Intro to Syntax, PART THREE

Omer Preminger, *MIT*

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Phrase Structure: Beyond the Basics

Recap

Last time…

- We revised how we identify ***head*** and ***complement*** within a phrase —

When two constituents *Merge*, the ***complement*** is the one that can "grow" into more than a word. *(previously known as "**ATTEMPT #2**")*

⇒ leaving us with one unanswered question:

- Is it sufficient to have a theory where a constituent can be either:
  - **(i)** a single word
  - **(ii)** the result of applying *Merge* to a single word and some other constituent

➢ <u>In other words:</u>
Are there instances where complex constituents — consisting of more than a single word — *Merge* with other constituents, that are themselves complex?

More complex constituents

- We have seen DPs of the following sort:

(1) a. [$_{DP}$ a [$_{NP}$ contribution]]
b. [$_{DP}$ the [$_{NP}$ promises]]
c. [$_{DP}$ a [$_{NP}$ book [$_{PP}$ about [$_{DP}$ a [$_{NP}$ vampire]]]]]

- but these, of course, are not the only kind of DPs one finds

(2) a. John's contribution
b. a politician's promises
c. the author's book about a vampire

First of all, why are we so sure these are DPs?

- RECALL: our original motivation for DP as a *category* was **distributional**
  - namely, that adjectives (like *certain*) refused to take these constituents as their complements
    - while closely related verbs (like *believe*) readily *Merged* with those same constituents

More complex constituents

➢ This distributional argument holds of these constituents, just as it does for the "original" DPs we looked at:

(3) a. * Mary is appreciative$_{(A)}$ [John's contribution].
b. * The people are usually suscipcious$_{(A)}$ [a politician's promises].
c. * The publisher is dismissive$_{(A)}$ [the author's book about a vampire].

(4) a. Mary appreciates$_{(V)}$ [John's contribution].
b. The people usually doubt$_{(V)}$ [a politician's promises].
c. The publisher rejected$_{(V)}$ [the author's book about a vampire].

- What is the head of *[John's contribution]*?
  - can it be *contribution* (N)?

(5) [John's [contribution to the foundation]]

– *contribution*, just as in *[$_{DP}$ the contribution]*, can be part of a complex constituent (to the exclusion of *John's*)

$\Rightarrow$ *contribution* (N) cannot be the head of *[John's contribution]*

- can *John* be the head of *[John's contribution]*?

(6) [the charming old man's contribution]

(7) [the charming old man's [contribution to the foundation]]

⇒ *John* cannot be the head of *[John's contribution]* (!!)

➢ Consider the following:

(8) a. John's contribution

b. * John's a contribution

c. * John's the contribution

- even though it seems there's nothing *semantically* wrong with constructions like (8b–c)
  - cf. (9a–b):

(9) a. a contribution by John/of John's

b. the contribution by John/?of John's

⇒ *'s* and *a*/*the* are in *complementary distribution*

- which is a fancy way of saying only one can appear, but not both

(just like *a* and *the* are, themselves, in *complementary distribution*)

➢ which suggests that... *'s* is a D(eterminer)!

- So *'s* is the head of these constituents (repeated from earlier):

(10) a. [$_{DP}$ John 's$_{(D)}$ [$_{NP}$ contribution]]
b. [$_{DP}$ a politician 's$_{(D)}$ [$_{NP}$ promises]]
c. [$_{DP}$ the author 's$_{(D)}$ [$_{NP}$ book about a vampire]]

But that leaves us with the question:

