

# Head to Head Movement

Deriving word orders that X-bar theory can't account for.

# A Problem with X-bar

- X-bar theory requires that nothing may intervene between a head and its complement (by definition).
- Direct objects are the complements of verbs



# A Problem for X-bar

- 9% of the world's languages exhibit VSO order

V            S            O

Phóg Máire an lucharachán

Kissed Mary the leprechaun

“Mary kissed the leprechaun”

- The subject (a specifier) intervenes between the V and its complement.
- You can't draw a tree like this! Try it!

# A new kind of rule

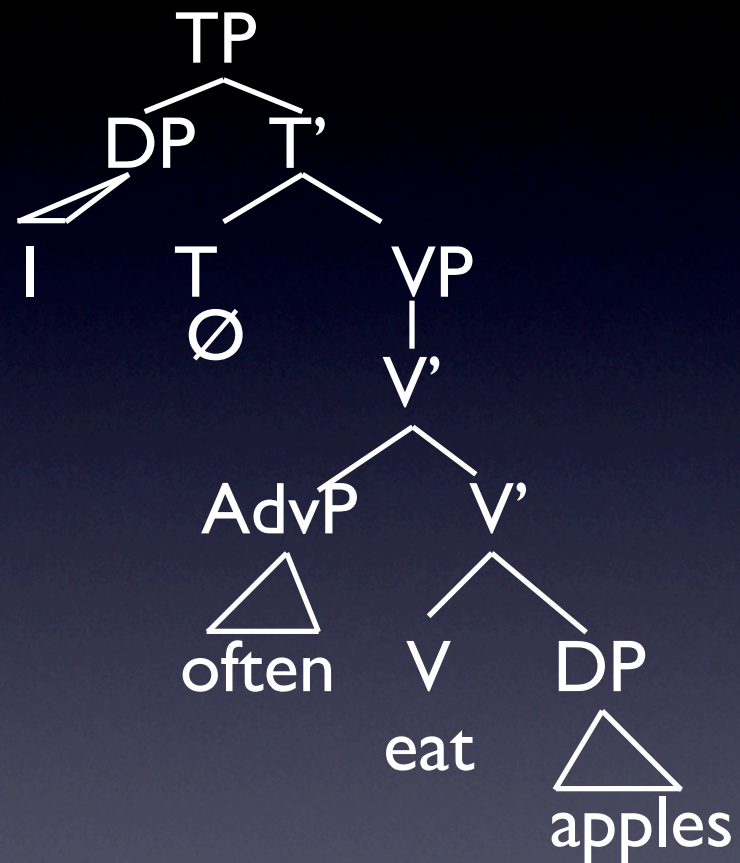
- ***Movement Rule:*** A rule that moves something around in the sentence
  - Affix lowering
  - Subject/Aux Inversion
- We'll use movement rules to account for word order paradoxes like VSO order.
- The first movement rule we'll look at is head-to-head movement. (Moving a head into a head).



# French Adverbs

- Adverbs are adjuncts
- But adverbs in French appear between the verbal head and the object (complement)
  - Je mange souvent des pommes    V adv Obj  
I eat often the apples  
“I often eat apples”
- Compare: I often eat apples    adv V Obj

# English Adverbs



If the verb  
appears before  
the adverb in  
French, where  
does it attach?



