LX 422/722 Intermediate Syntax
Spring 2018

Notes at the end of a semester

1 How these notes relate to the previous notes

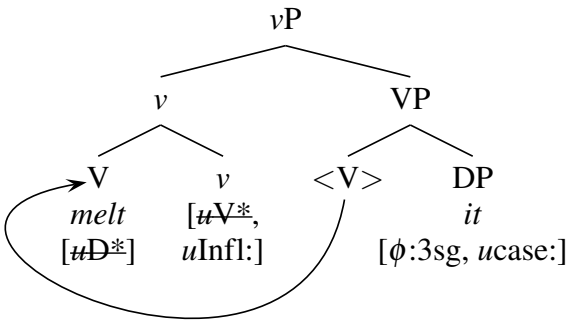
This is a followup to some notes that I had intended to hand out before the midterm. Generally, everything in the midterm summary is still true, won't be repeated here. This just has a couple of extra sections. In fact, the midterm summary has a few things that were not really covered until after the midterm, but they also will not be repeated here.

2 Agreement, inflection, and the auxiliary system

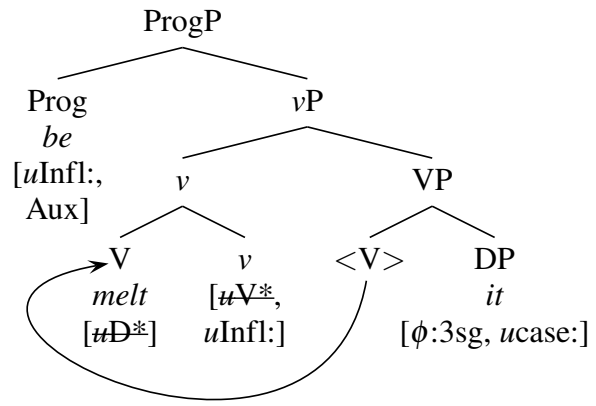
It is probably worth taking a special look at the auxiliary system in English and the way in which subject-verb agreement and other inflection is assigned.

A [*u*Infl:] feature is an unvalued, uninterpretable feature that must get a value from something else. Because we build the trees up from the bottom, we generally introduce something with a [*u*Infl:] feature first, and then, later, add something to the tree that will value the [*u*Infl:] feature. That is, [*u*Infl:] features are valued by the next thing up the tree that is capable of assigning inflection.

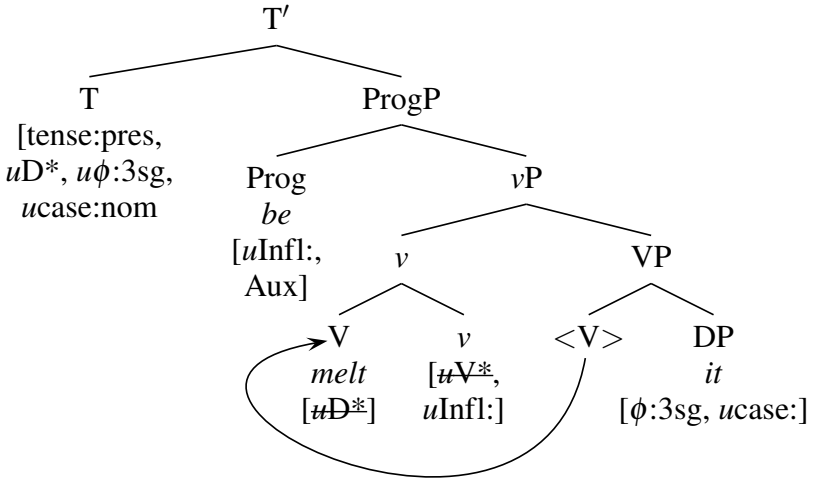
The things that are capable of assigning inflection are T, M, Perf, Prog, and Pass. T is a somewhat special case, so we'll come back to that. For the others, at the point they are Merged into the tree, they can value (and check) the closest [*u*Infl:] feature they c-command. For a simple example with a progressive auxiliary (*It is melting*), we first have the following structure (where I am now explicitly indicating the [*u*Infl:] feature of *v* as well as the ϕ-features and case feature of the DP and the selectional feature of the V *melt*):



Assuming that there is a Prog in the numeration (that is, "on the workbench"), the HoP would have us add that next, resulting in the structure below. Once Prog has been Merged with the *v*P, Prog (or, more specifically, its category feature) will c-command the [*u*Infl:] feature of *v* and will be able to value the [*u*Infl:] (via Agree). Prog itself needs inflection, so it has a [*u*Infl:] feature of its own, but we have now taken care of the inflection on *v* (which ultimately will cause the verb to be pronounced as *melting*).



