Specifiers, adjuncts, and clause structure I

Introduction to Syntax, Lecture 8

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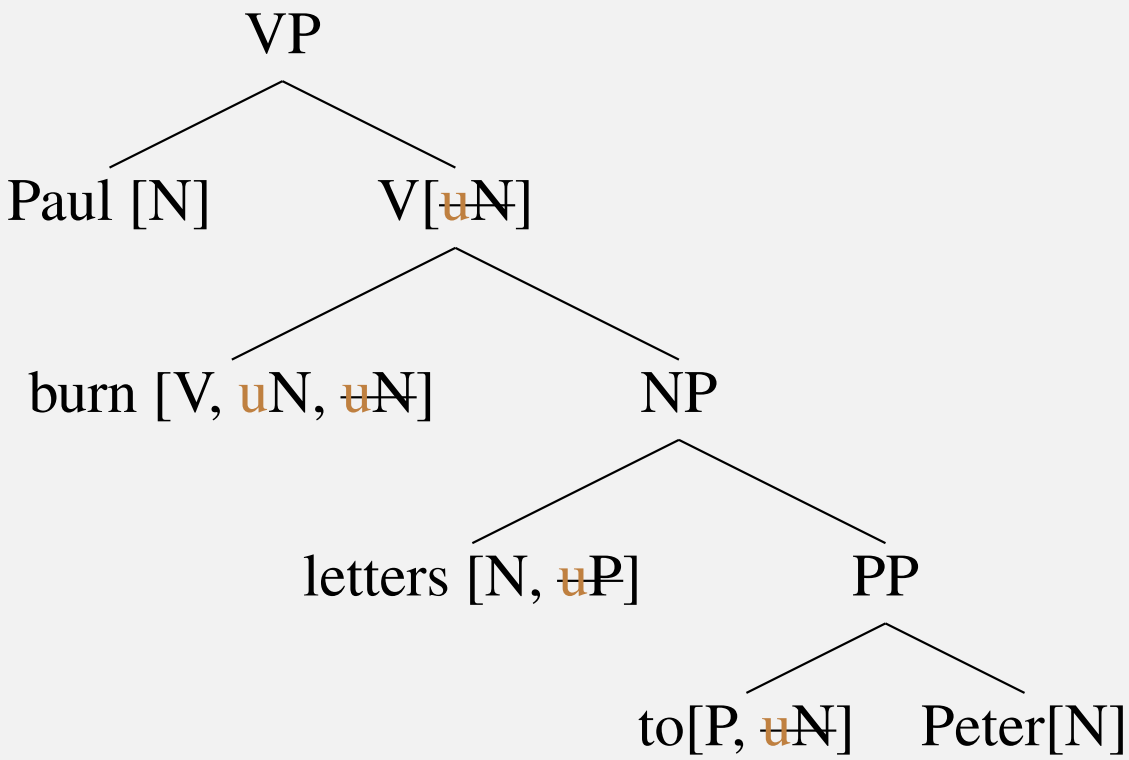
Specifiers

Something different happens when we add the subject:

(1) Paul burns letters to Peter.

(2)



- Paul is selected here by one of the [uN] features on burn. But it doesn't Merge directly with burn.
- Instead, it Merges with a higher projection, after burn has already Merged with leters to Peter.
- The thing that Paul merges with is neither maximal nor minimal. We'll call it an intermediate projection, which we sometimes indicate as $\bar{X}$ or X', pronounced X-bar.

☞ Something which is selected by and Merges with an $\bar{X}$ level projection is called a specifier.

Adjuncts

(3) Ellie demonized Anna every day.

- every day doesn't seem to get a θ-role from demonize or from anything else, i.e. it isn't selected.
- Instead of supplying necessary information, filling in a hole in a predicate, it gives extra information, modifying what would already be a proposition.

As such, every day is entirely optional, and could be left off or replaced by any number of other modifiers:

(4) Ellie demonized Anna at the club.
(5) Ellie demonized Anna almost certainly.
(6) Ellie demonized Anna very happily.

☞ We call such modifiers adjuncts.

Note that the concept of adjunct, like complement and specifier, is not about syntactic category.

- every day is an NP, at the club is a PP, and almost certainly and very happily are AdvPs.
- So just like we have a structural definition of complement and specifier, we'll need a structural definition of adjunct.