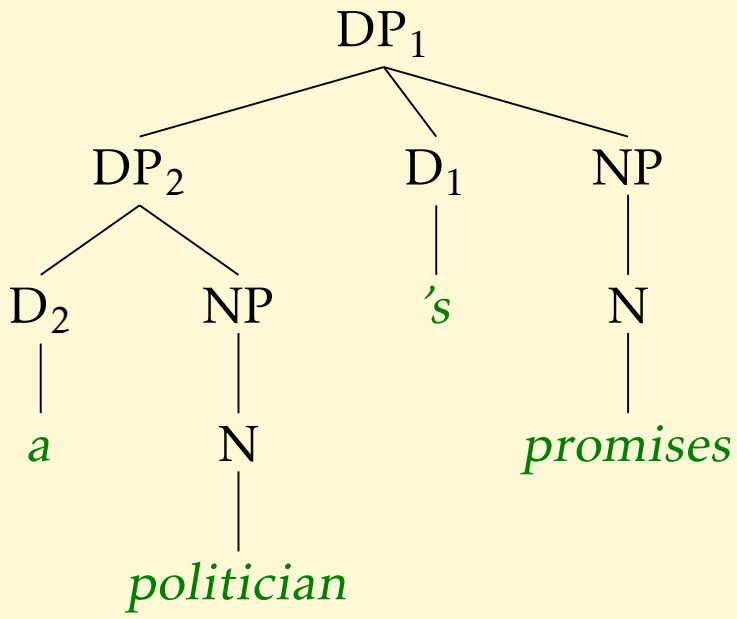
- What are *John*/*a politician*/*the author*, in terms of phrase-structure? NOTICE:
  - We might not be sure — at this point — what the category of *John* is
  - but we know what the category of *a politician* and *the author* is
    - ➢ they are **DPs**

⇒ We're dealing with DPs that consist of an NP, a D head, and another DP!

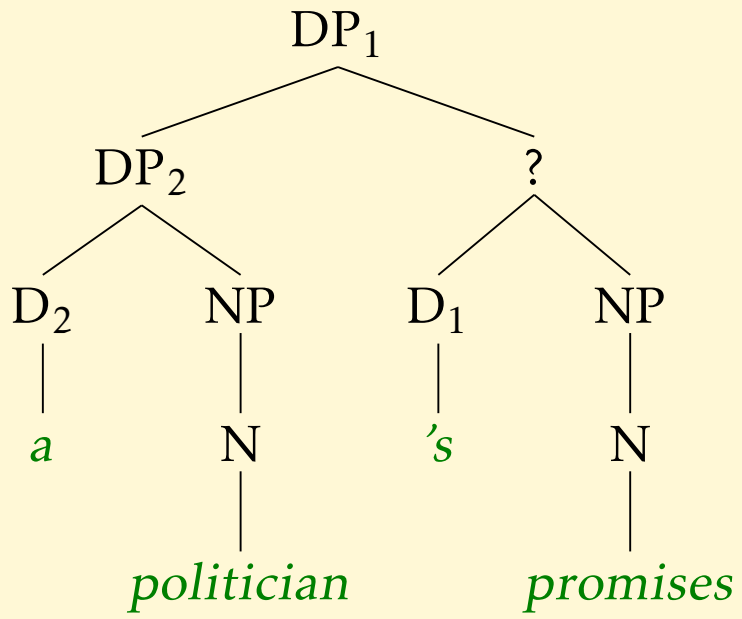
(11) a. [$_{DP}$ [$_{DP}$ John] 's$_{(D)}$ [$_{NP}$ contribution]]
b. [$_{DP}$ [$_{DP}$ a politician] 's$_{(D)}$ [$_{NP}$ promises]]
c. [$_{DP}$ [$_{DP}$ the author] 's$_{(D)}$ [$_{NP}$ book about a vampire]]

- What is the structural organization of these sub-constituents?

(12) *"FLAT"*



(13) *BINARY BRANCHING*



The category of sentences

- Before answering this question, let us look once more at our inventory of lexical categories:
  - ***verbs:***
    - $[_{VP}\ kick_{(V)}]$
    - $[_{VP}\ kick_{(V)}\ [_{DP}\ the\ ball]\ ]$
  - ***nouns:***
    - $[_{NP}\ path_{(N)}\ ]$
    - $[_{NP}\ path_{(N)}\ [_{PP}\ to\ the\ fountain]\ ]$
  - ***determiners:***
    - $[_{DP}\ the_{(D)}\ [_{NP}\ path]\ ]$
  - ***prepositions:***
    - $[_{PP}\ on_{(P)}\ [_{DP}\ the_{(D)}\ [_{NP}\ table]\ ]\ ]$
  - ***complementizers:***
    - $[_{CP}\ that_{(C)}\ [_{?}\ the\ kid\ kicked\ the\ ball]\ ]$
    - $[_{CP}\ whether_{(C)}\ [_{?}\ the\ kid\ kicked\ the\ ball]\ ]$

⇒ What is the category of C's complement?