Suppose now that we have reached the point where we merge T with the ProgP. T has a [$u\phi$:] feature, and is capable of assigning inflection. When T is Merged, it must first take care of its own [$u\phi$:] feature. It will c-command the DP *it*, which has ϕ-features, and so the [ϕ:3sg] feature of *it* can value and check the [$u\phi$:] feature of T. At the same time, the [*u*case:] feature of the *it* can be checked by the [*u*case:nom] feature of T. Then, T (now with ϕ-features valued) can value the [*u*Infl:] feature of Prog, which it does with both its tense value and its ϕ-features. Furthermore, because Prog is an auxiliary (it has an [Aux] feature, as does Perf, Pass, and M), T values the [*u*Infl:] "as strong": [*u*Infl:pres3sg*].



The next step will be to move Prog to T (by head-movement) in order to check the [*u*Infl:pres3sg*] feature of Prog (which, because it is strong, has to be checked very close to T—i.e. with the Prog head-adjoined to T). This happens in the same way that V moves to *v*, and then the derivation continues, moving it into the specifier of TP, etc.

3 DPs and Case

Every D starts off with a [*u*case:] feature—in order to be interpretable, it must have this feature valued and checked. The function of case in a sentence can be thought of as being an indication of where in the structure the DP is—based on what values its [*u*case:] feature.

Nominative case (*I*, *he*, *she*, *they*) goes to DPs that wind up in the specifier of a (finite) T. T has a [*u*case:nom] feature that will match, value, and check on the closest DP to T (which would be the Agent, if there is an Agent).

Genitive case (*my*, *his*, *her*, *their*, *the dog's*) goes to DPs that wind up in the specifier of the silent D that assigns genitive case ($\emptyset_{GEN}$). The $\emptyset_{GEN}$ D has a [*u*case:gen] feature that will match, value, and check

a DP within the complement of $\emptyset_{GEN}$. Note that, since $\emptyset_{GEN}$ is a D itself, it also has an unvalued [*u*case:] feature that needs to get valued and checked elsewhere. So, in *My dog left*, the DP my has its case checked (genitive) by the $\emptyset_{GEN}$ that heads the DP *my dog*, and the DP *my dog* has its case checked (nominative) by the finite T.

Accusative case (*me*, *him*, *her*, *them*) goes to DPs that generally stay in place. Prepositions and *v* can have [*u*case:acc] features that can value such DPs. Whether *v* has a [*u*case:acc] feature depends on whether it assigns a θ-role to a DP in its specifier ("Burzio's Generalization"); the *v* in a passive, and the *v* for an unaccusative, do not have this [*u*case:acc] feature and cannot check accusative case.

Of-case is a special case that goes to DPs that are Themes within an *n*P. It is the direct analog of accusative case inside *v*Ps. The *n* has a [*u*case:of]. The *of*-case is pronounced on a DP by a prefixed *of*, but this of is not part of the syntactic representation, it is just how you pronounce a DP with *of*-case. This means that in *John's gift of cheese to Mary*, *of cheese* is a DP (not a PP).

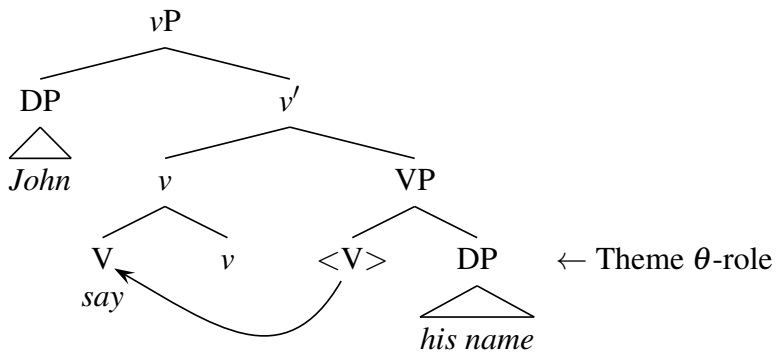
There is also one special instance in which accusative case can be assigned by a V, which arises for Vs that have a possessive have-type meaning. This is specifically required for double object constructions: *John gave me a book*. Here, *me* gets accusative case from *v*, and *a book* gets accusative case from V.