Here's the approach we'll take:

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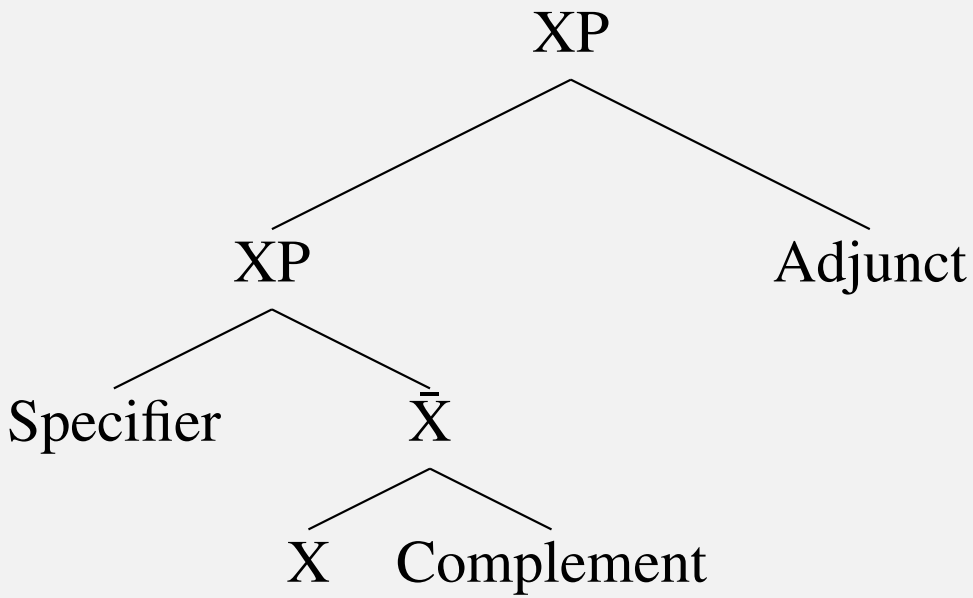

- Adjuncts are sisters and daughters of maximal projections.
- This reflects the fact that no selectional feature is checked, and captures the fact that adjuncts are optional and recursive, i.e. you can have as many as you want.
- It also is in line with the idea that you can't add adjuncts to a structure until all of its dependent features have been checked.

If adding an adjunct doesn't affect the syntactic features of the object it's added to, it shouldn't affect that object's syntactic distribution. Here's some evidence that this is correct:

(8) Burn the letters (quickly)!
(9) I burnt the letters (quickly).
(10) I plan to burn the letters (quickly).
(11) * Burn the letters (quickly) is the best thing to do.
(12) Burning the letters (quickly) is the best thing to do.

Adjuncts raise a technical issue that we'll have to worry about:

- Until now, the determination of the head when two items Merge – and hence what projects – has been based on which object triggers Merge via its selectional feature.
- But adjunction doesn't involve selection, so our existing procedure won't work here.
- Clearly we want the object adjoined to – and not the adjunct – to project its features, but of course it can in no way be responsible for the adjunction operation.

There are a number of different ways to approach this issue, none of which is obviously better than the others, so at this point we won't propose anything that pretends to be insightful.

- Instead we'll simply stipulate that adjuncts are marked with a feature [Adjunct] – a plain admission that there is something we don't yet understand here.
- Then for completeness we can revise our definition of headedness, again with the ugly disjunctive formulation serving as an indication that we have work to do:

(13) Headedness (revised)
When two objects Merge, the object that will project its features to the newly created object is

i. the one that selects the other, if selection is involved
ii. otherwise, the one that does not bear an [Adjunct] feature.

The structure of VP

Here's how a full VP might look in our system:

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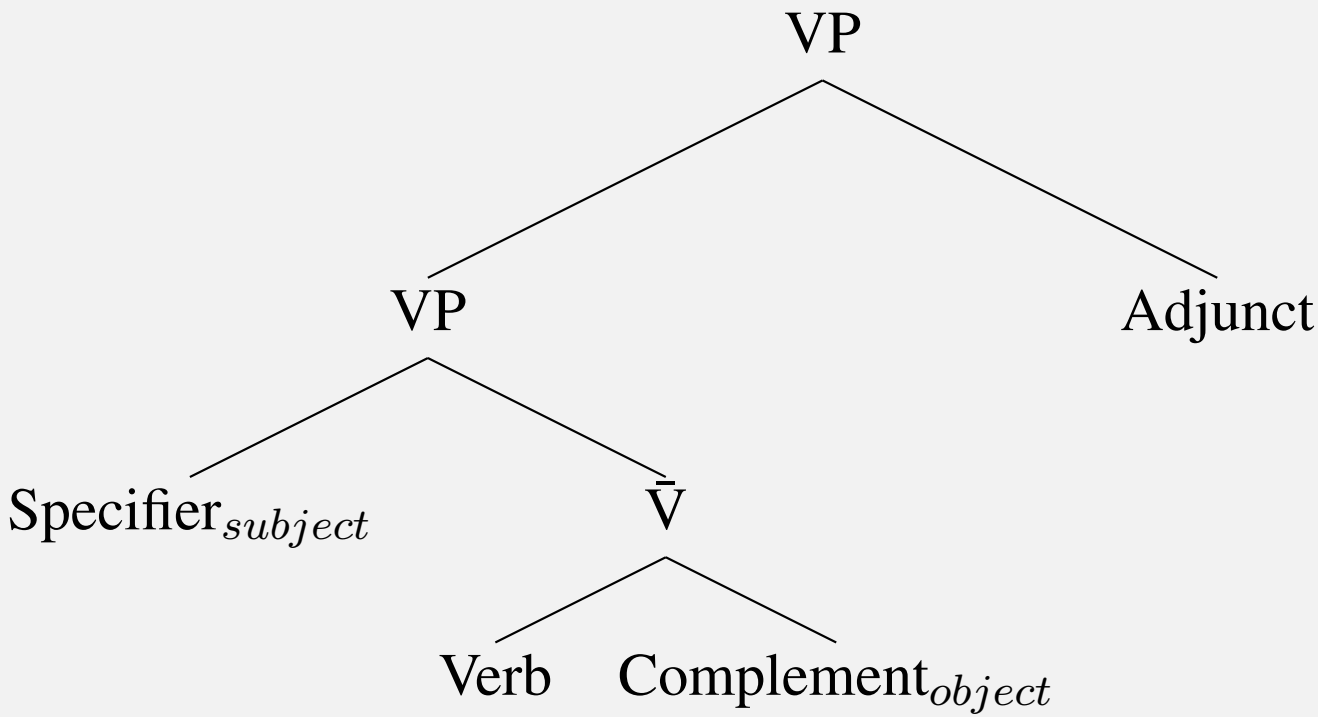


This raises an issue:

- ☞ To derive such a VP with two arguments, the V would have to have two [uN] selectional features.

But this raises another problem!

The problem is:

? How do we make sure that the features get checked in the right order, i.e. how do we get the correct θ-roles to the complement and specifier?

As usual, there are many ways we could proceed, and it is difficult to know in advance which approach will be correct. Here are some options:

(i) Introduce a new mechanism to manage the θ-roles that lexical items carry and ensure that they are always assigned in the correct order.

(ii) A different solution which avoids adding any new mechanisms and allows us to maintain an extremely simple account of θ-role assignment, but adds complexity to the structure of the verb phrase (this is the strategy we'll follow!).

☞ Ultimately, the choice between (i) vs. (ii) will depend on what additional empirical coverage can be achieved with their respective additional complexities.

Introducing *v*

Our goal is to retain the following maximally simple version of θ-role assignment:

(15) Blind θ-role assignment:
θ-roles are assigned blindly upon Merge of a θ-role assigner with an object of the correct syntactic category.

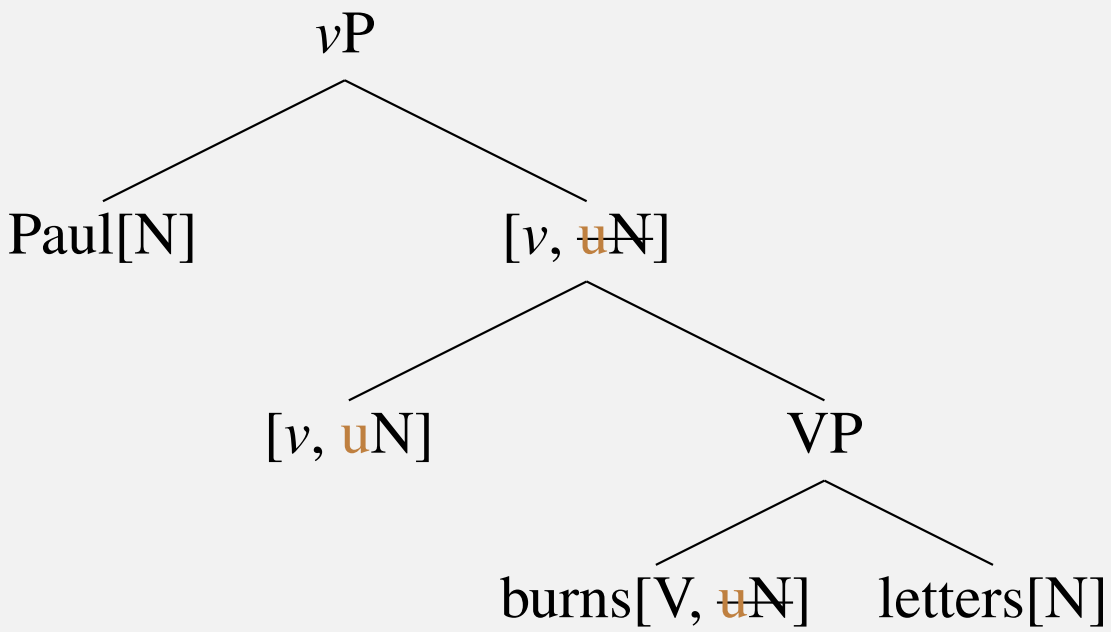
- I.e. θ-role assignment cares only about selection and the related categorial features.
- This means that, if a head selects two instances of the same category, there is no way to distinguish them in terms of θ-role.
- This implies that a single head should never select two instances of the same category.