The category of sentences

- Given what we saw for DPs, it is now reasonable that the initial DP (the "subject") in the sentence (*the kid kicked the ball*) is not the head
  - just like the possessor in a DP is not the head of that DP (*the politician's contribution to the foundation*)

➢ So is the verb (e.g., *kick(ed)*) the head of the sentence?
  - i.e., is a sentence really a VP?

- If we look at unembedded sentences or at complements of *that*$_{(C)}$, the verbs in those sentences have a property that is not shared by all VPs

(14) a. The kid <u>kicked</u> the ball.
b. Mary knew that the kid <u>kicked</u> the ball.

(15) a. The kid <u>kicks</u> the ball.
b. Mary knew that the kid <u>kicks</u> the ball.

(16) The kid wanted to <u>kick</u> the ball.

(17) To <u>kick</u> the ball is not as exciting as to head it.

- ***Tense***! (*present*/*past*/etc.)
  - every unembedded sentence or complement of *that*$_{(C)}$ has ***tense***
  - but not every VP has ***tense***

- In fact:
  - we have been looking at what traditional grammarians call "present simple" and "past simple"
  - in these, the tense morphology (e.g., *-ed*) is fused with the verb
  - if we look at other tenses, we can see (at least part of) the tense morphology as a separate word:

(18) a. The kid has kicked the ball.
b. The kid is kicking the ball.
c. The kid will kick the ball.

⇒ **PROPOSAL:** the head of the sentence is T(ense)

- the ***complement*** of T is a VP

(19) [$_{TP}$ [$_{DP}$ The kid] will$_{(T)}$ [$_{VP}$ kick the ball]].

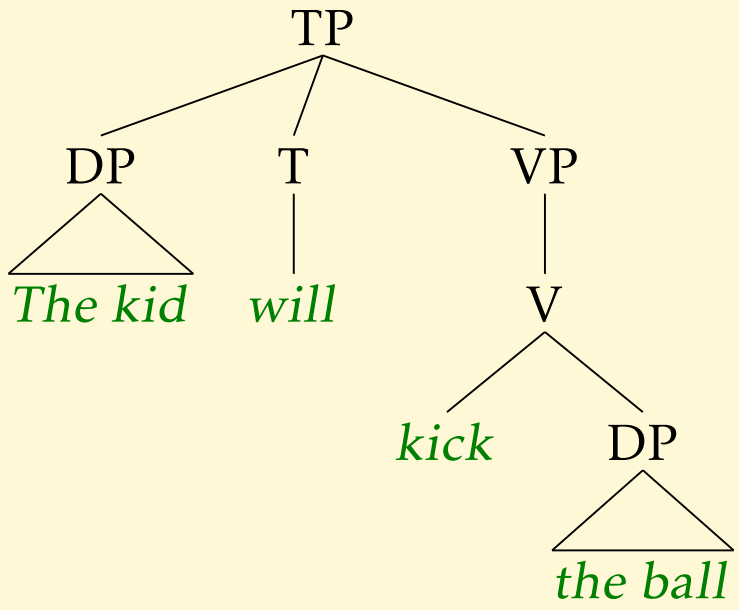
(In the so-called "simple" tenses, *something* makes the tense-morphology appear on the verb, rather than as a separate word; we must account for what this *something* is! More on this later.)

- NOTE: people sometimes use the terms **I(P)** instead of **T(P)**
  - these are two different names for the same thing