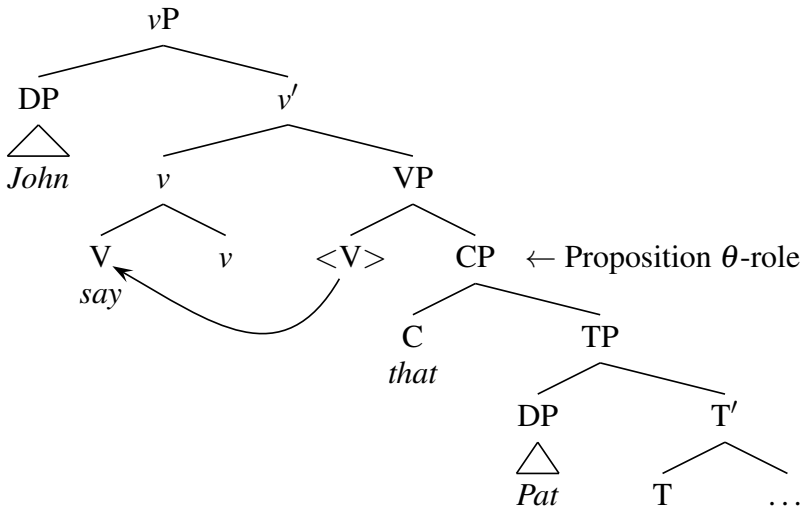
Null case is a special case that can only be assigned to PRO (PRO is a DP and so it needs case too, but it can only get null case—no other case will do). There are two things that can assign null case. One is a silent C ($\emptyset_{NULL}$), and one is the "ing" T, which assigns null case in the same way finite T assigns nominative case. An example of $\emptyset_{NULL}$ would be found in *John wants [$\emptyset_{NULL}$ PRO to leave]*. An example of the "ing" T would be *[After PRO leaving], John went to the store*.

4 Embedded clauses, finite and nonfinite

It is a basic fact of language that sentences can contain other sentences. This can happen in a couple of different ways, but the most basic situation is to have a sentence embedded under a verb like *say* or *want*.

For example, you can have a sentence *Pat ate the bagel* and embed it within another sentence, *John said* [*that Pat ate the bagel*]. The internal sentence (*that Pat ate the bagel*) is treated in the same way a simple object would be (in, e.g., *John said his name*), as complement to the V *say*. When used to embed a sentence, the V assigns a Proposition θ-role to its complement. (In terms of the UTAH, the phrase getting the Proposition θ-role appears as either a TP or a CP, as a sister to V).





It is possible for an embedded sentence to be *nonfinite* as well. The basic case of this is a sentence that has *to* in it before the verb, as in *I want Pat to eat the bagel*. The distinction seems to play an important role in the behavior of sentences in a couple of different respects. A sentence is finite when it has tense and/or person agreement expressed on the verb (*wrote*, *writes*). We find that the C *that* only occurs with finite clauses (whereas *for* occurs with nonfinite clauses: *I said that Pat ate the bagel* vs. *I want for Pat to eat the bagel*). Finiteness is a property that ultimately "lives in" T—it is properties of T that determine whether a clause is finite or nonfinite. To reflect this, we can consider nonfinite T to have the feature [inf] (the idea being that it is short for "infinitive"), while finite T has features like [tense:past] or [tense:pres]. Since only finite T triggers agreement, we can also assume that only finite T has a [$u\phi$:] feature picking up the ϕ-features of the subject. Any T, whether finite or nonfinite, is assumed to have the [uD*] feature (the "EPP feature") that triggers the movement of a DP into "subject position" (the specifier of TP).

When a T is finite, it can trigger movement of a certain class of heads, although the specifics can vary across languages. In English, there is a class of heads we can label "auxiliaries" (including Pass *be*, Prog *be*, Perf *have*, and modals *should*, *could*, *can*, *might*, etc.) that will move to T, although verbs (v) will not move to T. We can distinguish the auxiliaries from the non-auxiliaries by supposing that auxiliaries have a feature that marks them as auxiliaries (the feature [Aux]) and we can say (or, rather, stipulate) that when the [uInfl:] feature of an [Aux]-featured head is valued by finite T, it is "valued as strong"—meaning that although T can set the value of the auxiliary's [uInfl:] feature, it cannot actually check the feature unless the head is right next to T. So, the auxiliary moves to T.

When a T is nonfinite, however, this movement does not happen. We assume that T still values the next [uInfl:] feature down, but it will value it as Inf, and this will be sufficient to check the [uInfl:] feature. (The fact that nonfinite T also differs from finite T in not having a [$u\phi$:] feature could perhaps lead us to make a connection between subject agreement and the need to move a lower auxiliary—but we have not made that explicit anywhere.) The main point to remember here: The word *to* (which we treat as a modal, in the same category as *might*, *could*, *should*) does not move to T.