So what do we do about transitive verbs?

- If we have two NPs getting θ-roles, and each head can only assign a θ-role to one instance of a particular syntactic category, then there must be two heads.
- I.e. we're going to propose that typical verbs actually involve two syntactic heads, one selecting the object, and the other selecting the subject.
- We'll continue to call the lower head V, and this is where we'll put the distinct lexical element.
- We'll call the upper head *v*, pronounced 'little vee'.

Here's what a simple transitive will look like then:

(16)



- burns has a uN feature, so it can Merge with the object letters and assign to it its θ-role.
- *v* also has a uN feature. It first Merges with VP, projecting its features up to the next level, where it Merges with Paul and assigns to it its θ-role.

That solves the θ-role problem, but raises some new questions:

- ? What is the independent motivation for *v*? Does it contribute anything else beyond the extra θ-role?
- ? What makes *v* Merge with V, and how do we determine that *v* should be the head rather than V?
- ? How does the *v*-V combination behave for purposes of pronunciation?

Motivating *v*

Consider first that basic constituency tests show that the object is closer to the verb than the subject is:

(17) [Eat a grasshopper] I never would.

(18) * [I/me eat] never would a grasshopper.

(19) Ellie will [eat a grasshopper] and I will [~~eat a grasshopper~~] too.

(20) * Will [you eat] a grasshopper or will [~~you eat~~] a wolverine?

- Now, we can model this asymmetry by simply saying that the verb first Merges with the object and then the subject.
- But we again have no explanation for why that should always be the order if subject and object are symmetrical in both getting their θ-roles from the verb.
- On the other hand, if the subject gets its θ-role from a distinct head *v* which Merges with VP, we can explain the constituency facts rather than describing them.

There's also an asymmetry between subjects and objects when it comes to verbal semantics:

(21) a. throw a baseball
b. throw support behind a candidate
c. throw a party
d. throw a fit

(22) a. take a book from the shelf
b. take a bus to New York
c. take a nap
d. take an aspirin
e. take a letter in shorthand

(23) a. kill a cockroach
b. kill a conversation
c. kill an evening watching TV
d. kill a bottle
e. kill an audience

What does all of that tell us?

- The choice of object can apparently affect the meaning of a verb in arbitrary ways.
- Note crucially that the effects here are not (all) straightforward idioms involving specific lexical items.
- E.g. the special meaning of kill an evening is available with any object with the right kind of semantics.
- This makes sense if the object really is an argument of the verb, since the semantics of the verb can be made sensitive to the semantics of its arguments.

Crucially, examples with similar effects based on the choice of subject are apparently lacking.

- ➪ So we have another asymmetry between subjects and objects in their relationship with the verb.

Again, we can make sense of this in terms of our new structure involving *v*:

- ☞ The facts in 21–23 constitute evidence in favor of objects being arguments of the verb.
- ☞ Thus the lack of similar facts with subjects is evidence against them being arguments of the verb.
- ☞ If they are instead arguments of *v*, this asymmetry is accounted for.

Getting *v* together with V

So what regulates *v* Merging with V?

- The obvious possibility to consider would be that *v* also bears a [uV] feature, i.e. it selects for a V.
- Given our definition of headedness, this would ensure that it is *v* which projects after Merge and not V.

But there are some issues with such an approach:

1. If *v* selects both for a V and for an N (i.e. the subject), what ensures that it Merges with V first?
2. If the relevant dependent features are only on *v*, this will ensure that *v* doesn't appear without V, but there's nothing to stop V showing up without *v* (and without a subject). I.e. something like 24 should be grammatical:

(24) * Burned letters.

We need a way to express the idea that the structure of a sentence built around a verb must have both *v* and V.