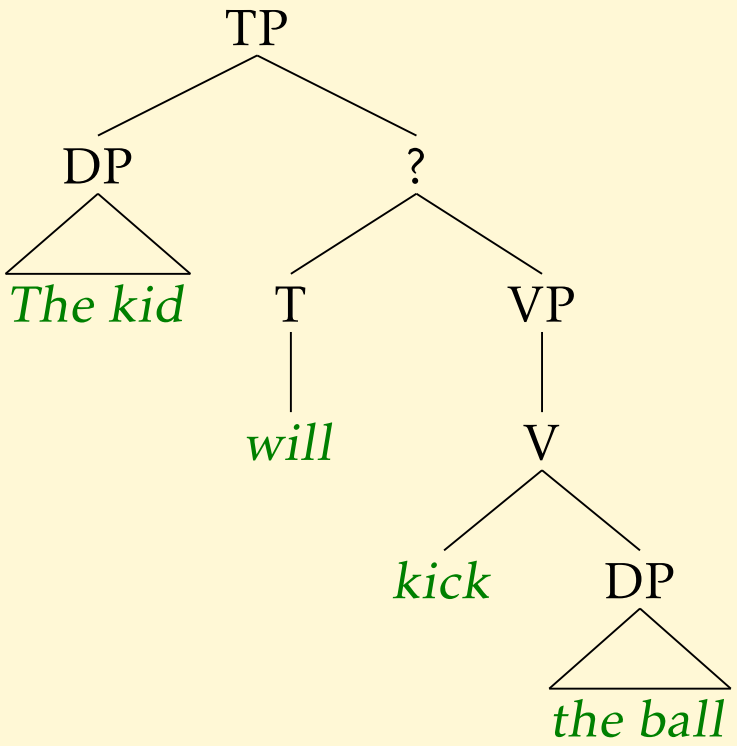
Binary branching vs. "flat" structures

- We can now ask the same question about TPs that we asked earlier about DPs:

(20) *"FLAT"*



(21) *BINARY BRANCHING*



Binary branching vs. "flat" structures

- There might be some theoretical reasons to prefer the *binary branching* alternative (e.g., (21))
  - For example, it could be argued that a system that allows only *binary branching* nodes is somehow "simpler" than a system that allows both *binary branching* nodes and *ternary branching* ones

➢ But we're all about ***external evidence***, here!

(22) a. John will [eat an apple and drink a soda].

b. John will eat [an apple or a peach].

- Constructions like (22a–b) are called *coordinations*

Binary branching vs. "flat" structures

- Compare (22a–b) with the following examples:

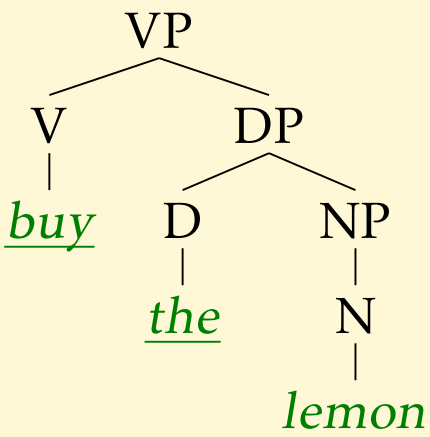
(23) a. ?? John will buy the and sell the lemon.

b. ?? Mary will read a report on or a column about it.

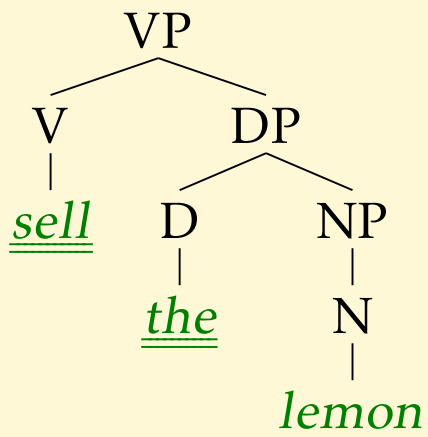
***QUESTION*:** Why are (23a–b) significantly worse than (22a–b)?

***ANSWER*:** (23a–b) are coordinations of strings that **are not constituents**

(24) a.



b.