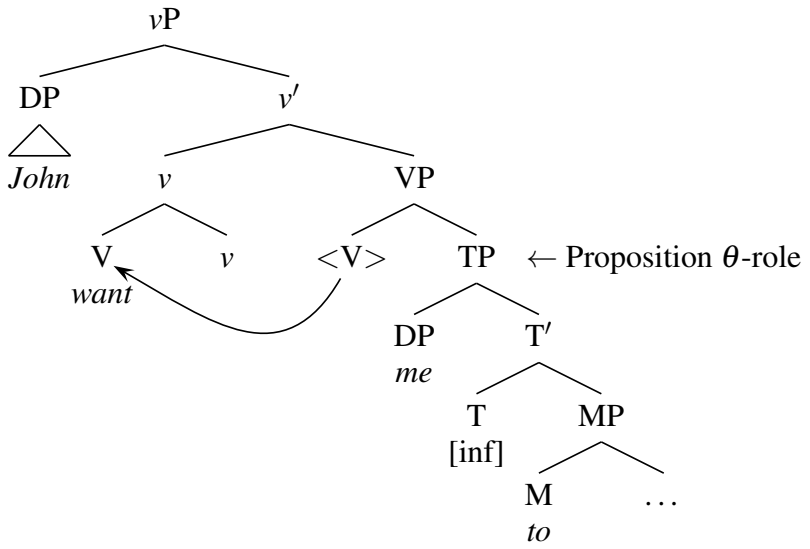
To the extent that languages show verb movement to T, it appears to be basically a universal property of languages that movement occurs to T only when T is finite.

Another difference between finite T and nonfinite T is this: Finite T has a [$u$case:nom] (a.k.a. "[nom]") feature, meaning that it checks and values the [$u$case:] feature (found on every D) as nominative. Nonfinite T in general does not have such a feature and does not check case at all. Thus, even when a DP moves into the specifier of a nonfinite TP (to check the EPP feature), the case needs of said DP have not been resolved. In such cases, the DP might get case from elsewhere (for example, the C *for*, or a higher ECM

verb, discussed below), or it might move on to another SpecTP (as with a raising verb, also discussed below) to get its case feature checked. One exception to the generalization that nonfinite T leaves case features unchecked is the *ing* T found in clauses like *before watching TV*, which has a [*u*case:null] feature, allowing the PRO subject (*before PRO watching TV*).

When T is finite, it is always contained within a CP. Sometimes the C itself is not pronounced, but in those cases it generally could be: *John said (that) Mary stole his bagel*.

When T is nonfinite, the question of whether there is a CP just above it is not as straightforward. In general, there is a CP if there needs to be for some other reason, but not otherwise. Examples of where a C would be needed in a nonfinite clause are: 1) when you can actually see/hear it (*Pat wants for Tracy to leave* or *while eating a bagel*), or 2) when the subject of the nonfinite TP is PRO (*Pat wants PRO to leave*). Particularly in cases where the subject of the nonfinite TP gets accusative case from a higher *v* (ECM constructions such as *John wants me to mow the lawn*), there is no CP above TP.

