Roberta D'Alessandro

SYNTAX MADE EASY
How to read (and draw) syntactic trees

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A word of introduction to these notes

I am a generative syntactician. Every time I tell students or colleagues what I do, I get a reaction that is not neutral. People have very clear ideas about generative grammar: they are either for it - they like it, they love it - or they are against it with all their hearts. They hate it, they mock it, they would rather it didn't exist.

One thing that I have noticed recently is that, in typological papers, linguists very rarely, if ever, refer to generative literature. The take seems to be that generativists work on English, and there's no need to read anything they write as we know the data by now. Nothing could be further from the truth. In the last fifty years or more, generativists have systematically worked on the documentation and description of "exotic" languages and local varieties. Comparative syntax is a very active field of study for generativists, and of course if you want to analyze a language you must describe it first. Many generativists have learnt to do fieldwork, and they have described phenomena in obscure languages, but all this work goes unseen among those who document and describe languages for a living.

The same holds for students: if you ask them to read a syntax paper and they are not studying syntax at an advanced level they frown because they wouldn't understand it (they say). In these last years, I have often taught linguistics courses for non-generativists. Especially at summer schools, I have often come across very motivated and brilliant students who, at some point, would tell me: I don't know anything about generative grammar. I hope I can still follow your course.

Much to my amusement (and joy), it has also happened to me quite regularly that, at the end of these courses, I would get the same students telling me 'Oh! It was easy! I thought it was extremely complicated, and every time I tried to read something generative I got stuck after two sentences, because of your "terminology"'.

I have asked myself the reason of so much resistance, many times, and the answer I have come up with can be summarized like this: Generativists have made very little effort to reach out and be understood by other subfields; generative syntax has a level of sophistication which makes it difficult to read "intuitively", without training.

I think that the times of the unpleasant fights between subfields are over, or at least I hope so. The problem of sophistication and specialized lexicon still exists though. So I thought: why not spend the holidays writing something which might be of help for students as well as colleagues who would like to know more but have no time or patience to take an introductory book and read from start to finish?

So here we are: this is a little guide, for people who wish to be able to grasp some of the concepts behind the syntactic trees, and be able to decipher them without too much effort.

These notes (in progress) are for those who would like to know more or less how to read a tree, what the difference is between v and V, what the difference is between an X'' and an XP (hint: there's no difference!), what the difference between a head and a phrase is, and what these funny trees with Vs and Ts and Cs are. What do you mean by movement? What are these phi features then? Where do you attach adjuncts? What are theta-roles?

Notations and concepts have evolved a lot during the 50 years of generative grammar: I'll try to tell you what you should pay attention to, when you hear a term.

What you will NOT find here is the discussion on innateness, UG, parameters, Plato's problem, evolution, and all the stuff that serves as a "philosophical" background to the system.

You will not become a syntactician by reading these few pages; many things will be oversimplified, so I beg my fellow syntacticians not to get upset if/when they read these notes. This is what I usually give to my students who have never had syntax as a 2-minute crash course in syntax. A guide to reading (and perhaps drawing) trees. Some kind of little light on the dark path of syntactic theorizing. Because syntax, you know, is a lot of fun!

Here we go!

1. What is a tree?

A tree is a diagram, representing the structure of a clause and the relationship between the elements in it.

A tree usually contains a VERB PHRASE (VP), a TENSE PHRASE (TP) and a COMPLEMENTIZER PHRASE (CP). These are PHRASES (that's what the P stands for!) that represent the components of a clause.

A VP is the verb phrase (see Section 4, The verb and its arguments), representing the verb and its arguments; a TP is the Tense phrase, more or less encoding verbal inflection (present tense, imperfective, etc.); a CP contains information on the clause type: whether it is an interrogative or a declarative, whether it is a main clause or an embedded clause.

You can imagine a tree as having three "domains": the verbal domain, the inflectional domain, the illocutionary domain.