# French vs. English Adverbs

a) Je mange souvent des pommes

I eat often apples

b) I often eat apples

c) J' ai souvent mangé des pommes

I have often eaten apples

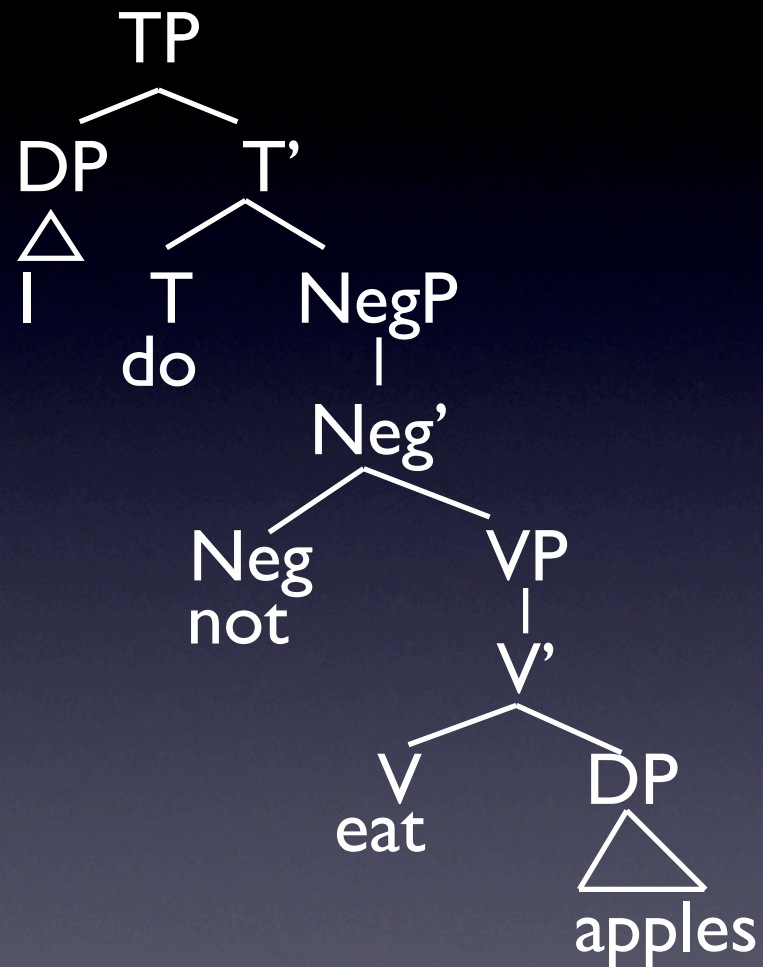
b) I have often eaten apples

Verb appears here  
when no overt  
auxiliary

verb appears here  
when T is filled

conclusion: tensed V in French is in T

# English Negation





# French vs. English Neg

a) Je ne-mange pas

I eat

not

des pommes

apples

b) I do

not

eat

apples

c) Je

n'ai

pas

mangé

des pommes

I have

not

eaten

apples

Verb

b) I

have

not

eaten

apples

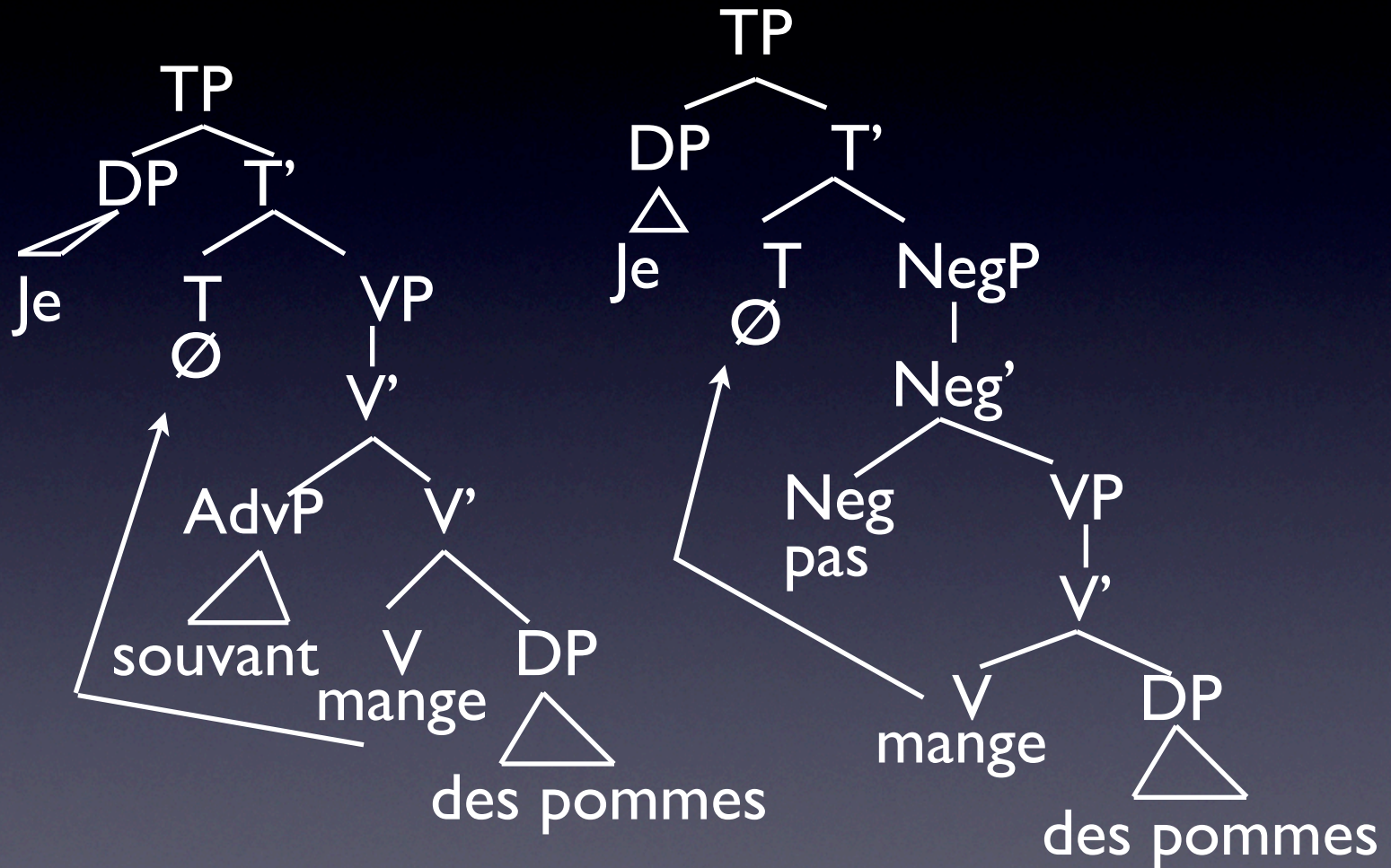
appears  
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T

verb appears here  
when T is filled

conclusion: tensed V in French is in T

# Verb Raising $V \rightarrow T$





# Verb raising is motivated by the inflectional suffixes!

- In English, T lowers to attach suffixes to the verb.
- In French, the verb raises to T to get the suffix on the verb
- **The verb raising parameter:**  
Verbs raise to T *OR* T lowers to V.