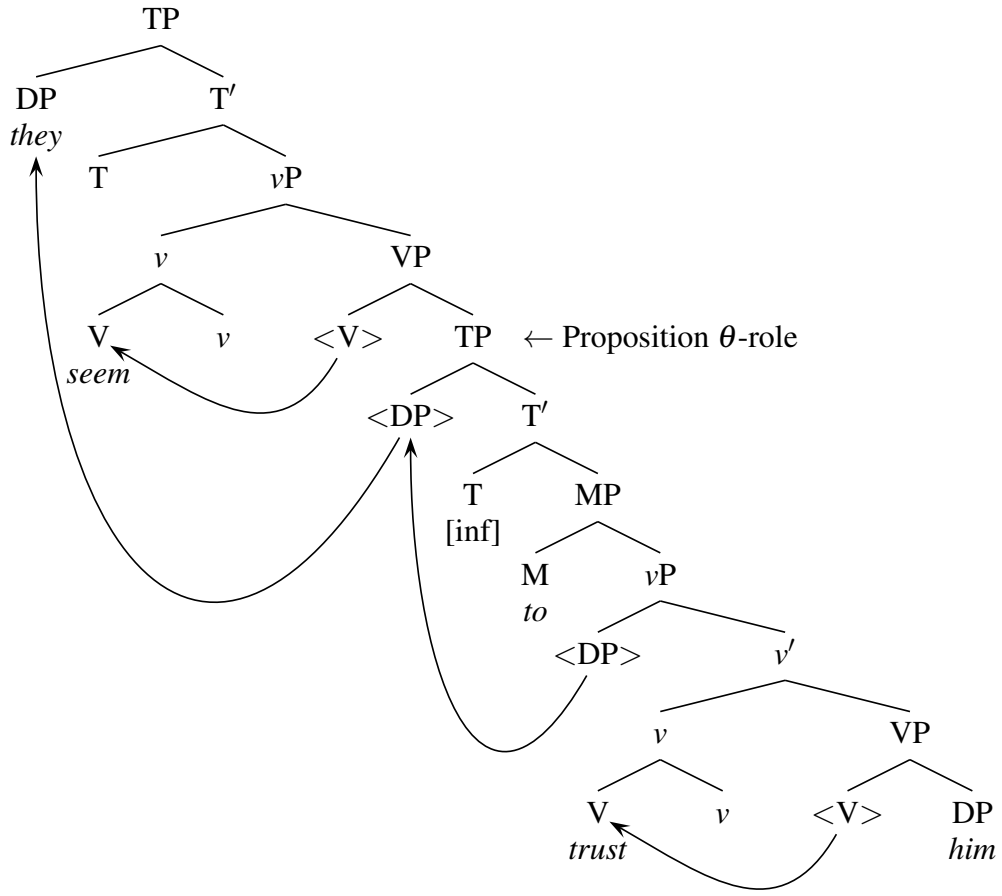


There are a couple of different situations in which you would have an embedded infinitive, and these generally depend on the properties of the verb that embeds it (that is, the verb that provides the Proposition θ-role).

An *ECM verb* ("exceptional case marking") is generally a verb that can also take DP objects to which accusative case is assigned, but can also take propositional complements. For example, *want* or *find* or *believe*. This was illustrated above. *Consider* can take an accusative DP complement (*John considered them*) or a full clause (*John considered them to be annoying*). Notice one important fact about *me* in *John wants me to mow the lawn*: *me* is not an argument of the verb *want*, but rather of the verb *mow*. What John wants when he wants me to mow the lawn is nothing specifically about me except insofar as I am doing the mowing that makes the embedded sentence true. That is, *want* is a relation between the wanter (Experiencer) and the wanted effect (Proposition), and that's all (even if initial intuitions might tend to suggest otherwise). (Compare *John wants nobody to ruin the lawn*—this is not something about nobody, it's about not having the lawn ruined.)

A *raising verb* is a verb that has only a single θ-role, a Proposition (or, sometimes also a Theme/Experiencer of a kind, but crucially nothing that originates in the specifier of *v*P). These are verbs like *seem* or *appear* (or adjectives like *likely*). The fact that a raising verb itself will be within a higher TP means that something will need to occupy the specifier of TP (due to the EPP feature of T). Sometimes (when the embedded clause is finite) this role is played by the expletive *it*, as in *It seems that John has mowed the lawn*. But if there is no *it*, and the embedded clause is nonfinite, then the DP that occupies the specifier of the higher

TP has to be recruited from the lower TP. So, in *John seems to have mowed the lawn*, *John* has actually started in the specifier of the *v*P associated with *mow* in the lower clause, moved into the specifier of the lower TP, and then moved again into the specifier of the higher TP.



A *control verb* is a verb that takes an embedded nonfinite complement, where the "understood" subject of the embedded clause appears to get a θ-role from the higher verb as well. An example where this arises is with the verb *persuade*, as in *They persuaded me to leave*. Here, the meaning of the sentence seems such that the Agent of *leave* is *me*. However, considering the higher verb *persuade*, it seems as if it too is providing a θ-role to *me* (the one persuaded, which we treat as a Theme of *persuade*). By hypothesis (the Unique θ-Generalization), this cannot happen—if there are two θ-roles, there must be two things receiving those θ-roles. The solution to this conundrum is to suppose that there are two DPs, but a) one of them is invisible (called "PRO"), and b) the two DPs share the same referent. So, more technically, a control verb is a verb that takes a nonfinite complement that has PRO as its subject.

