CAS LX 522
Syntax I

do-support, verb movement, parameters
(5.5; 6.1-6.2)

10

French vs. English

In English, adverbs cannot come between the verb and the object.

1) *Pat eats often apples.
2) Pat often eats apples.

In French it's the other way around.

3) Jean mange souvent des pommes.
   Jean eats often of.the apples
   'Jean often eats apples.'
4) *Jean souvent mange des pommes.

If we suppose that the basic structures are the same, why might that be?

French vs. English

Similarly, while only auxiliaries in English show up before negation (*not*)…

- John does **not love** Mary.
- John **has not** eaten apples.

…all verbs seem to show up before negation (*pas*) in French:

- Jean (n')**aime pas** Marie.
  Jean (ne) loves not Marie
  'Jean doesn't love Marie.'
- Jean (n')**a pas** mangé des pommes.
  Jean (ne)has not eaten of.the apples
  'Jean didn't eat apples.'

V raises to T in French

What it looks like is that both V and auxiliaries raise to T in French.

This is a **parametric difference** between English and French.

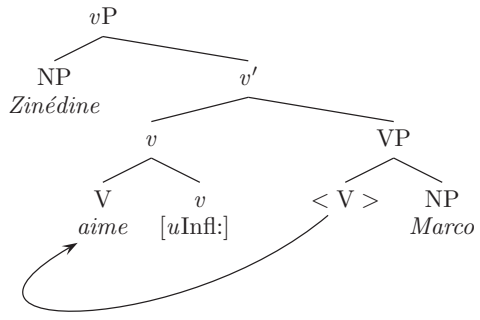
A kid's task is to determine whether V moves to T and whether auxiliaries move to T.

	T values [*u*Infl:] on Aux	T values [*u*Infl:] on *v*
English	Strong	Weak
French	Strong	Strong

Zinédine (n') aime pas Marco

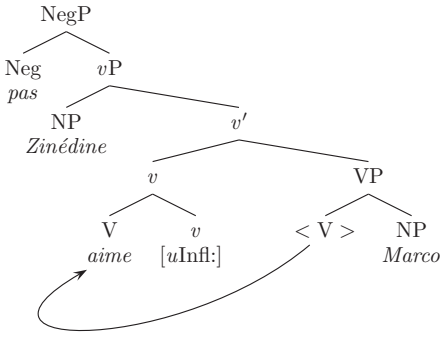
First, build the *v*P just as in English.

- Merge *aime* and *Marco* to form the VP, Merge *v* and VP to satisfy the HoP, move V to Adjoin to *v* to check *v*'s [*u*V*] feature, Merge *Zinédine* and *v*′.



Zinédine (n') aime pas Marco

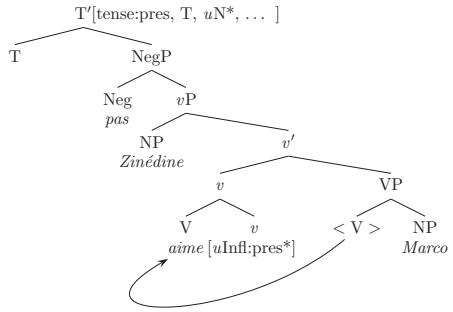
Merge Neg with *v*P to form NegP (following the HoP).



Zinédine (n') aime pas Marco

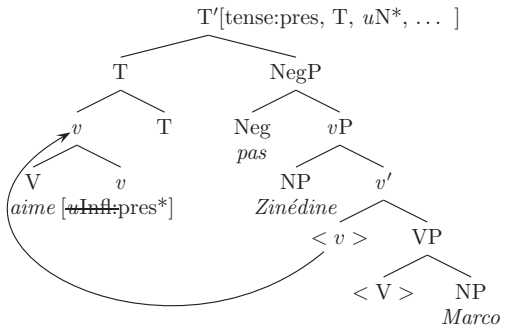
Merge T with NegP to form T′ (again, following the HoP).

