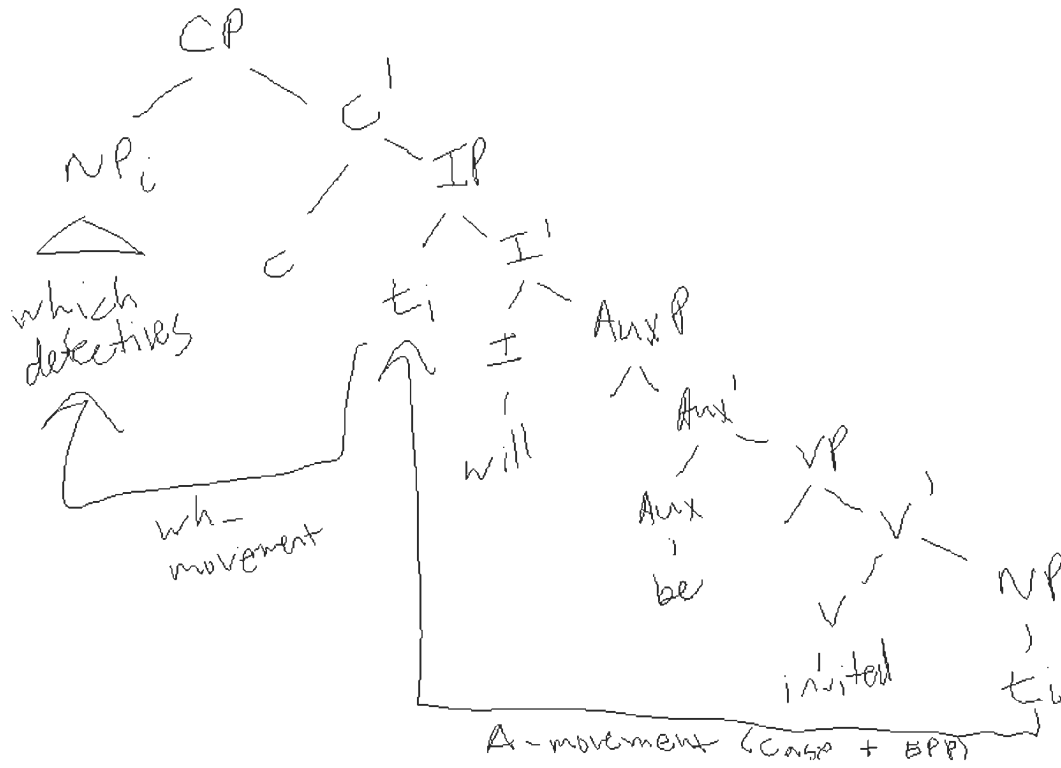


(b) This is the author whom I like.



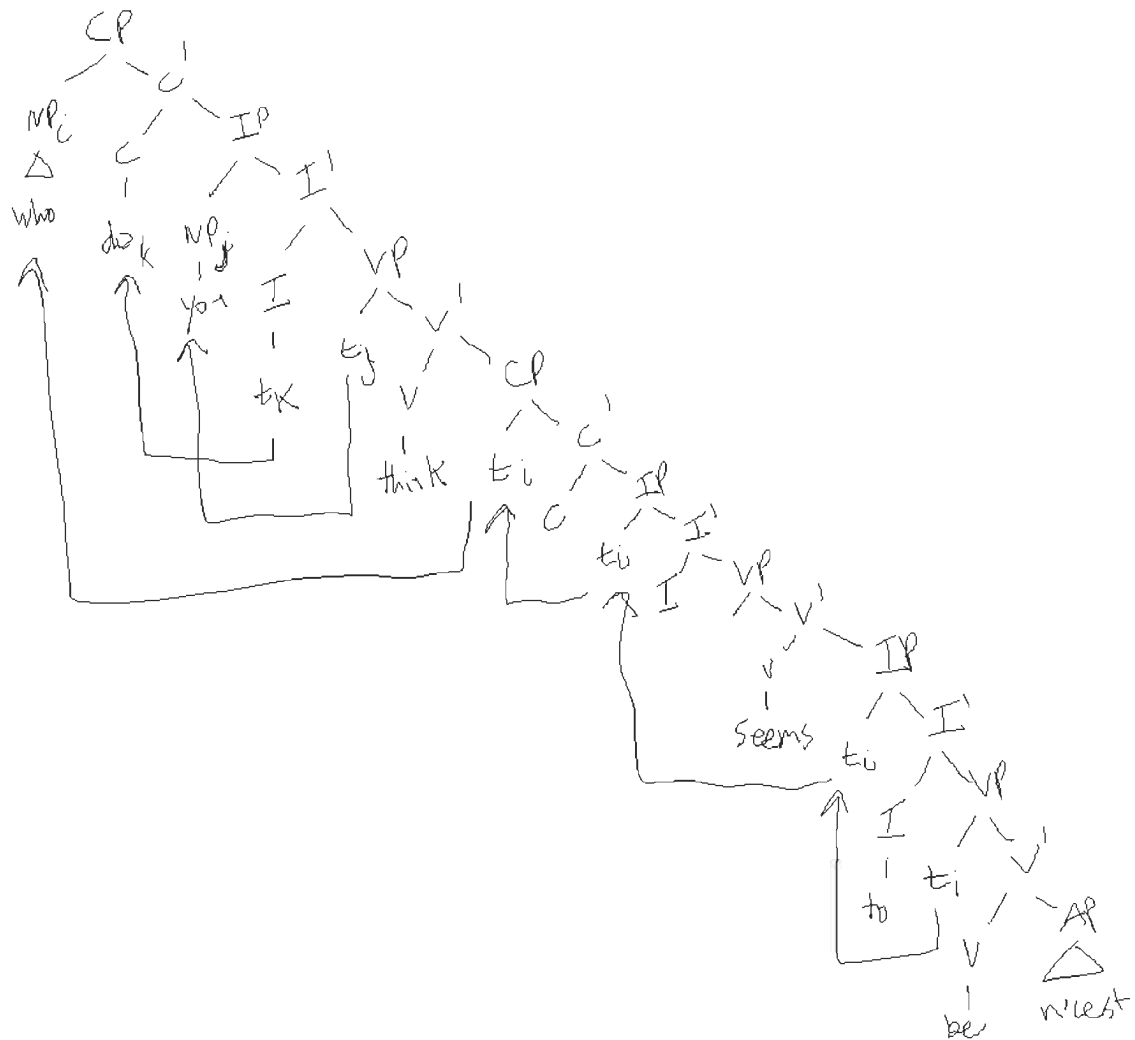
(c) Which detectives will be invited?

This is a passive sentence, wherein *which detectives* starts off in object position. It then raises to Spec,IP for Case and EPP. It then moves to Spec,CP.



(d) Who do you think seems to be nicest?

This one's a bit tricky so make sure you understand all the details. *Who* starts off as the external argument of *nicest* (actually there's probably a small clause [_{SC} who nicest] with *who* raising directly to Spec,IP) and raises to Spec,IP for EPP. It is still unvalued for Case (only finite I may assign Nom case), so it raises to the next higher Spec,IP where it finally gets Case. It must then move through each Spec,CP position on the way to the matrix Spec,CP.



(e) Which ships do you think will sink?

The verb *sink* is unaccusative here. That is, *which ships* is generated as the object of *sink*. It must move to Spec,IP to receive Case. Then, as it moves to the matrix Spec,CP it must stop off at each intervening Spec,CP.