- We may ultimately be able to do this in terms of the right combination of selectional (and other dependent) features localized to individual syntactic objects.
- Another possibility is that the requirement that both elements be present is not imposed by the syntax, but falls out of restrictions on semantic interpretation.
- But since it is not clear at this point how either of these solutions would work, we need something more direct.

So we're going to propose a new component to our theory:

(25) Clausal Hierarchy of Projections (1st version)
v > V

- This says for now that a complete clause must (at least) involve a *v* taking a VP complement. (We'll add more projections later.)
- The idea is that *v* and V are intergral parts of a single system, where *v* essentially extends what V has begun.

The Hierarchy places a new restriction on structures, in addition to those placed by full interpretation etc. Structures like the following that don't respect it are ruled out:

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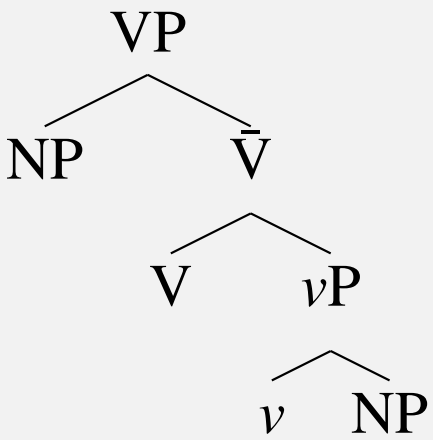


The HoP adds considerable complexity to our theory, and at this point it is a pure stipulation.

- Ultimately we will need to provide an explanatory basis for the hierarchy and justify the form it takes.
- Or we'll need to replace it with something more explanatory which can cover the same empirical ground.
- But for now, we need something to do this work, and the HoP is, at least, a relatively simple stipulation, and should help to clarify what needs to be explained rather than concealing it.

Note finally that we haven't said anything about the role of *v* in the pronunciation of sentences:

- In the examples we've looked at so far, it doesn't seem to have any effect, not being pronounced itself or changing the pronunciation of anything else.
- This would be sort of surprising if it were generally true, and in fact there is some reason to think that this head is pronounced in certain instances, e.g. as the verbalizing suffix -ize in vaporize.
- We're going to set this issue aside for now, but we'll hopefully come back to it later when we start developing the idea of Movement.

Introducing T

Introduction to Syntax

Lecture 8: Selection

The structure of VP

Introducing T

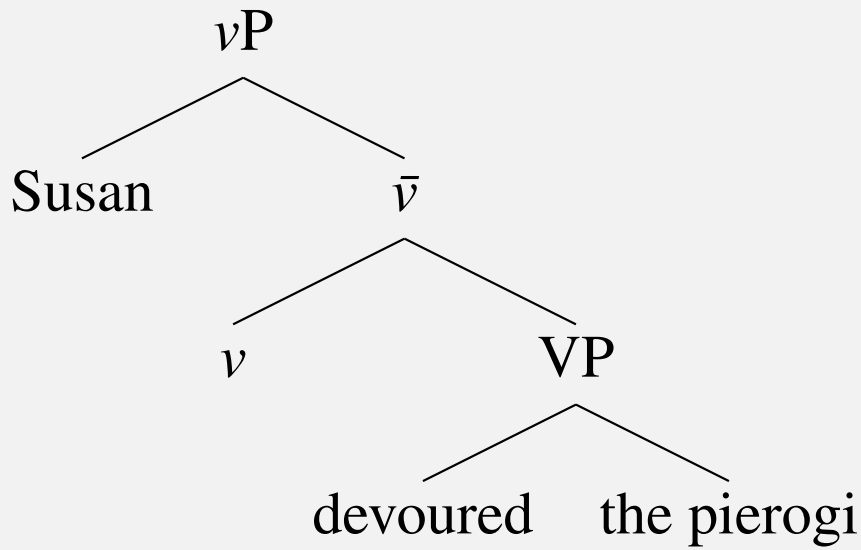
- Modals
- Auxiliary *do*
- Infinitival *to*
- Positing T
- Evidence from other languages

Perf and Prog

So far we've motivated this much structure:

(27) Susan devoured the pierogi.

(28)



But there are some things we don't have a place for yet.

- Where does the suffix -ed on devoured come from?
- What do we do when we get an auxiliary verb like in 29 or even two like in 30, and how do we deal with the various forms of the verbs?

(29) Susan must devour the pierogi.

(30) Susan must be devouring the pierogi.

- Why does the subject always come first, even when this means it is separated from the verb that assigns it a θ-role, e.g. by the adjunct always in 31?

(31) Susan always devours her pierogi.

Modals

Consider:

(32) Frodo may seek the ring.

(33) # The ring may seek Frodo.

(34) The ring may malfunction.