➢ There is no single node that dominates *buy the* and nothing else

≡ *buy the* is not a constituent

(and the same is true for *sell the*)

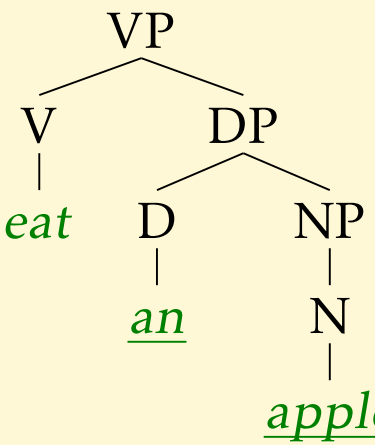
Binary branching vs. "flat" structures

- This contrasts with the examples in (22a–b), repeated here:

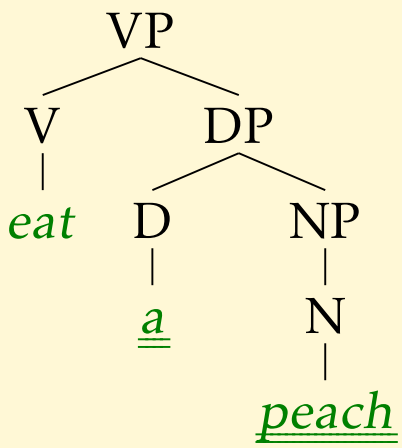
(22) a. John will [eat an apple and drink a soda].
b. John will eat [an apple or a peach].

- In (22a–b), we are coordinating **constituents** (VPs and DPs, respectively)
- To see this, let us consider (22b) in more detail:

(25) a.



b.



➢ There is a single node that dominates *an apple* and nothing else (namely, the DP node) ≡ *an apple* is a constituent
(and the same is true for *a peach*)

⇒ *coordination* is a **constituency test**

A CAVEAT

Given a coordination that we expect to be infelicitous, prosody and/or intonation can sometimes (though not always) be manipulated to render it felicitous.

(26) John tweeted about, and Mary wrote an extensive report on, the meeting that took place the day before yesterday.

(an example of a phenomenon known as *Right Node Raising*, or *RNR*)

- This example has essentially the same structure as (23b), above:
  - the conjunct *tweeted about* consists of a V and a P, without the DP complement of P

    ⇒ not a constituent

➢ but the prosodic structure of (26) (orthographically represent using commas) makes it felicitous, nonetheless

Binary branching vs. "flat" structures

However…

I. We can still use *coordination* as a constituency test, if we are careful to "trust" only those coordinations that don't require special intonation

II. There are coordinations that no amount of prosody and/or intonation can rescue

- e.g., (23b), repeated here:

(23) b. * Mary will read a report on, or a column about, it.

Binary branching vs. "flat" structures

- With this baseline in place, let's take a closer look at the T(ense)P(hrase):

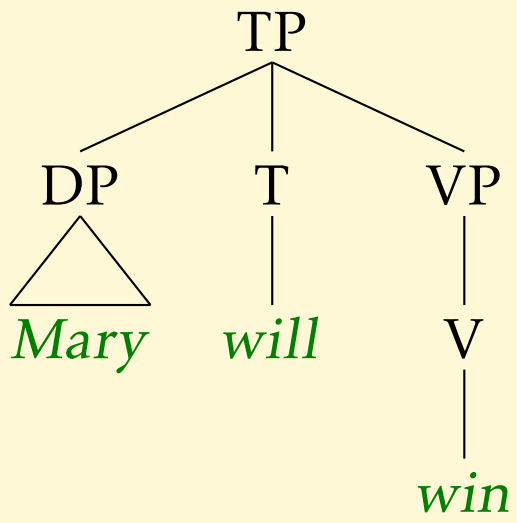
(27) a. Mary has trained and will win.

b. ?? John might and Mary will win.

Observations:

- Suppose the "flat" structure for TPs is correct:

(28)

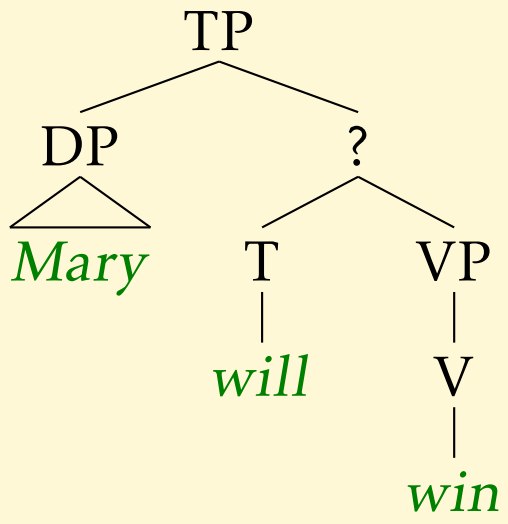


- First, according to (28), neither *will win* nor *Mary will* should be constituents
  - ⇒ neither (27a) nor (27b) should be grammatical — contra to fact
- Second, even if our theory of *coordination* were entirely wrong (which it's probably not) —
  - it seems there wouldn't be any other way to capture the difference between (27a) and (27b), in structural terms