A tree usually represents a sentence. A sentence is also a phrase in its own right!
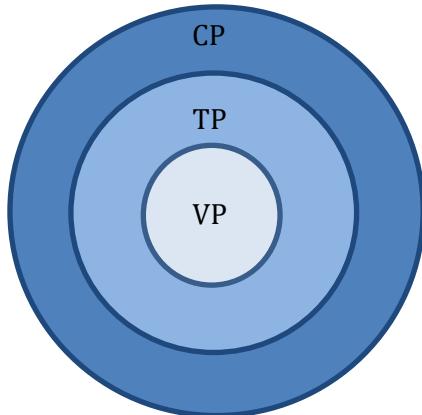
1.1   How you build a tree

You build a sentence starting from the verb. Then you add the arguments to the verb, and you have created the VP, which means VERB PHRASE.
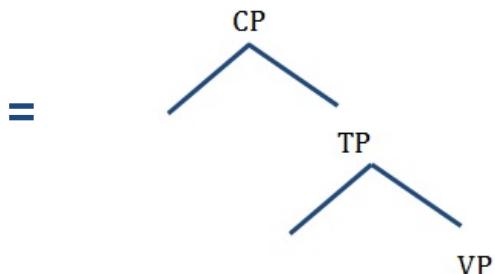
You then add the information on tense, aspect, mood to the verb. This information is contained in the TP (TENSE PHRASE). Finally, you add information on the illocutionary force of the sentence (declarative, interrogative, etc). And you do this in the CP (COMPLEMENTIZER PHRASE). And you're done!

(1a) and (1b) represent the same concept:

(1) a.   b.

The diagram in (1) suggests that one phrase includes the others: the CP includes the TP and the VP; the TP includes the VP. That is in fact the case. The CP usually indicates the whole sentence (or the whole clause), and is composed by the verb and its arguments, the tense-aspectual specification, and the information about the kind of sentence.

You are basically done! This is all there is in these mysterious tree diagrams! They are nothing other than an abstract representation of a sentence.

One thing you might wish to know is that tree diagrams (or sentence diagrams) are sometimes represented with brackets. The tree in (1b) can be also represented as (2):

(2) [CP [TP   [VP   ...]]]

Please observe that the phrases are indicated right after the left parenthesis, and below. This is a convention, which will help you understand what you are reading (and drawing).

(3) [CP [TP   [VP   ...]]]

(1), (2), and (3) are equivalent. Let's have a look at these phrases then!

2   What is a phrase?

Wait a minute! Before looking into these VP, TP, CP objects, we should have a quick word about how *all* phrases are built. A phrase is a set of syntactic elements that are bound together by some sort of relation. Intuitively, if we look at a sentence like (4), we know which words belong together and which are a bit more "distant" from each other:

(4) John's sister works very hard

We know (we don't know why but we do know) that some words in these sentences belong together more than others. For instance, if we had to read the sentence in bits, we would probably put the pause after *sister* and after *works*.

We know, intuitively, that the "components" of this sentence are:

(5) a. [John's sister]
   b. [works]
   c. [very hard]

a, b, and c are called the CONSTITUENTS of a sentence. There are tests to identify them, but for those you'll have to grab an intro to syntax book. I just want you to know, roughly, what a constituent is, when you hear this term.

Are constituents phrases? That's a less straightforward question than we are prepared to answer here. For now: these constituents are phrases, yes. Just so you know: not all constituents are phrases, but all phrases are constituents.

Hey, but what is the CP/TP/VP here? Is *John's sister* a CP, *works* a TP, and *very hard* a VP? NOT AT ALL! Just be a little patient, and everything will fall into place. This is what they are:

(6) a. [John's sister]   [Noun Phrase]
   b. [works]   [Verb Phrase] [VP! We know it!]
   c. [very hard]   [ADVERBIAL PHRASE]

How do we put them together into something that looks like (1)? Be patient, or if you can't wait, move to Section 3 (From phrases to sentences).