(35) # Frodo may malfunction.

- may sits between the subject and the main verb.
- Yet it is the main verb that assigns the subject its θ-role.
- may modifies the meaning of the sentence, saying something about possibility.

A number of other modal auxiliaries show up in the same place, making semantic contributions which are distinct, but of the same general type:

(36) Frodo must seek the ring.

(37) Frodo can seek the ring.

(38) Frodo should seek the ring.

(39) Frodo will seek the ring.

Standard constituency tests place the modal outside the *v*P:

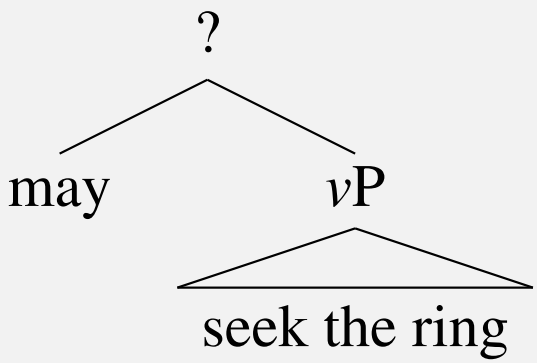
(40) What Frodo may do is [seek the ring].

(41) . . . and [seek the ring], Frodo may.

I.e. may Merges with the whole *v*P, not directly with the verb.

So we need

(42)



Not

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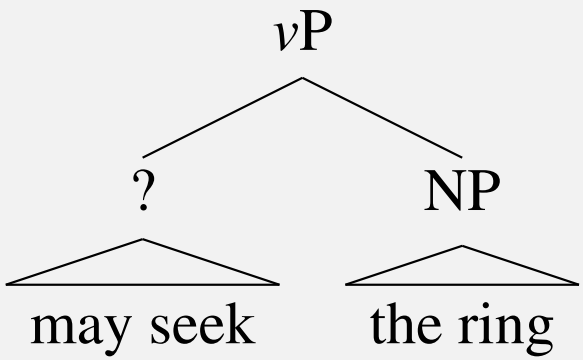


Note also that you can only have one modal per clause:

(44) * Frodo may must seek the ring.

(45) * Frodo must can find the ring.

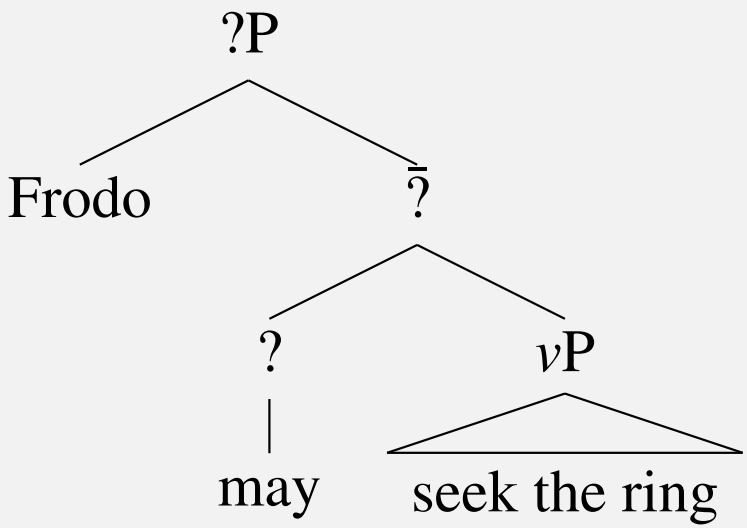
The problem here is not semantic. Compare:

(46) Frodo may have to seek the ring.

(47) Frodo must be able to find the ring.

So we seem to need something like this:

(48)



- A unique position for a modal auxiliary
- Between the surface position of the subject and the *v*P

The next thing to note about the modals is that they are like verbs in morphologically distinguishing present and past tense:

Present	Past
may	might
can	could
shall	should
will	would
must	—

☞ Now, the alternations here are quite irregular, both in form and meaning, and must doesn't seem to have a corresponding past at all.

Still, sequence of tense facts suggest that this is tense, at least at a grammatical level:

(49) I think she lives in Krakow.

(50) I thought she lived in Krakow.

(51) ?* I thought she lives in Krakow.

(52) I think she can speak Polish.

(53) I thought she could speak Polish.

(54) ?* I thought she can speak Polish.

Finally, note that it is always and only the modal that bears tense inflection. The main verb after it is always uninflected:

(55) The Lannisters could win.

(56) * The Lannisters could won.

(57) * The Lannisters can won.

Auxiliary *do*

do can be used to mark emphasis:

(58) Ellie did take my coffee.