# Verb Raising in Vata

a) a    la    saka    li

we have    rice    eaten

“We have eaten rice”

b) a            li            saka    *t<sub>V</sub>*



we    eat    rice

“We eat rice”

Data from Koopman  
1984



# Verb Subject Object Order

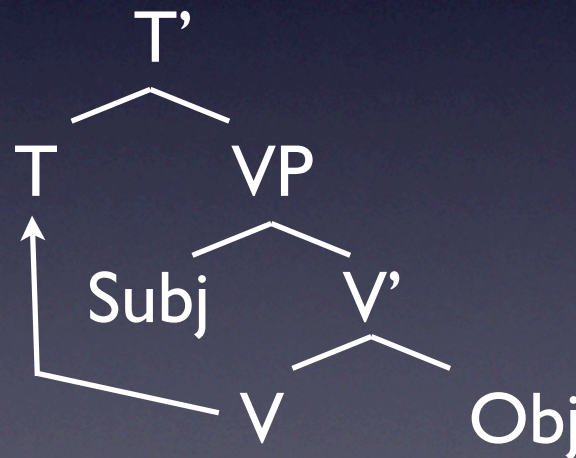
1) Tá Máire ag-pógáil an lucharachán  
Is Mary ing kiss the leprechaun  
“Mary is kissing the leprechaun”

2) Phóg Máire an lucharachán  
kissed Mary the leprechaun  
“Mary kissed the leprechaun”

Tensed verbs and Auxiliaries in Irish show  
positional alternations just like Vata and  
French.

# Problem: How do you get the subject after T?

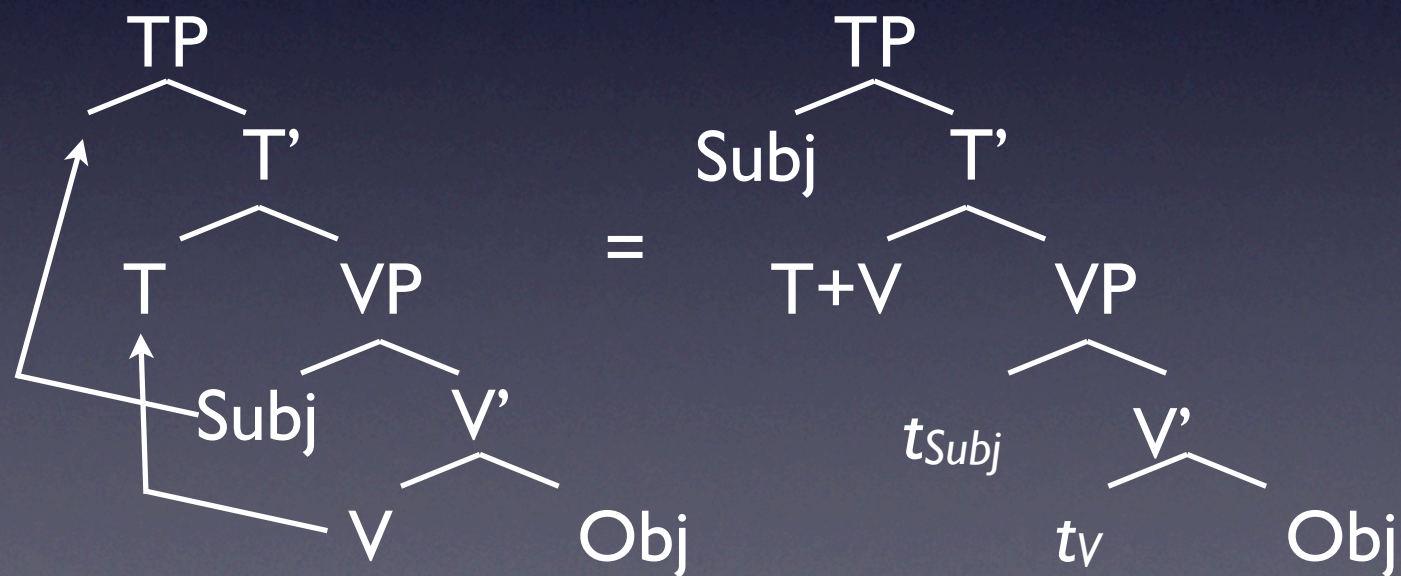
- VP internal Subject hypothesis: Subjects are generated in the specifier of VP





# Problem: How do you get the subject before T in French??

- Subjects in French and English (but NOT Irish) raise from spec VP to spec TP (*the reasons will be discussed in the next unit*)



# Summary of V to T

- X-bar theory can't generate V adv O order or VSO order
- Observation: These orders don't show overt auxiliaries
- Verb raises to T around negation, adverbs, and VP internal subjects.
- Verb movement is motivated by inflectional suffixes.
- English doesn't show verb movement: Verb Raising parameter.
- Subjects in all languages start in spec of VP



# Another instance of head movement: $T \rightarrow C$

Subject Aux Inversion:

*You have squeezed the Charmin<sup>©</sup>*

*Have you squeezed the Charmin<sup>©</sup>?*

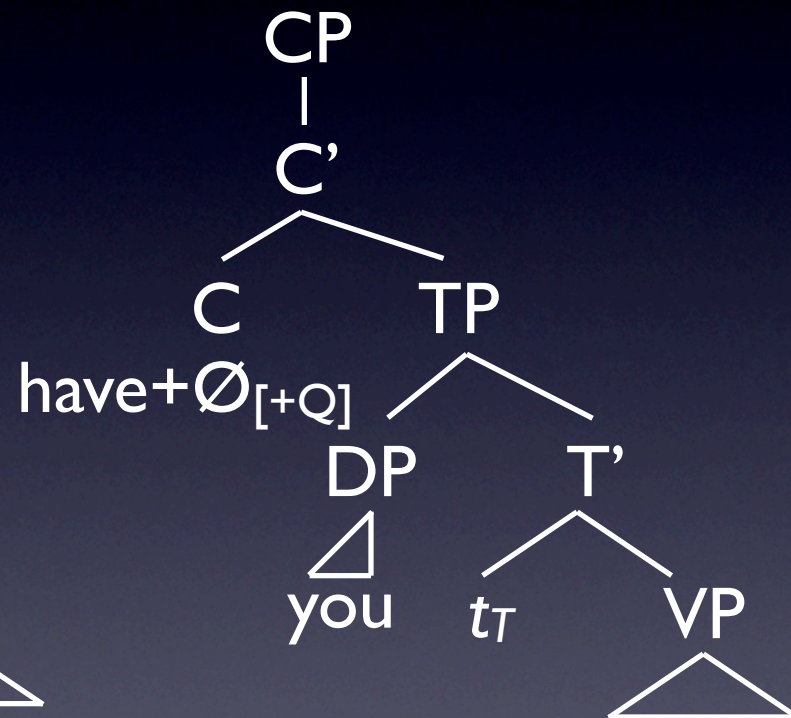
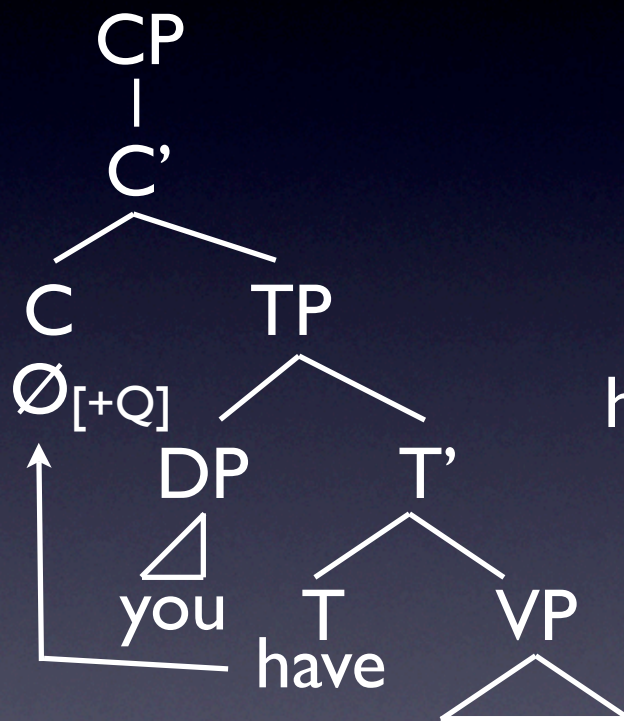
Complementizer question particles in Irish

An bhfaca tú an madra

Q See you the dog

“did you see the dog”

# T to C movement





# T to C

- Evidence: subject/aux inversion not allowed with an embedded Q complementizer

I asked *have* you squeezed the Charmin

I asked whether you *have* squeezed the Charmin

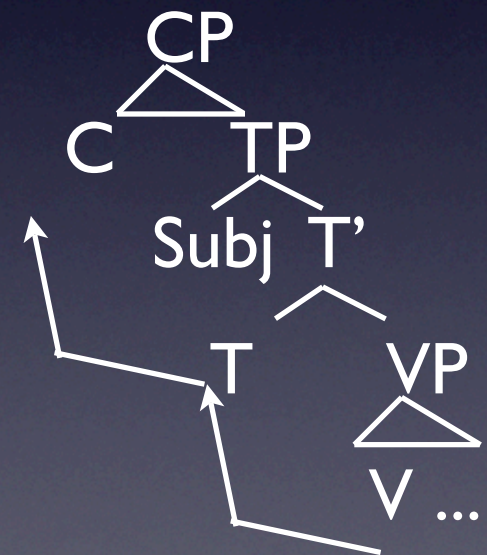
\*I asked whether *have* you squeezed the Charmin.

# Interaction between V to T and T to C

- In French, both main verbs and auxiliaries are in T. Prediction: both main verbs and auxiliaries will undergo T to C:

Avez-vous Mangé des pommes?  
have-you eaten the apples

Mangez vous des pommes?  
Eat you the apples



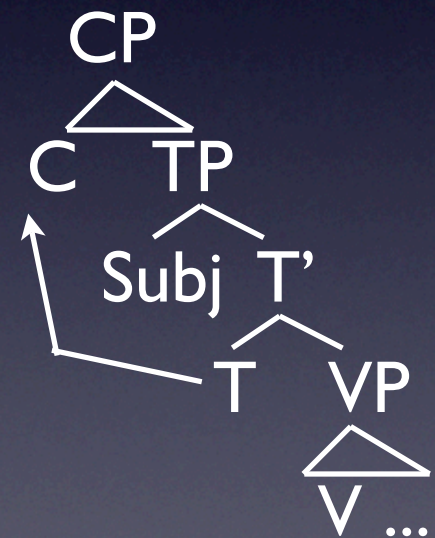


# Interaction between V to T and T to C

- In English, only auxiliaries are in T. Prediction: only auxiliaries will undergo T to C:

Have you eaten the apples?

\*Eat you the apples?



# Do Support

I have eaten the apples

Have you eaten the apples?

I ate the apples

\*Ate you the apples?

Did you eat the apples?

- Where does this “do” thing come from???
- Also appears in negation

I eat apples

I do not eat apples



# Do Support

## *Do Insertion*

When there is no other option for supporting inflectional affixes, insert the dummy verb *do* into T.