- Now T with its [tense:pres] feature c-commands *v* and its [*u*Infl:] feature. They Match. **But** in French, when [*u*Infl:] on *v* is valued by T it is **strong**. So…



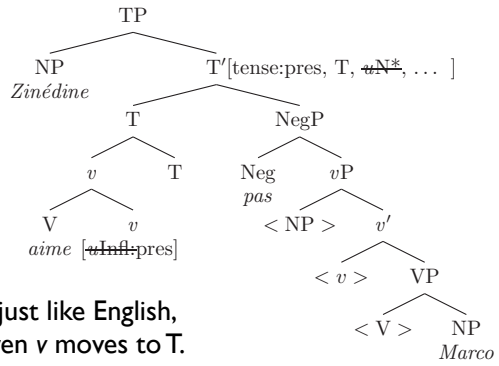
Zinédine (n') aime pas Marco

v has to move to T. Notice that at this point *v* has V adjoined to it. **You can't take them apart.** The whole **complex head** moves to T.



Zinédine (n') aime pas Marco

And then, we move the subject up to SpecTP to check the final uninterpretable (strong) feature of T, [*u*N*].



So, French is just like English, except that even *v* moves to T.

Swedish

Looking at Swedish, we can see that not only do languages vary on whether they raise main verbs to T, languages also vary on whether they raise auxiliaries to T:

- …om hon **inte köpte** boken
  whether she not bought book-the
  '…whether she didn't buy the book.'
- …om hon **inte har** köpt boken
  whether she not has bought book-the
  '…whether she hasn't bought the book.'

So both parameters can vary.

- Remember the light box: By saying these were parameters, we predicted that we would find these languages.

Typology of verb/aux raising

Interestingly, there don't seem to be languages that raise main verbs but not auxiliaries.

- This double-binary distinction predicts there would be.
- It overgenerates a smidge.

This is a pattern that we would like to explain someday, another mystery about Aux to file away.

- Sorry, we won't have any satisfying explanation for this gap this semester.

	T values [*u*Infl:] on Aux	T values [*u*Infl:] on *v*
English	Strong	Weak
French	Strong	Strong
Swedish	Weak	Weak
Unattested	Weak	Strong

Irish

In Irish, the basic word order is VSO (other languages have this property too, e.g., Arabic)

1) Phóg Máire an lucharachán.
   kissed Mary the leprechaun
   'Mary kissed the leprechaun.'

- We distinguish SVO from SOV by supposing that the head-complement order can vary from language to language (heads precede complements in English, heads follow complements in Japanese).
- We may also be able to distinguish other languages (OVS, VOS) by a parameter of specifier order.
- But *no* combination of these two parameters can give us VSO.

Irish

But look at auxiliary verbs in Irish:

1) Tá Máire ag-pógáil an lucharachán.
   is Mary ing-kiss the leprechaun
   'Mary is kissing the leprechaun.'

We find that if an *auxiliary* occupies the verb slot at the beginning of the sentence, the main verb appears between the subject and verb: **Aux S V O**.

What does this suggest about

The head-parameter setting in Irish?

How VSO order arises?

SVO to VSO

- Irish appears to be essentially an SVO language, like French.

  Verbs and auxiliaries raise past the subject to yield VSO.

- We can analyze the Irish pattern as being minimally different from our existing analysis of French— just one difference, which we hypothesize is another parametric difference between languages.

  V and Aux both raise to T (when tense values the [*u*Infl:] feature of either one, [*u*Infl:] is strong) in Irish, just as in French.

French vs. Irish

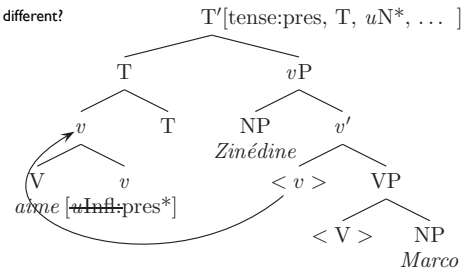
Remember this step in the French derivation before?
(I've omitted negation to make it simpler.)

- **What if we stopped here?**

  In French it would crash (why?).

  But what if it didn't crash in Irish?

  What would have to be different?



Parametric differences

We could analyze Irish as being just like French except without the strong [*u*N*] feature on T.

Without that feature, the subject doesn't need to move to SpecTP.
The order would be VSO, or AuxSVO.

So, languages can vary in, at least:

- Head-complement order
- (Head-specifier order)
- Whether [*u*Infl:] on Aux is strong or weak when valued by T
- Whether [*u*Infl:] on *v* is strong or weak when valued by T
- Whether T has a [*u*N*] feature or not.
  (Later, when we look at German, we'll suggest a different analysis of Irish, but this will work for now.)

do-support

In French, verbs move to T. In English, they *don't* move to T.