Binary branching vs. "flat" structures

- On the other hand, if the *binary branching* structure for TPs is correct:

(29)



Given (29):

- There is a node (the one labeled '?') which dominates *will win* and nothing else
  ⇒ *will win* **is** a constituent
- In contrast, there is no node that dominates *Mary will* and nothing else
  ⇒ *Mary will* **is not** a constituent

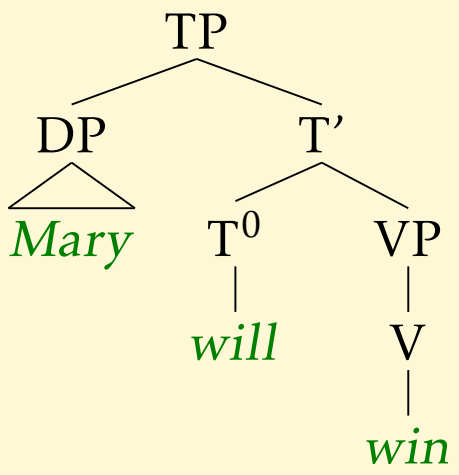
⇒ the *binary branching* structure has better empirical coverage

- What's left is to name this '?' node
  - It's not the entire phrase — that's TP; and it's not the head — that's T

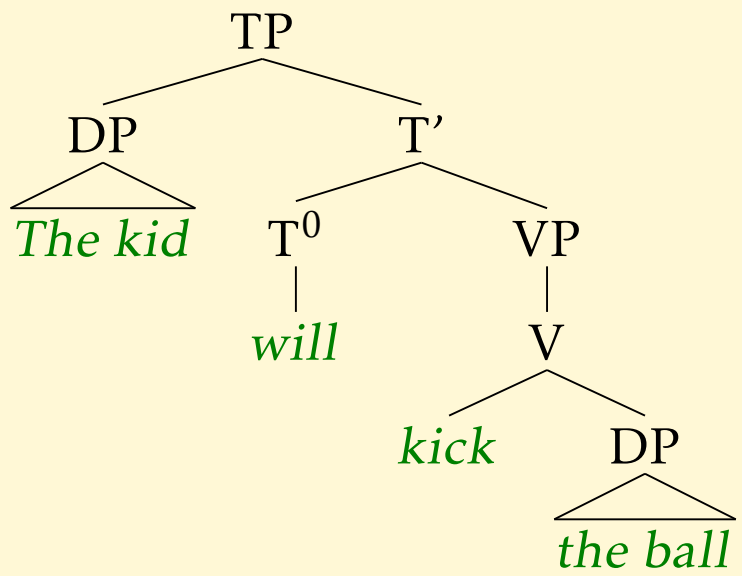
  ⇒ so we call it **T'** (sometimes written as $\overline{\mathbf{T}}$, or "**T-bar**")
    - and to make sure we don't confuse T (the head) with T', we start start calling the head $\mathbf{T^0}$

⇒ Here's what our trees now look like:

(30)



(31)