Let's start with *John's sister*. I wrote above that that's a Noun Phrase. Why is that? That's because the main element in the phrase is *sister*, and *sister* is a noun. How do we know that the main element is *sister* and not *John*? Because, for instance, we know that it's the *sister* who *works*, not *John. Sister* agrees with the verb because it is the most important element in the phrase *John's sister*. Or, if you prefer, *John's sister* is a kind of *sister*, not a kind of *John. Very hard* is a kind of *hard*, not a kind of *very.*

The most important element in a phrase, the main element, is called the HEAD.

The head is what gives the CATEGORY to the phrase, for instance N (noun), V (verb), Adv (adverb), T (tense), C (complementizer), D (determiner), Q (quantifier), and so on.

We indicate a generic phrase as XP. XP is a phrase, with category X (so, any category).
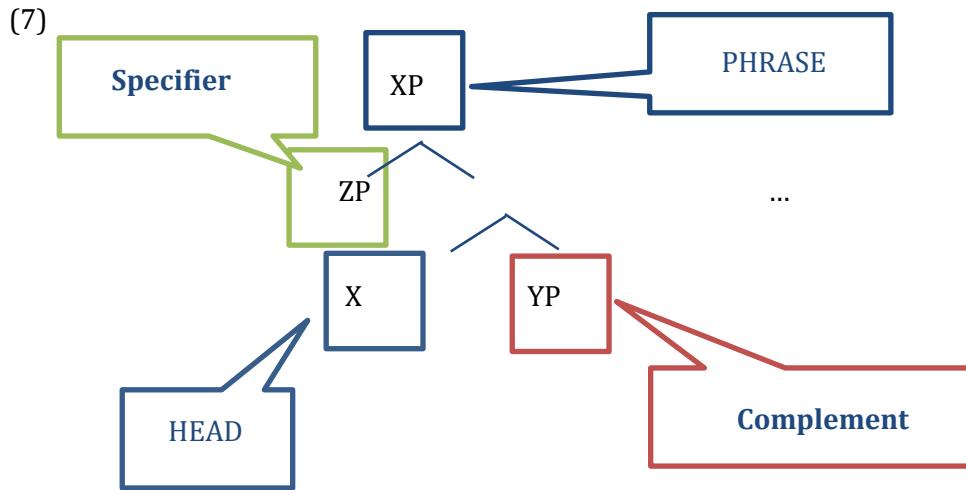
IT IS NOT POSSIBLE TO HAVE A PHRASE WITHOUT A HEAD, so the very first thing you should look for when you see/draw a tree is heads. Remember: if you are drawing an XP and you forget to have the X, that's a mistake.

HINT: When drawing a tree, please start from the head (so, from the bottom!). When drawing a clause, PLEASE START FROM THE V.

2.1   The internal structure of a phrase

We know that a phrase must have a head. Without a head, a phrase has no category, and therefore other elements in the clause can't see it. So please remember to always look for the head first!

A phrase also contains other elements. If you remember the diagram in (1), you will remember that a phrase can contain other phrases. There is a very specific way in which phrases are organized. Phrases are usually represented like this:

(7)

One thing you need to bear in mind is that both the COMPLEMENT and the SPECIFIER of a phrase are phrases themselves. There is ONLY ONE head in a phrase, and that is the element that gives the category to the phrase. Imagine how confusing it would be if every phrase had to decide which category it would be, should there be more than one head!

Don't get confused! Every phrase has a head. Specifiers and complements are phrases themselves, which means that they also have their own heads. The head of the complement YP will be Y; the head of the specifier ZP will be Z.

The only element that MUST be present in a phrase is the head; there can very well be phrases without specifiers and without complements. For instance, the name *John* is an NP (or a DP, see Section 8 NP or DP?) that has only a head and neither complement nor specifier.