That's because in French, when [tense:past] values [*u*Infl:] on *v*, it is strong, and in English, it is weak.

What this *doesn't* explain is why *do* appears sometimes in English, seemingly doing nothing but carrying the tense (and subject agreement).

- The environments are complicated:
  1) Tom **did** not **commit** the crime.
  2) Tom did not commit the crime, but someone **did**.
  3) Zoe and Danny vowed to prove Tom innocent, and prove Tom innocent they **did**.
  4) Tom (has) never **committed** that crime.

do-support

- The environments are complicated:
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When *not* separates T and *v*, *do* appears in T to carry the tense morphology.

When T is stranded due to VP ellipsis or VP fronting, *do* appears in T to carry the tense morphology.

When *never* (or any adverb) separates T and *v*, tense morphology appears on the verb (*v*).

So, *do* appears when T is separated from the verb, but adverbs like *never* aren't "visible", they aren't in the way.

Technical difficulties

How do we generally know to pronounce V+*v* as a past tense verb?

T values the [*u*Infl:] feature of *v*. The presumption is that *eat* +*v*[*u*Infl:past] sounds like "ate." And T doesn't sound like anything.

But this happens whether or not *v* is right next to T. *v* still has a [*u*Infl:] feature that has to be checked.

So, the questions are, how do we:

Keep from pronouncing the verb based on *v*'s [*u*Infl:] feature if T isn't right next to it?

Keep from pronouncing *do* at T if *v* is right next to it?

We need to connect T and *v* somehow.

Technical difficulties

The connection between T and *v* is that (when there are no auxiliaries), T values the [*u*Infl:] feature of *v*.

This sets up a relationship between the two heads.

Adger calls this relationship a **chain**.

We want to ensure that tense features are pronounced in exactly one place in this chain.

If the ends of the chain are not close enough together, tense is pronounced on T (as *do*). If they are close enough together, tense is pronounced on *v*+V.

Technical difficulties

Let's be creative: Suppose that the tense features on *v* (the value of the [*u*Infl:] feature) "refer back" to the tense features on T.

Agree can see relatively far (so T can value the [*u*Infl:] feature of *v*, even if it has to look past negation).

But "referring back" is more limited, basically only available to features that are sisters. Negation will get in the way for this.

So if you try to pronounce tense on *v* but T is too far away, the back-reference fails, and *v* is pronounced as a bare verb. But the tense features have to be pronounced somewhere, so they're pronounced on T (as *do*).

PTR

Adger's proposal:

Pronouncing Tense Rule (PTR)
In a chain (T[tense], *v*[*u*Infl:tense]), pronounce the tense features on *v* only if *v* is the head of T's sister.

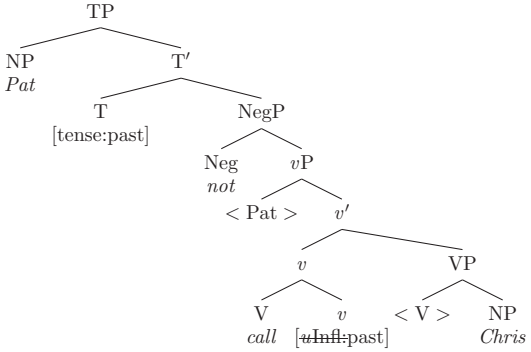
NegP, if there, will be the sister of T (HoP), but Neg has no [*u*Infl:] feature. *do* will be inserted.

Adverbs adjoin to *v*P, resulting in a *v*P. *v* has a [*u*Infl:] valued by T and adverbs don't get in the way of *v*P being the sister of T. Tense is pronounced on the verb (*v*).

If *v*P is gone altogether, *do* is inserted.

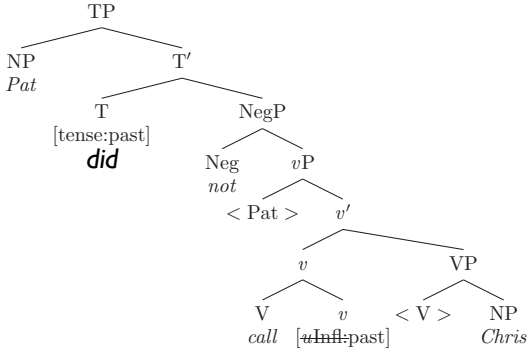
Pat did not call Chris

So, here, T and *v* form a chain because [tense:past] valued [~~*u*Infl~~:past]. But *v* is not the head of T's sister.