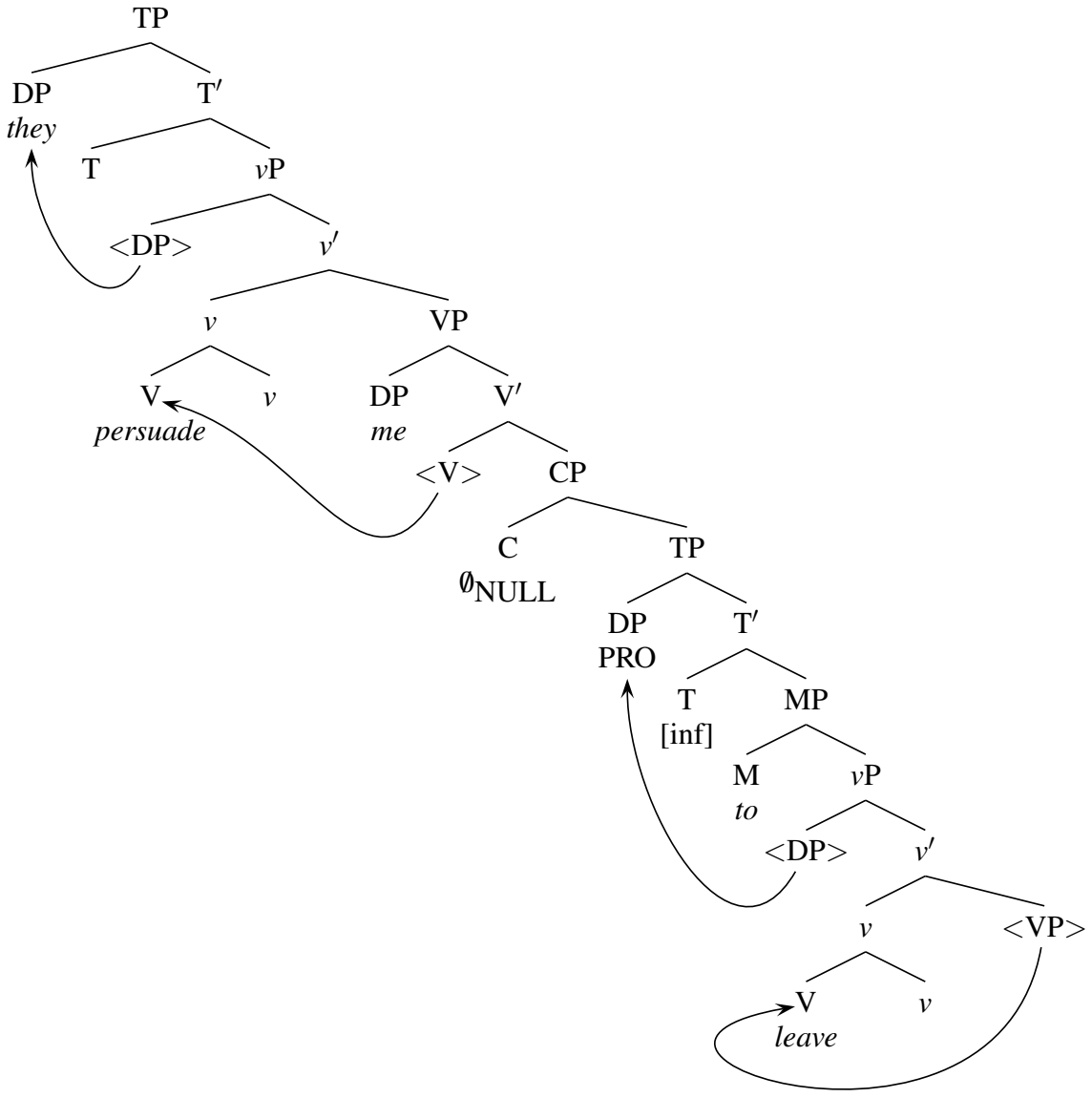
The distinction can perhaps be most easily seen with the verb *want*, which has the interesting property that it can function either as a control verb or as an ECM verb. When *want* functions as an ECM verb, we find the subject of an embedded nonfinite clause surfacing in the accusative case: *John wants me to leave*. When *want* functions as a control verb, no embedded subject is visible—yet, the θ-roles are presumably unchanged from the ECM example: *John wants to leave*. We therefore understand this to be, in fact, *John wants PRO to leave*.

Among control verbs, there are two basic types. Most control verbs are *object control verbs*, so called because the object of the higher verb is necessarily coreferential with the lower PRO. (The word "control" in fact comes from the idea that an argument of the higher verb "controls" the reference of the PRO.) *Persuade* is of this type—the object (Theme) of *persuade* is understood to be the lower Agent (it controls

the reference of PRO): In *John persuaded me PRO to leave*, the object (*me*) the Agent of leave (PRO) necessarily have the same referent.

A small number of control verbs are *subject control verbs*, and this is something that essentially seems to be just an idiosyncratic property of individual verbs (although the inventory of subject and object control verbs across languages is pretty stable, so it is presumably somehow derived from the semantics—but how is not clear). The basic example of a subject control verb is *promise*: If *John promised me to leave* (that is, *John promised me PRO to leave*), it is John that doing the leaving (because John is the subject and, with subject control verbs, the referent of the subject is the same as the referent of the embedded PRO.)

The structure for *They persuaded me to leave* is given below, but it could as easily serve as the structure for *They promised me to leave*, since the difference between the two control verbs is not one that is reflected structurally in the tree. Notice that here, the embedded clause (getting the Proposition θ-role) is a CP: We need the special C $\emptyset_{NULL}$ in order that case can be checked on PRO (recall that PRO requires a special "null" case).