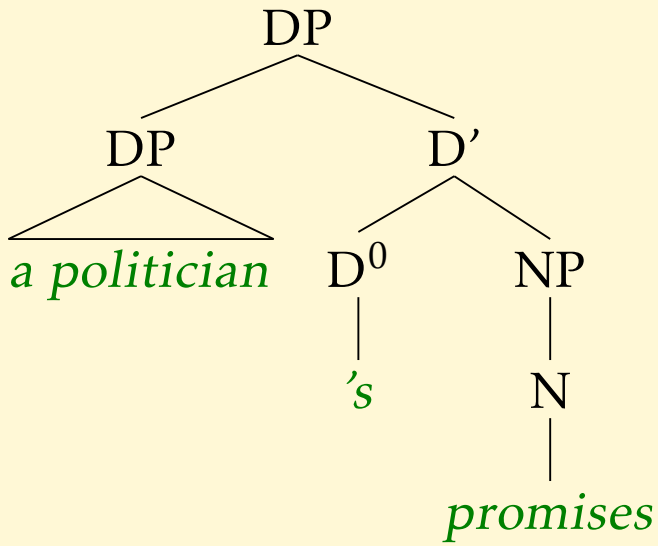


➢ We have seen detailed motivation for this articulated structure for **TPs**

- As before, we'll skip ahead, and ***assume*** (for pedagogical purposes) that we've looked at other categories
  - and been convinced that the same schema should apply to those categories, as well *(as always, evidence available upon request)*

- So, for example, we can now draw an articulated structure for DPs that contain possessors, along the same lines:

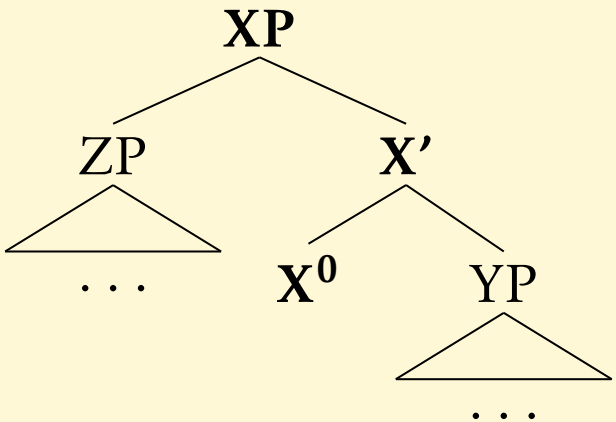
(32)



- NOTICE:
  the DP *[$_{DP}$ a politician]* is a separate DP
  - which is embedded within the larger DP in (32)
    (just like *[$_{DP}$ the kid]* was embedded within the larger TP in (31))

- The general schema that emerges from this is known as the ***X'-schema*** (***$\overline{X}$-schema***, ***X-bar schema***):

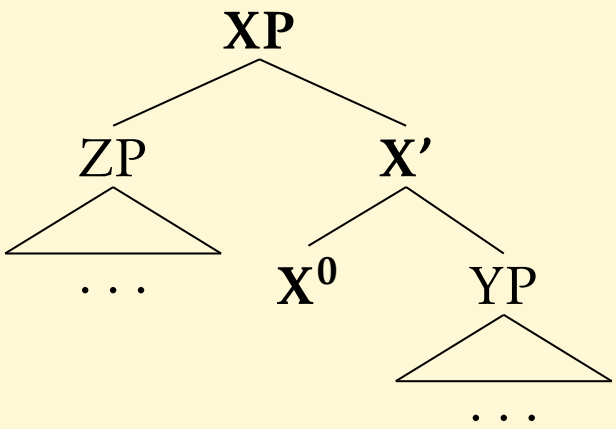
(33) *THE X'-SCHEMA*



- If X is some syntactic category — e.g., T(ense), D(eterminer), V(erb), N(oun), etc. — then:
  - **X^0** is the ***head***
  - X^0 takes some phrasal constituent (YP) as its ***complement***
    - forming an *intermediate* constituent, **X'**
  - **X'** then merges with another phrasal constituent (ZP)
    - forming the constituent that is the **XP** phrase
  - Just like YP (the sister of **X^0**) is known as the ***complement***, ZP (the sister of **X'**) is known as the ***specifier***

- The general schema that emerges from this is known as the ***X'-schema*** (***$\overline{X}$-schema, X-bar schema***):