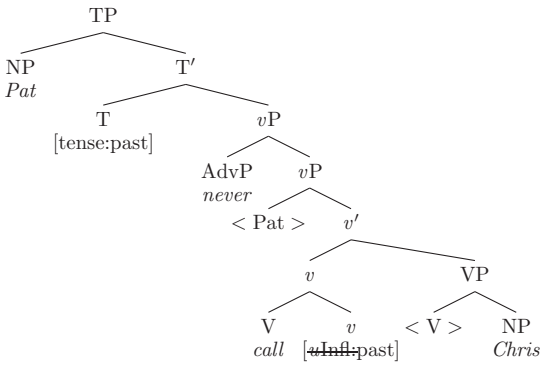
Pat did not call Chris

Do-support comes to the rescue. What this means is just that T is **pronounced** as *do* with the tense specifications on T. According to PTR, we don't pronounce them on *v*. **The tree doesn't change**.



Pat never called Chris

If there is an adverb like *never*, PTR still allows tense to be pronounced on *v* (so T doesn't have any pronunciation of its own at all).

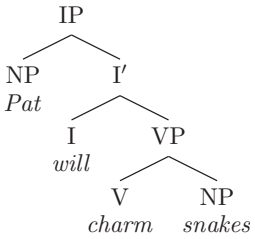


Historical interlude

Back in the days of yore, people hypothesized that *Pat will charm snakes* had a structure like this.

The subject NP *Pat* was in the specifier of "IP" (what we call "TP"), and the VP contained only the verb *charm* and the object NP *snakes*.

Pat got an Agent θ-role by being in SpecIP, even though the fact that there is an Agent θ-role to be had is determined by the verb down in the VP.



The students will all...

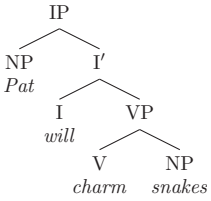
This predicts the normal word order pretty well, and so it was hypothesized that the verb simply assigned one of its θ-roles directly to SpecIP.

- No big deal, syntax works in strange and mysterious ways.

At a certain point, someone started thinking about sentences like these:

1) All the students will take the exam.
2) The students will all take the exam.

- It's fairly clear here that *all the students* is an NP, that it forms a coherent unit, a coherent concept. *All* really belongs with *the students*.



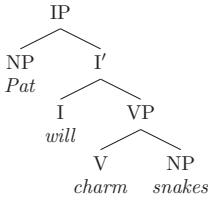
Floating quantifiers

1) All the students will take the exam.
2) The students will all take the exam.

Back in the even older days, the hypothesis was that there was a special rule that turned the first sentence into the second.

The **Quantifier Float** rule would move *all* over to the right, next to the VP.

- *all* NP … VP → NP … *all* + VP



Only some quantifiers float

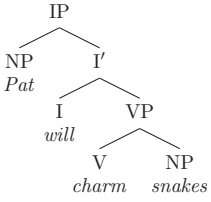
Quantifiers: *every*, *some*, *all*, *most*, *several*, *many*, *both*, *four*, …

1) Every student will take the exam.
2) *Student will every take the exam.
3) Several students will take the exam.
4) *Students will several take the exam.

- It works for *both* and *all*:

5) The students will both take the exam.
6) The students will all take the exam.

- What's a difference between *every*, *some*, *several*, *many*, and *both*, *all*?

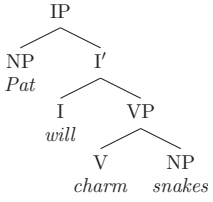


Leaving all behind

Upon further reflection, some enterprising syntacticians hit upon the idea that rather than floating *all* to its position next to VP, *all* might instead have been "left behind" by a subject that had moved.

- will [all [the students]] take the exam.
- [all [the students]]$_i$ will t_i take the exam.
- [the students]$_i$ will [all t_i] take the exam.

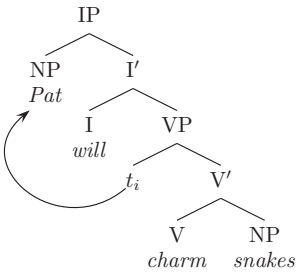
- And why would all the students have been down there? Well, that would simplify assignment of θ-roles.