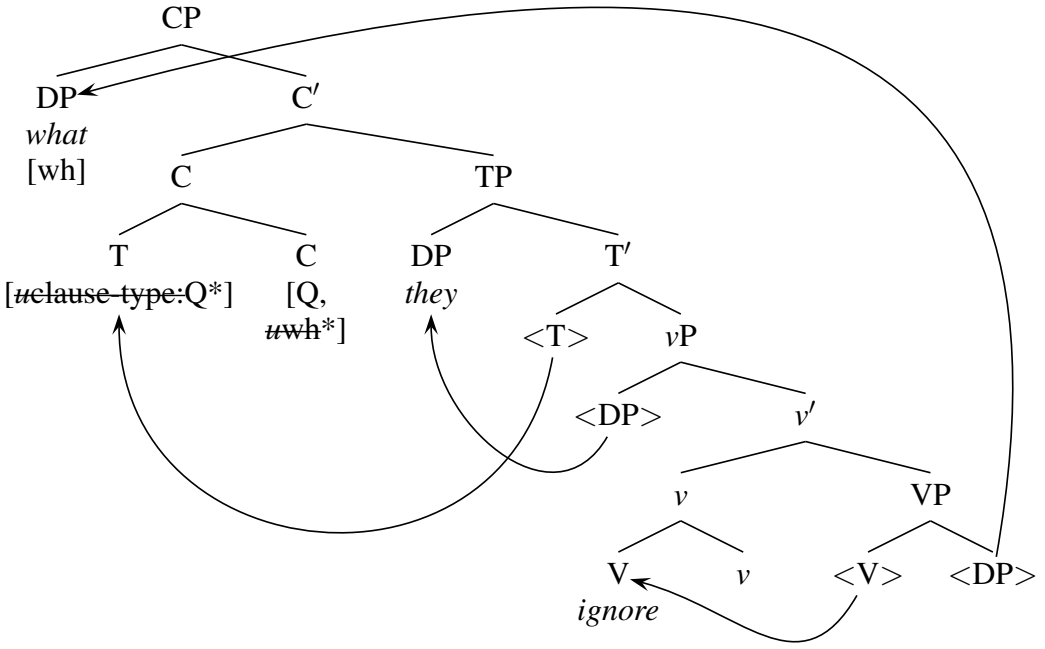
5 Wh-movement and V2...

Many languages seem to require changes in the otherwise normal word orders when information-seeking questions (such as *Who left?*) are formed. This happens in English: In an information-seeking question, the question word seems to need to be first in the clause with which it is associated. A further curious thing happens as well, the subject and "auxiliary" (*be*, *have*, *do*, or modal elements like *can*, *should*, *will*, etc.) switch places. If there was no auxiliary in the corresponding statement, often an extra *do* is thrown in as well.

The terminology used to describe this in our syntactic system arises historically from the study of this phenomenon in English. Question words (often in whatever language) are referred to as *wh*-words (because in English, most such words start with *wh*). The effect of relocating such words to the front of their sentence is called *wh*-movement (movement of *wh*-words), and the inversion of the subject and the auxiliary is often called "subject-auxiliary inversion" (or even just "SAI").

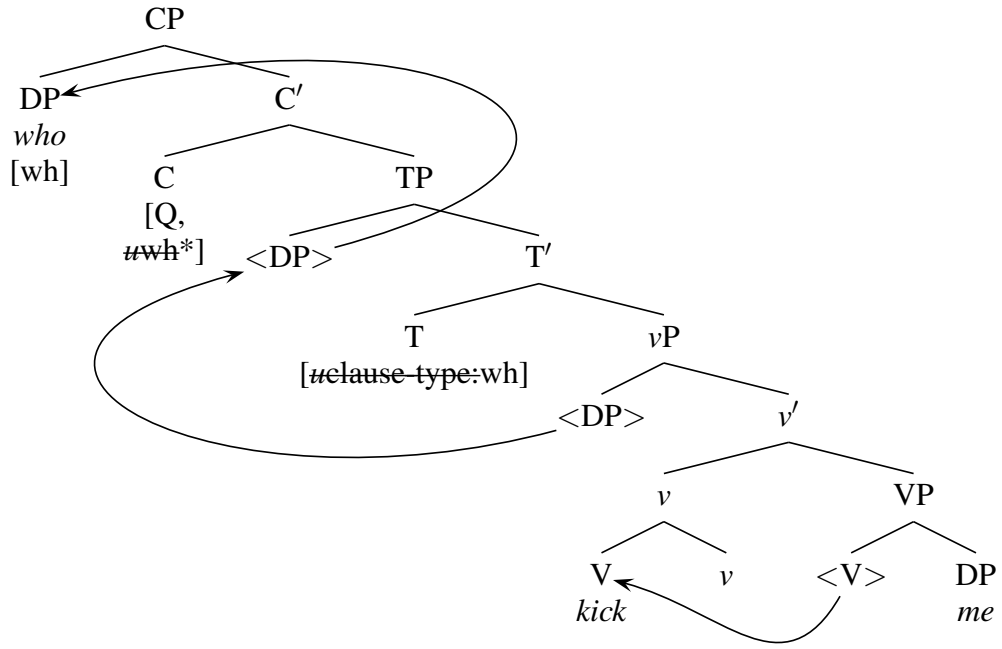
In terms of the system we have developed, there is a quite sensible way to understand what is happening here. The feature that distinguishes questions from statements is a clause type feature that is one of the features of C. If we suppose that interrogative C in some languages (say, English) has a [*uwh**] feature that operates rather like the EPP feature of T, causing something with a [wh] feature to move up into its specifier, we can account for the movement of *wh*-words to the front of the sentence. At the same time, we can suppose that an operation analogous to what causes auxiliaries and/or verbs to move to T (auxiliaries in English, both auxiliaries and verbs in French, etc.) causes T to move to C in main clause interrogatives. Specifically, we can say that T has a feature that is valued by C (a [*u*clause-type:] feature), and when that feature is valued as Q, it is valued as strong (meaning that the feature can only be checked if T moves up to C).