(33) *THE X'-SCHEMA*

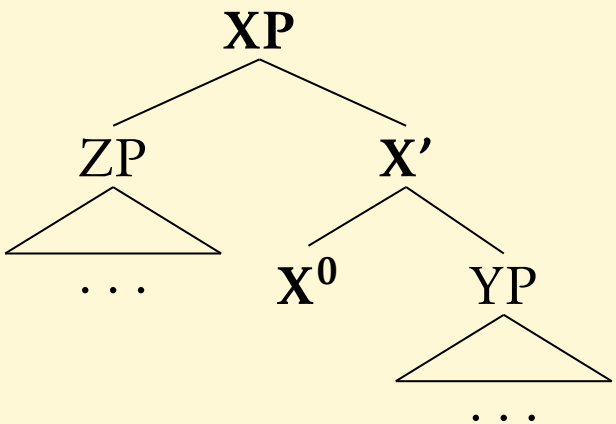


- Neither Y nor Z actually have to be a different category than **X**
  - as demonstrated in the DP in (32), *[$_{DP}$ [$_{DP}$ a politician]'s promises]*
    - whose specifier is another DP (the "possessor" of the larger DP)

- but even if Y or Z are the same *category* as **X**, they are still different *instantiations* of that category
  - e.g., the "possessor" in (32) — *[$_{DP}$ a politician]* — is its own DP
    - distinct from the entire (possessed) DP, *[$_{DP}$ a politician's promises]*

- The general schema that emerges from this is known as the ***X'-schema*** (***$\overline{X}$-schema, X-bar schema***):

(33) *THE X'-SCHEMA*



- Some more terminology:
  we call X^0, X', and XP the ***projections*** of X
  - **X^0** is the ***minimal projection***
  - **X'** is the ***intermediate projection***
  - **XP** is the ***maximal projection***

⇒ ***heads ≡ minimal projections***
phrases ≡ maximal projections

- **NOTICE:** There is little (if anything) new on the current slide, theoretically speaking!
  - terminology can be scary, but it's still just terminology ☺

- Finally, just like we saw with ***complements***, sometimes ***specifiers*** are present and sometimes they are absent

(34) *(SOME) COMPLEMENTS ARE OPTIONAL*

a. John has $[_{VP}$ eaten$_{(V^0)}]$. – no complement to V^0

b. John has $[_{VP}$ eaten$_{(V^0)}$ $[_{DP}$ an apple$]$ $]$. – with complement to V^0

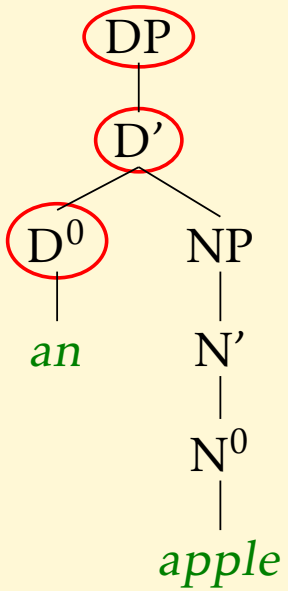
(35) *(SOME) SPECIFIERS ARE OPTIONAL*

a. $[_{DP}$ $[_{D'}$ an$_{(D^0)}$ $[_{NP}$ apple$]$ $]$ $]$ – no specifier for DP

b. $[_{DP}$ $[_{DP}$ Bill$]$ $[_{D'}$'s$_{(D^0)}$ $[_{NP}$ apple$]$ $]$ $]$ – with specifier for (outer) DP

- and just like we did for ***complements***, we can draw the relevant levels of structure whether these elements are present or not

(36) a.



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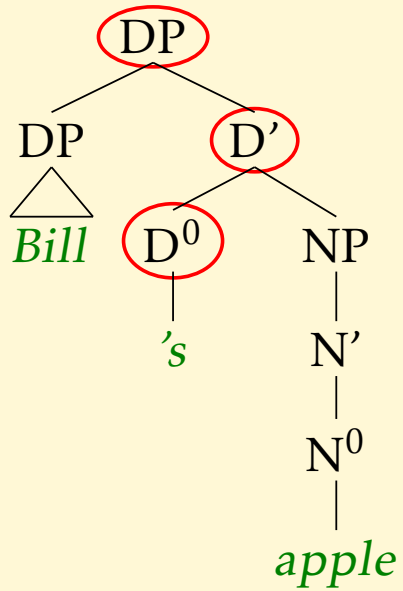

- ➢ i.e., **D^0**, **D'** and **DP** are all represented
  - – whether there is a specifier (as in (36b)) or not (as in (36a))
- ◦ in contrast to the XP-level, we <u>will</u> sometimes graphically omit the X'-level if there is no ***specifier***

References

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