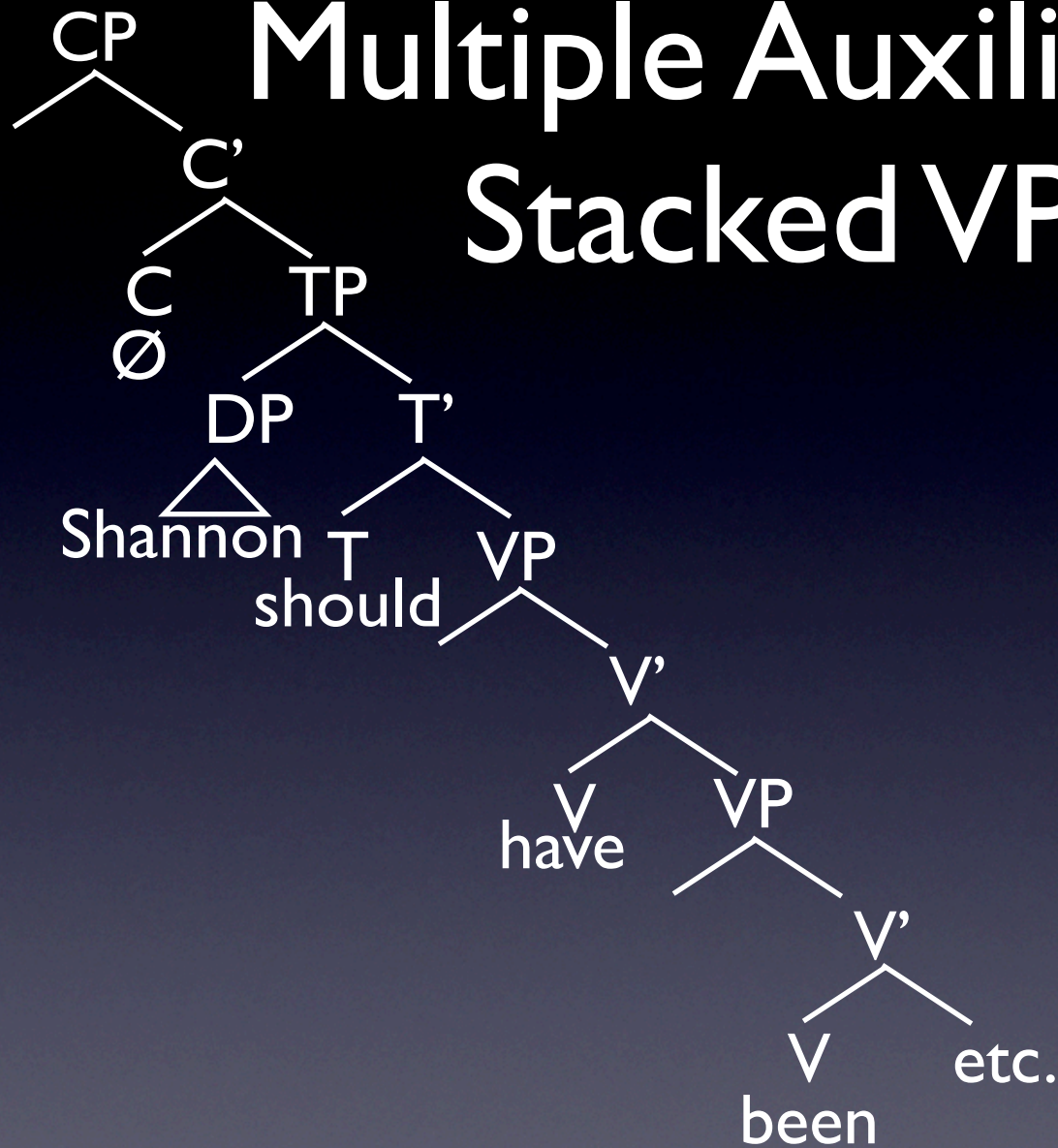
- 1) T can't both lower to V and raise to C -- so it appears in questions
- 2) For some reason, Negation blocks Affix lowering.

# Multiple Auxiliaries

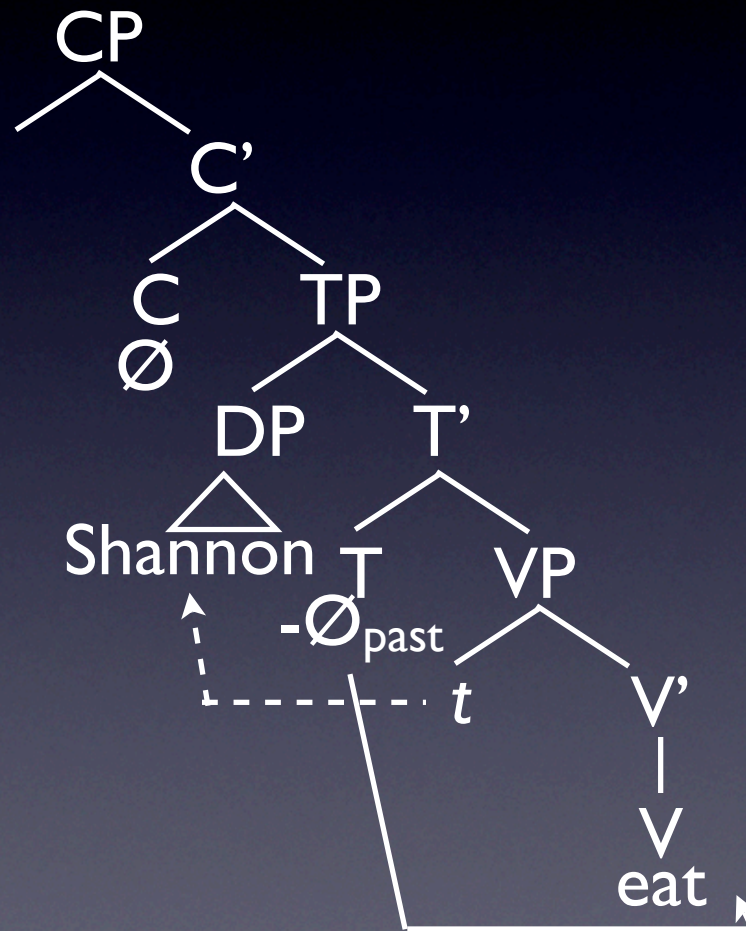
- Shannon should have been being fed at the table.
- Modals are in T:
  - Shannon should not have been being fed at the table
  - Shannon should [<sub>Adv</sub> never] have been being fed at the table.
- this means that *have* and *be* are NOT in T in the sentence above (although they are in other constructions: Shannon has not eaten)
- How do they get there? Verb Movement