The VP-Internal Subject Hypothesis

- The verb (head of VP) can assign θ-roles to other things within the VP, which is a natural explanation for how the choice of verb controls whether an Agent θ-role is assigned or not.

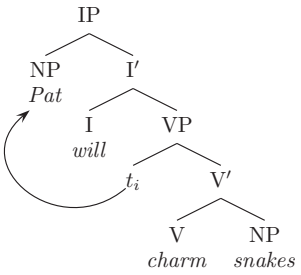
  This idea became known as the **VP-Internal Subject Hypothesis**.



The VP-Internal Subject Hypothesis

For us, we've supposed from the beginning that assignment of θ-roles is necessarily local. This may not seem like a very surprising hypothesis.

But it was at the time a rather unintuitive idea, and so various people set out to see if some of the predictions this makes are borne out in the grammatical data.



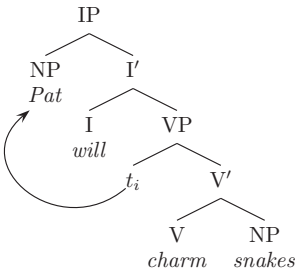
The VP-Internal Subject Hypothesis

- It turns out that as people looked, there were reasons to believe this.

  The new analysis of Quantifier Float no longer relies on an idiosyncratic rule of English, but more general principles.

  The assignment of θ-roles can now be more directly related to the properties of the verb.

  And we can make sense of *there* constructions in a more straightforward way.



Back to the present

The basic components of the quantifier "stranding" phenomenon are:

All the students is a constituent. *The students* is an NP inside *all the students*.

- [all [$_{NP}$ the students]]

Either *all the students* or just *the students* can move to SpecTP, to satisfy the [*u*N*] feature of T.

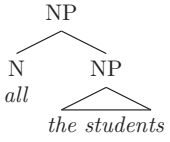
So *all the students* and *the students* are both NPs.

- [$_{NP}$ all [$_{NP}$ the students]]

So *all* is essentially a noun, but one that takes an NP complement (*all*: [N, *u*N*, …]).

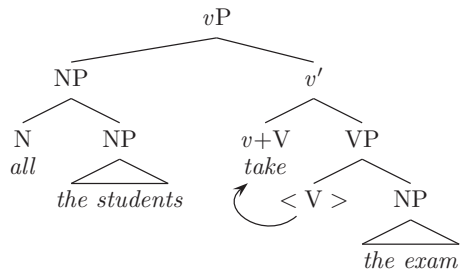
- We're assuming here that *all* is not an adjunct, but in fact a head, taking the NP as a complement. Why?

Quantifier stranding is still often referred to as "quantifier float" to this day, even though the name no longer reflects the analysis.



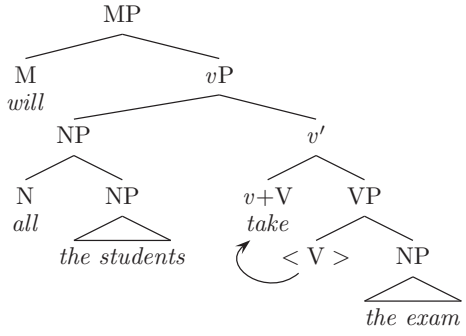
All the students will take...

- We start by building our *v*P.
  - Merge the NP *the exam* and the V *take* (checks [*u*N*] on V)
  - Merge *v* and VP (HoP)
  - Move V to *v* (checks [*u*V*] on *v*)
  - Merge the N *all* and the NP *the students* (checks [*u*N*] on *all*)



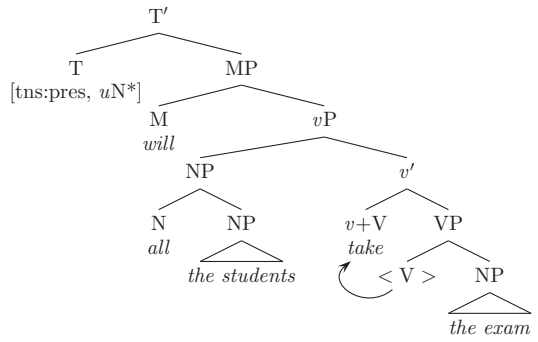
All the students will take...

- We Merge the M *will* with *v*P (HoP)
  - This values [*u*Infl:] on *v* as [~~*u*Infl:~~M].