Like with the modals:

- do appears between the subject and the main verb.
- do bears the tense inflection (and also the agreement).
- The main verb is uninflected.

(59) Ellie did take my coffee.
(60) Ellie does take my coffee.
(61) * Ellie did took my coffee.
(62) * Ellie do took my coffee.

Consituency tests again indicate that do – including its tense marking – is outside of *v*P:

(63) Ellie said that she took my coffee, and [take my coffee] she did.

(64) Ellie took my coffee, and Anna did [ ] too.

(65) Ellie likes coffee, and Anna does [ ] too.

- 64 and 65 are examples of *v*P-ellipsis.
- The whole *v*P is deleted in the second clause, but the relevant form of do is left behind.
- So do is outside *v*P, and so is the locus of tense.

Infinitival *to*

An infinitive is a special type of clause which:

- Lacks inflection for tense and agreement
- Is usually embedded in a larger clause on which it is somehow dependent for aspects of its interpretation
- Often lacks an overt subject

In English, infinitival clauses have a to before the verb:

(66) She tried [to leave].

(67) We wanted [to eat cake].

Tense marking, modals and auxiliary do are all banned:

(68) * She tried [to left].

(69) * Cole hoped [to may leave].

(70) * We wanted [to do eat cake].

Positing T

Adding all of this up:

1. Modals and emphatic do appear in a special unique position.
2. This position is outside *v*P but below the surface subject position.
3. In infinitives, to appears in the same position instead.
4. The position, when filled, is the only place where tense marking can appear in the sentence.

⇨ This position is the syntactic realization of Tense.

So here's the structure we get:

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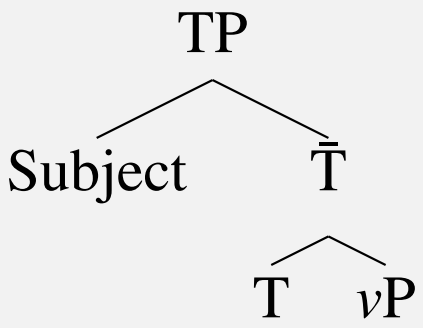

- Modals, auxiliary do and infinitival to are different instantiations of a T head.
- T Merges with *v*P and projects TP, which hosts the subject in its specifier on the surface.

Now, the surface position of the subject presents a puzzle:

- ☞ We concluded previously that the subject is Merged in Spec-vP, because v assigns it its θ-role.
- ☞ But now we see that it actually shows up to the left of another head, T.
- ☞ Because selection requires sisterhood, we should never get a situation where something intervenes between a selecting head and the argument in its specifier.

We'll talk about how to deal with this next time.

T isn't quite like anything we've seen until now.

- It projects, but isn't involved at all in θ-role assignment.
- The specific elements that realize it – the modals, do and to – constitute a closed class, unlike the open classes of nouns, verbs, adjectives and prepositions.

➪ We say that T is a functional category, while N, V, A and P are lexical categories.

v may also be a functional category. Like *v*, the position of T is regulated by the hierarchy of projections:

(72) Clausal Hierarchy of Projections (2nd version)
T > *v* > V

Evidence from other languages

In some languages the status of tense as an independent head outside the VP is more transparent. E.g. Sranan (creole, Suriname) uses auxiliaries for marked tenses and aspects:

(73) Mi waka.
I walk
'I walk (habitually).'

(74) Mi ben waka.
I PAST walk
'I walked.'

(75) Mi ben e waka.
I PAST PROG walk
'I was walking.'

(76) Mi ben o waka.
I PAST PROSP walk
'I was about to walk.'

And in Hindi, most finite forms of most verbs are formed with a tense auxiliary (a form of 'be') separate from the main verb:

(77) Mɛ̃ boltā hũ.
I speak PRES
'I speak.'

(78) Mɛ̃ boltā t^{h}ā.
I speak PAST
'I spoke.'

Perf and Prog

English has two other special auxiliary verbs have and be which differ interestingly from both the modals and do.

- They can combine with modals and to, so they can't just be other instantiations of T:

(79) I might have eaten some seaweed.
(80) I expect to have finished by midnight.
(81) I might be eating some seaweed.
(82) I expect to be eating seaweed tomorrow.

- They can also combine with each other, in one particular order and no others:

(83) I could have been flying helicopters by now.
(84) * I could be having flown helicopters by now.
(85) * I have could been flying helicopters by now.
(86) * I am having could fly helicopters by now.

☞ I.e. only the order Modal > have > be works.

As for the structural positions of the auxiliaries:

(87) I expected to have eaten the pizza, and [$_{vP}$ eaten the pizza] I have.