# Multiple Auxiliaries: Stacked VPs

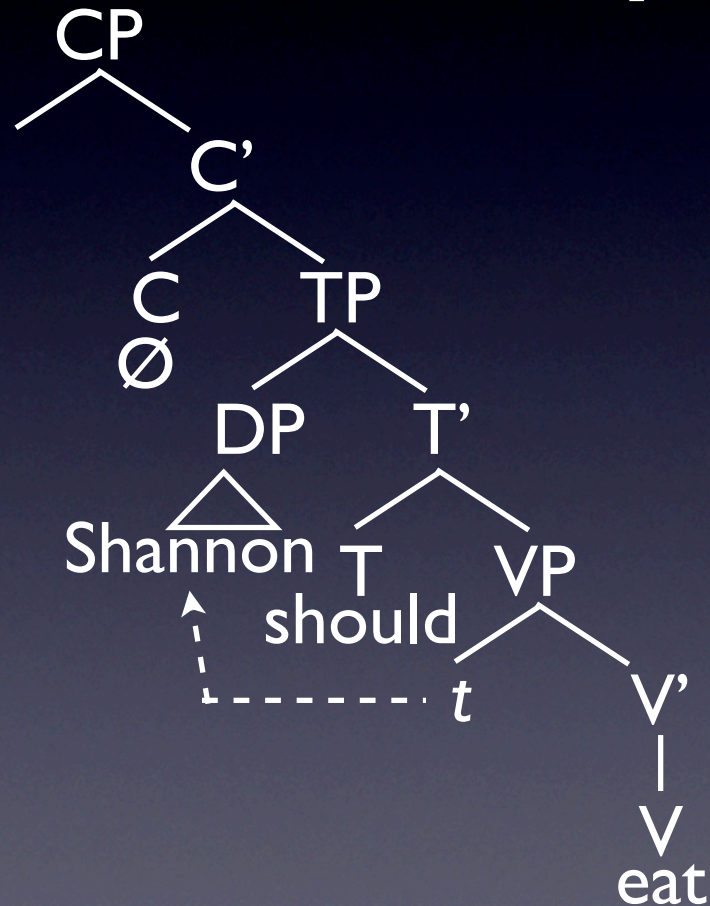


# With a suffix

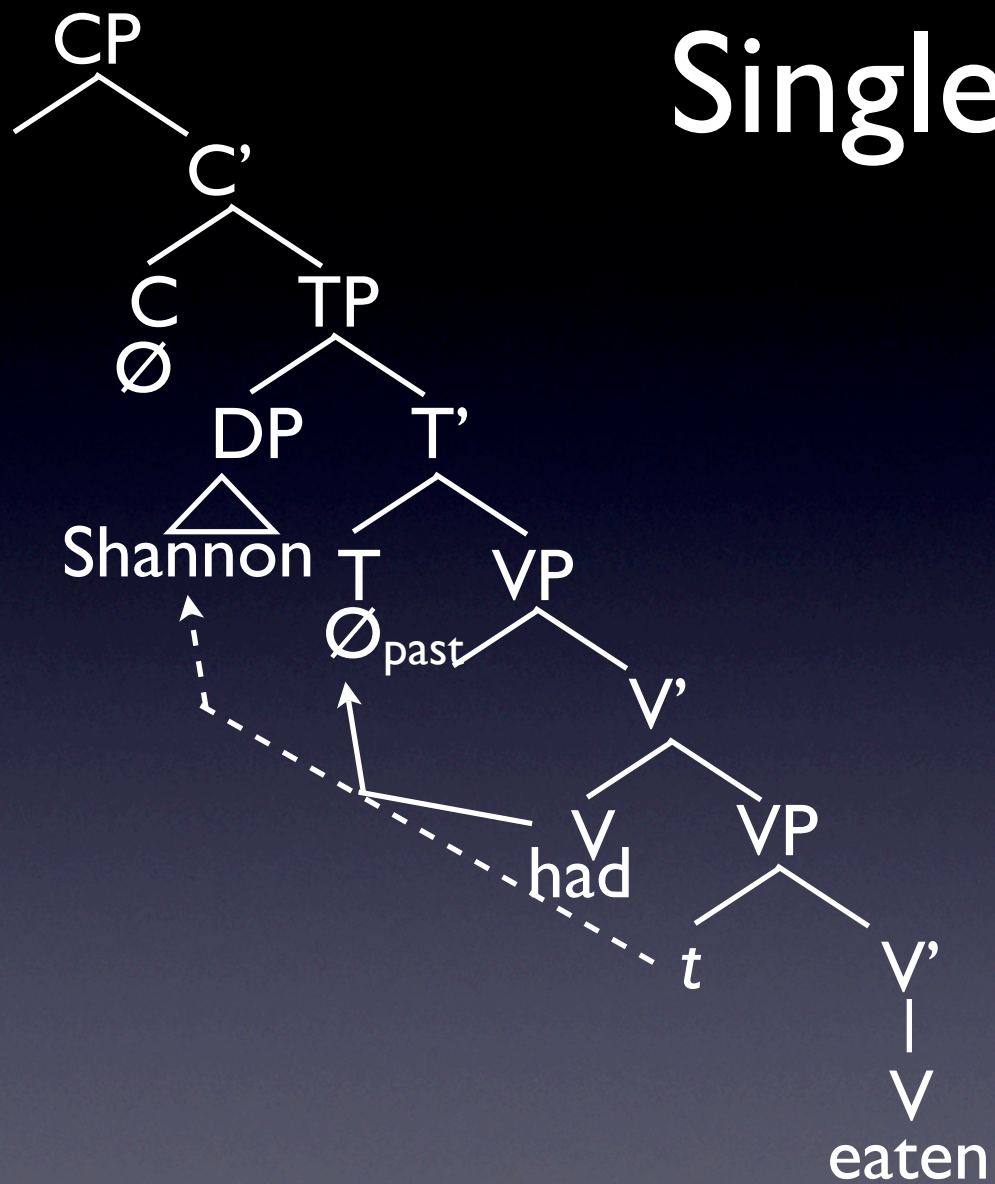




# With a modal but no auxiliary



# Single Aux





# Verb Raising in English?

- Wait... English is affix lowering! Not verb raising
- Revised verb raising parameter
  - i) All tensed verbs raise to T (french, irish)
  - ii) Tensed Auxes raise to T and tense affixes lower to tensed main verbs

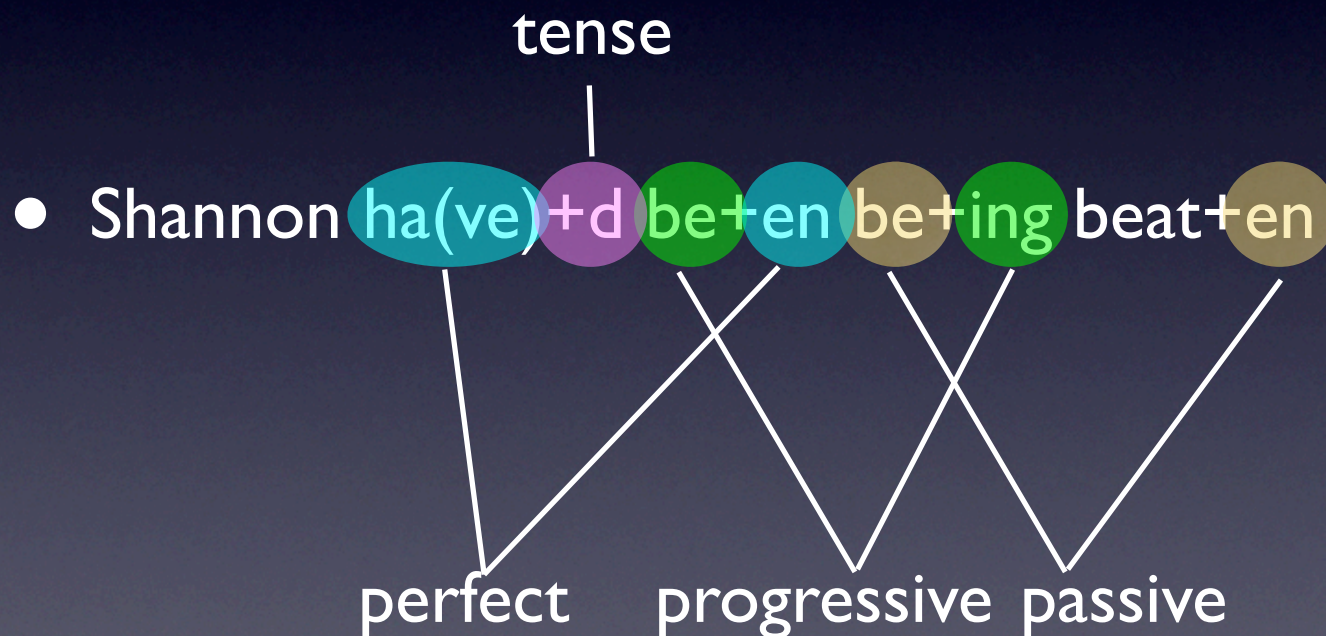
# Affix Hopping

- Shannon ate/ Shannon eats    simple past/present    -ed/-s
- Shannon should eat    modal    modal V
- Shannon has eaten    perfect(ive)    have + en
- Shannon is eating    progressive    be + ing
- The bread was eaten    passive    be + en  
(sometimes -ed, but we'll use -en to avoid confusion)

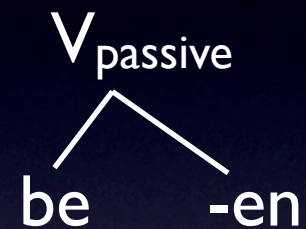
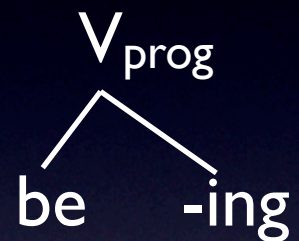
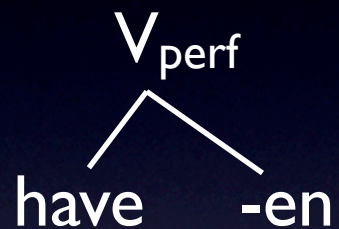