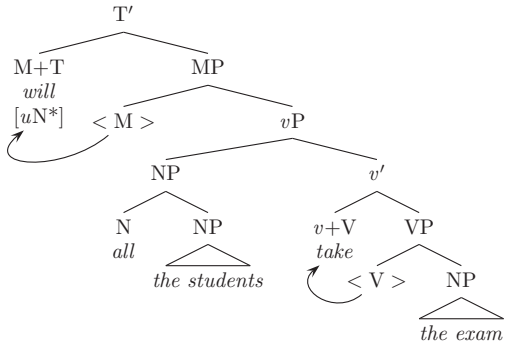
All the students will take...

- We Merge the T with MP (HoP)
  - This values [*u*Infl:] on M as [*u*Infl:pres*] (strong).



All the students will take...

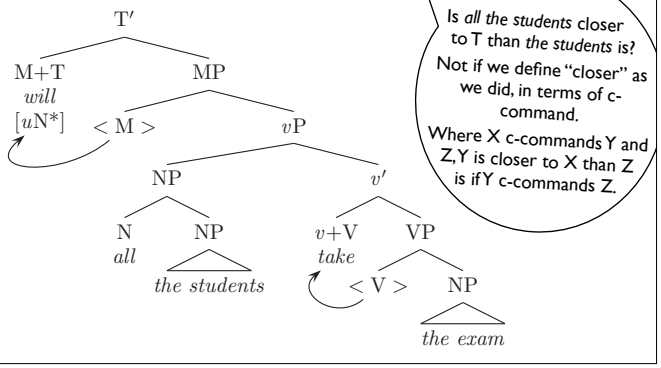
- We move M up to T
  - This checks the strong [*u*Infl:pres*] on M.



All the students will take...

- Now, there are two possibilities:

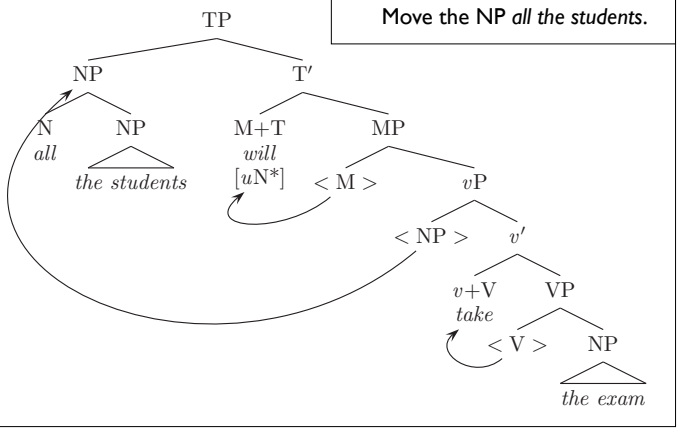
Move the NP *all the students*.
Move the NP *the students*.



Is *all the students* closer to T than *the students* is?
Not if we define "closer" as we did, in terms of c-command.
Where X c-commands Y and Z, Y is closer to X than Z is if Y c-commands Z.

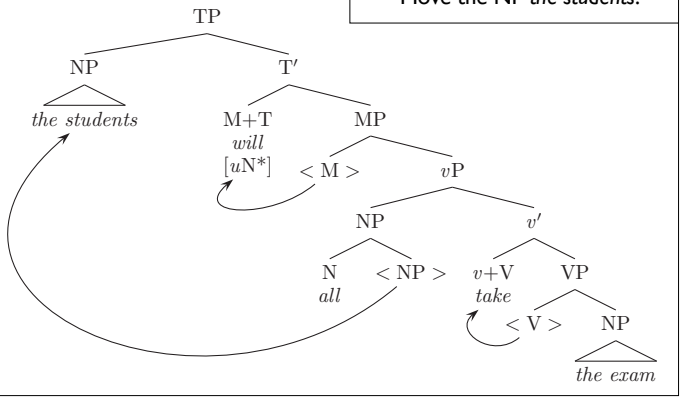
All the students will take...

Move the NP *all the students*.



The students will all take...

Move the NP *the students*.



Expletive constructions

An **expletive** is an element that can be in subject position without having received a θ-role from anywhere.

- **It** had been raining.
- **There** were fans rioting on Comm Ave.

Expletive constructions

1) There were fans rioting on Comm Ave.
2) Fans were rioting on Comm Ave.