So, *wh*-movement in English involves movement of a phrase with a [wh] feature in its head into the specifier of CP and, in main clause questions, the movement of T to C. (Note that in embedded clauses, this T to C movement does not occur. We simply have to stipulate that only when a main clause C values the [*u*clause-type:] feature of T as [Q] is it valued as strong.)



Subject *wh*-questions are special in that T does not move to C, even in main clauses. We account for this by supposing that a *wh*-word itself can value the [*u*clause-type:] feature of T (thereby keeping C from

valuing it at all, as strong or otherwise), something that only a subject *wh*-word is in a position to do. (Note: that last statement presupposes that only when [wh] c-commands the [uclause-type:] feature of T can [wh] value the [*u*clause- type:] feature.)



Related somewhat to this discussion of *wh*-movement in English, there a number of languages (German, Dutch, for example) that seem to do a very similar thing not just in questions but in all sentences. These are "V2" languages, so called because the (finite) verb appears in "second position" after a topic. We can analyze this as follows: Even declarative C in such languages values the [*u*clause-type:] feature of T as strong, and has a [*u*top*] feature, forcing some phrase (which is marked with a [top] feature) into the specifier of CP.

6 Phases and islands

Movement in this system occurs generally because it has to, in order to check a (strong) feature. It's been observed that, that when something that would have to move is found inside a certain type of constituent, the movement becomes impossible. These constituents that can "trap" a moving element are known as "islands."

The main examples of islands are: Complex Noun Phrase islands, Adjunct islands, and *Wh*-islands. *Wh*-movement is the primary means of detecting these islands—if a *wh*-phrase gets its θ-role inside an island and it has to move to a SpecCP that's outside the island, then the derivation fails and the sentence is ungrammatical.

A complex noun phrase island is any definite DP, like *the book about fish*. You can't ask *What did John read the book about?* and the reason is that *what* would need to move from inside the definite DP out to the SpecCP.

An adjunct island is any adjunct, most obviously clausal adjuncts like *after the President told Congress about the economy*. So, you can't ask *Who did you laugh after the President told about the economy?*.

A *wh*-island is basically any embedded question, like *who John gave the flowers to*. So, you can't ask *What did Mark know who John gave to?*.

The underlying reason for islands existing is taken to be that "movement can't go too far"—and the reason it can't go too far is that the structure is built up in chunks, and once a chunk is finished, you can't see inside it to move something out of it.

The chunks are **phases**, which are CPs. The idea is that once a CP is finished, it is interpreted in some way—basically rendered opaque, except for its "edge" (the specifier of CP).

Because SpecCP is not "frozen" along with the rest of the phase, a *wh*-word that moves into SpecCP can avoid being "frozen" and can remain visible for movement into a higher SpecCP if needed. Observationally, we can see that *wh*-phrases seem to be able to cover arbitrarily large distances (*What did John say Mary heard that Bill bought?*) but there is also evidence that longer movements occur as a result of a number of smaller steps (into each SpecCP along the way). The visibility of SpecCP from outside is also affected by whether the CP itself gets a θ-role (Proposition). If the CP does not get a θ-role, then not even the edge (SpecCP) is visible, and nothing can move out at all. The fact that adjuncts don't get θ-roles then predicts correctly that adjuncts are islands and *wh*-movement should not be possible from within them.

The *wh*-island effect also arises from phases: In an embedded question, SpecCP is already occupied, either by a different *wh*-phrase, or by *Op* (the silent *wh*-word). This means that a *wh*-word that needs to get higher in the tree can't stop in the embedded SpecCP (it is already full), and so it gets caught inside the embedded CP when the phase finishes and the contents of CP are "frozen."

The complex noun phrase island effect suggests that DPs are phases too, or perhaps only definite DPs are phases. Since they have no SpecCP to move to, *wh*-words are trapped within them when the phase finishes. For legitimate cases of "long distance" *wh*-movement, it is assumed that C can (optionally) have a [*u*wh*] feature that will draw the *wh*-phrase up to the intermediate SpecCP position (in order to keep it accessible from above once the phase finishes).