# The grand slam (leaving out modals)

- Shannon had been being beaten



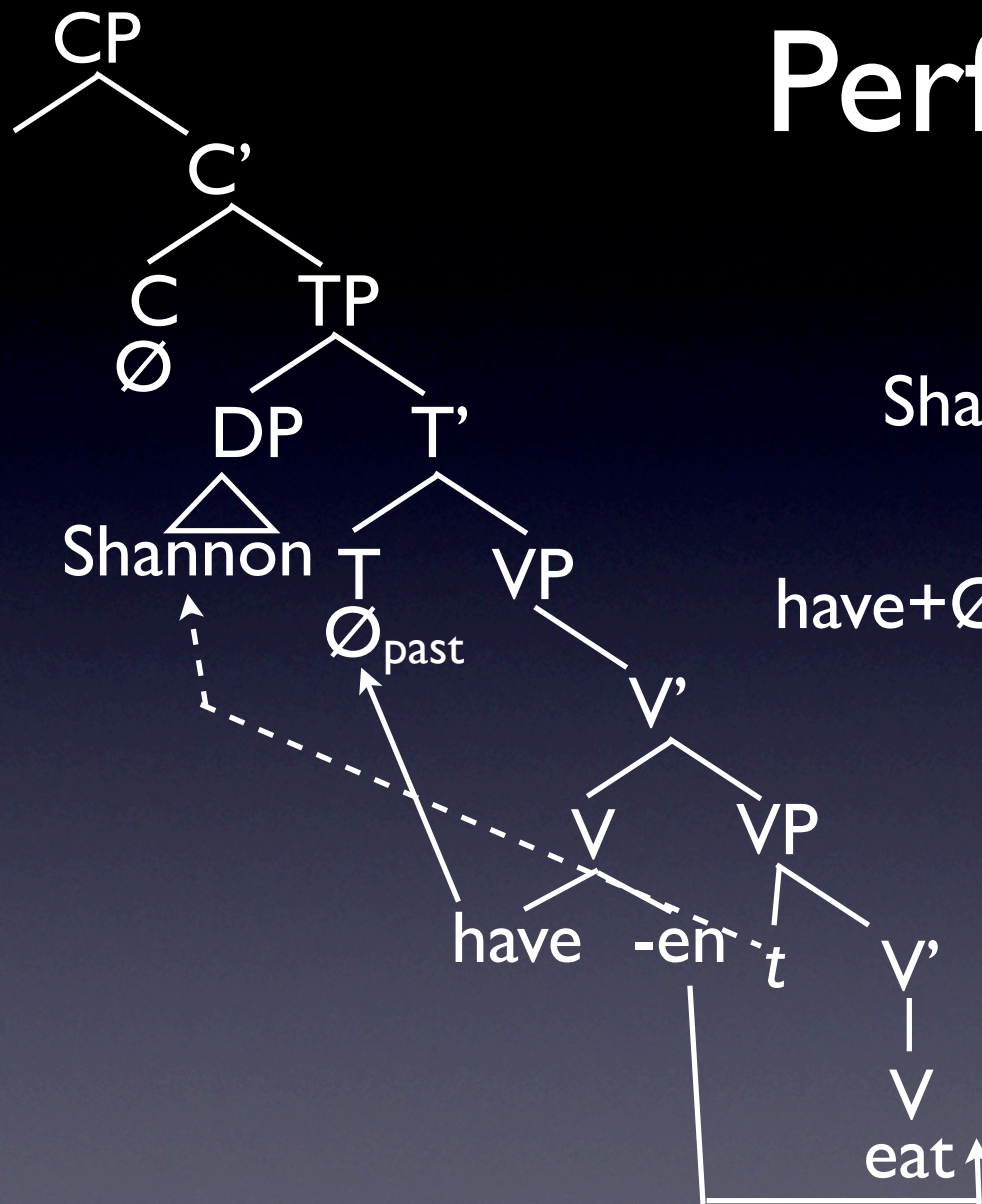
# The types of Aux





# Perfect

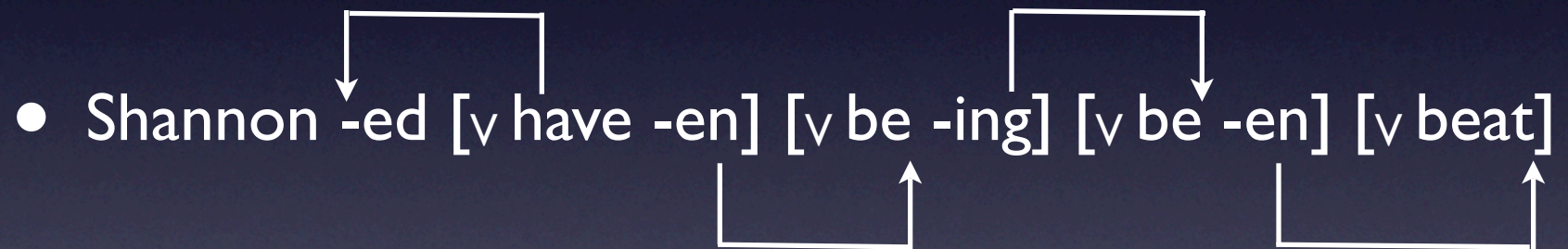
Shannon had eaten



have+ $\emptyset_{\text{past}}$  = had

# The grand slam

V (Aux) to T



Three instances of affix lowering

See the textbook for a tree



# Summary

- Word Orders not produced by X-bar (VSO, VadvO, V Neg O) are generated by head to head movement.
- V to T: motivated by the need for T to be pronounced
- V to T alternates with Affix lowering (parameter)
- VSO order results from a conspiracy of V to T and VP internal subjects

# Summary

- Subject Aux Inversion involves T to C movement.
- T to C movement motivated by need to pronounce [+Q] Complementizer
  - (evidence: overt complementizers block T to C)
- T to C and V to T interact.
- *Do* support triggered when T can't be supported any other way.