(88) I expected to be eating the pizza, and [$_{vP}$ eating the pizza] I am.

(89) I have been eating the pizza.

(90) * I am having eaten the pizza.

(91) Rory has [been eating pizza] and I have too.

- Both auxiliaries come outside the *v*P constituent.
- When they co-occur, be forms a constituent with *v*P, and have comes higher.

So let's introduce two new functional heads, Perf and Prog, to hold these auxiliaries that form the "perfect" and "progressive".

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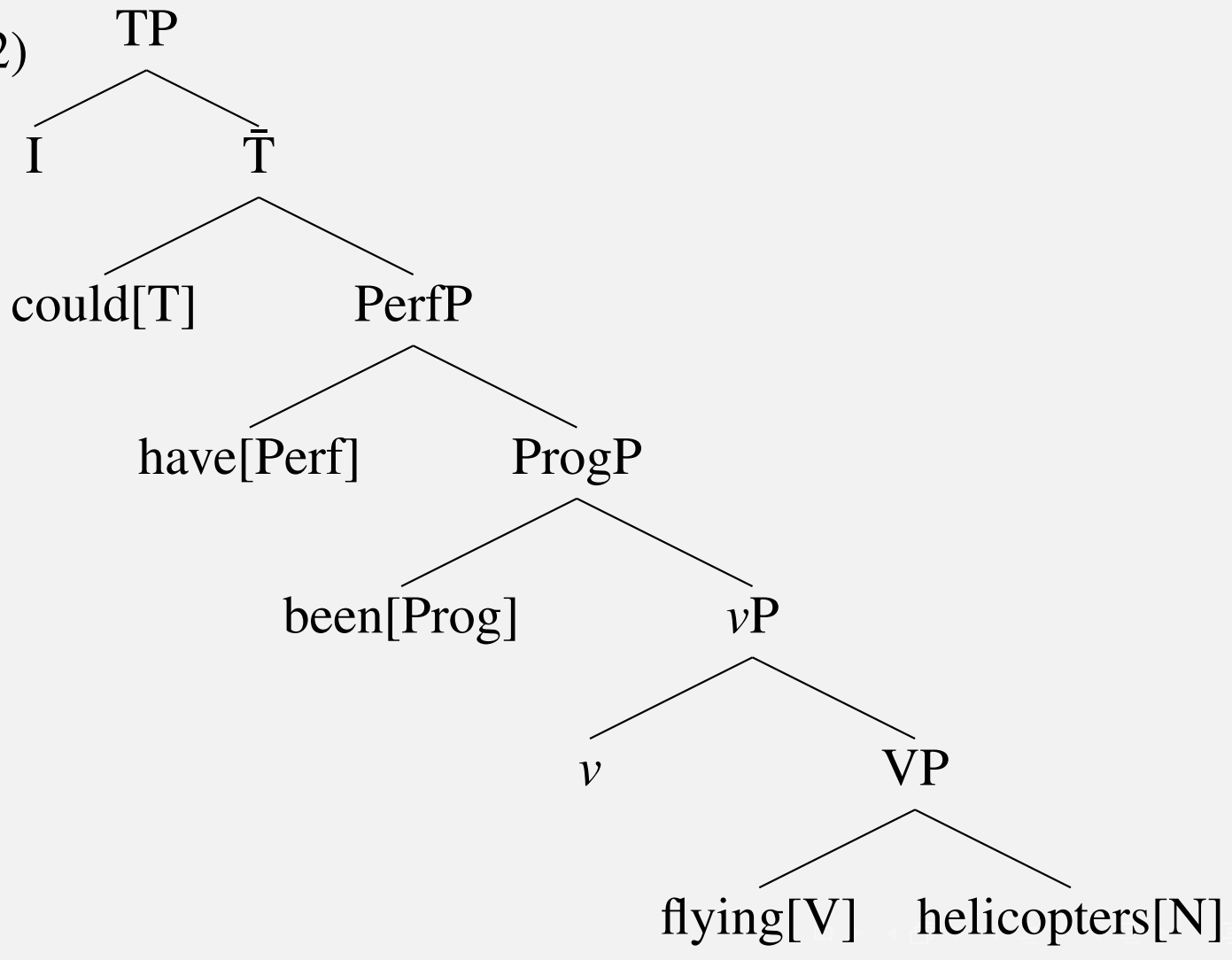

To get that order, we add our new friends to the Hierarchy:

(93) Clausal Hierarchy of Projections (3rd version)
T > (Perf) > (Prog) > *v* > V

☞ Note that Perf and Prog are in parentheses to indicate that they are optional: all sentences seem to have T and *v* and V, but not all sentences are perfects or progressives.