Why do you build the phrase like that? Why is the specifier there and the complement there? You will need to trust me on this, or go to an intro to syntax. This is just so you can recognize them.
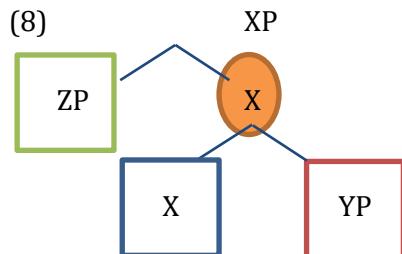
What about the NODE (this is what we call the points in the tree where branches meet, or their ends) which is indicated as … ?

2.2 A note on the bar level

You might have heard that there is an "intermediate level" (indicated with … in 7) that is called bar-level, and that we usually indicate it as X' (read X-BAR). If you haven't, please skip this section.
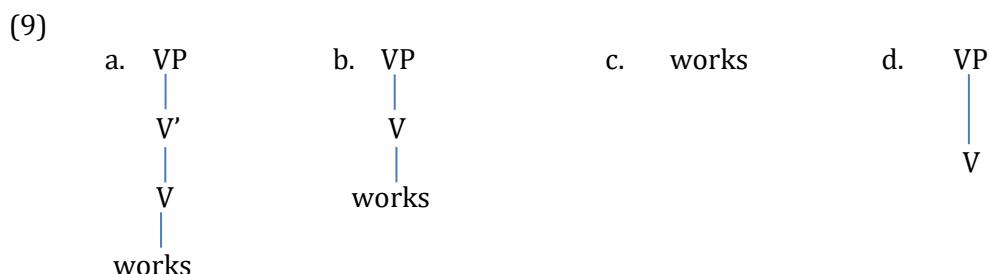
If you have: actually, there is not much evidence for the existence of a bar-level. The X' is a tricky constituent, which is not a complete phrase. Remember the question above, in 2, "are constituents phrases?". X' is usually a constituent, but not necessarily a phrase. It's a kind of hybrid, to the existence of which most minimalists do not subscribe.

What do we do with it? Well, any syntacticians keep using this notation just to mark the category, and that this is the constituent of the head + the complement. You can also just indicate this level with the category of the head, like this:

(8)

That's the notation that is often found nowadays (instead of the X') but please don't get confused. The "intermediate" X, the X with a circle around it, is not the head!

On the tree, you will see that sometimes I use the "categorial label" of the head, like T, V, C, and sometimes the word. Regarding this, there have been a lot of changes during the years. In the Government & Binding era, started with Chomsky (1981) (the so-called Pisa Lectures), when the bar level mentioned above was also in use, the representation of, say, V, was something like (9a). (9b) started getting used when the X' level was abandoned. (9c) was mainly used in early Minimalism (Chomsky 1995), when derivations were made directly with morphemes. Nowadays, we usually work with (9d), i.e. with features as nodes.

(9)

If you are reading these notes, you should really not worry about which of the four you should use. Just pick one and stick to it, and it will be fine.

3   From phrases to sentences

In Section 1, I told you that a sentence is represented by a VP-TP-CP diagram. Then we looked at example (4) and we could only find the VP. There was no way we could map sentence (4) directly into the diagram in (1).
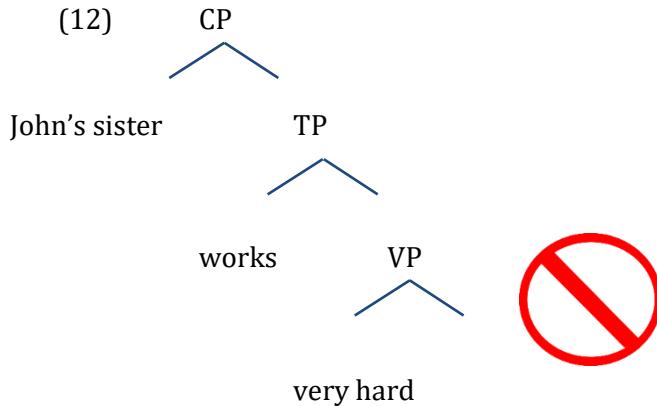
Recall sentence (4), here repeated as (10):

(10)   John's sister works very hard

This was the set of constituents:

(11)   a. [John's sister]   [Noun Phrase]
          b. [works]   [Verb Phrase] [VP! We know it!]
          c. [very hard]   [Adverbial Phrase]
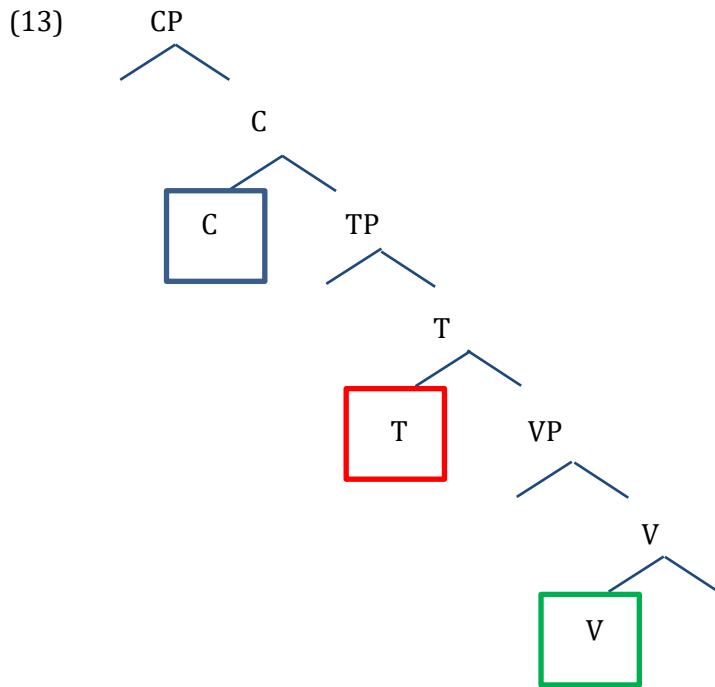
and now remember the question: Is [John's sister] a CP, [works] a TP, and [very hard] a VP? In other words, does the tree look like this?

(12)

You should know the answer by now, and the answer is NO (faints).
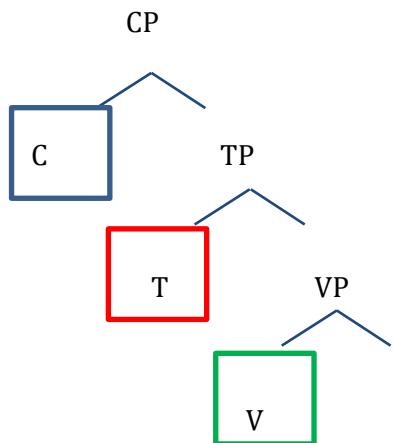
Why is this tree so very wrong that you could give a syntactician a heart attack if they saw it? For many reasons.

First, let us draw the tree of a sentence more properly, indicating the heads (in the squares):

(13)

A simplified version of (13) is in (14):

(14)

CP
├── C
└── TP
    ├── T
    └── VP
        └── V

> Remember that all phrases MUST have a head. We do not see the internal structure of these phrases, but we do see their heads.

Now, if we put (14) next to (10) we get:

i. *John's sister* is a C
ii. *works* is a T
iii. *very hard* is a V

!

i. and iii. are so wrong that they couldn't be more wrong if they tried hard. *John's sister* does not look remotely close to what could be an indicator of illocutionary force, like a complementizer (*that*), or some question marker. In the same way, *very hard* is in no way a verb.

Plus, i. and iii. are phrases. Heads are usually one element, because as we said they give the category to the entire phrase, and we need to know what this category is.
ii. is a little trickier. *Works* is a verb, but it is also tensed, so it could be in T (in fact, in many languages, like all the Romance languages, the finite verb is on the T head). In English, we know that the finite verb is not in T though (you'll have to trust me on this for now, or skip to Section 3.1.2 The position of the verb).

So how do we get from (11) to (14)?

3.1   How to build a sentence

Let's take our sentence again:

(15) a. [John's sister]   [Noun Phrase]
     b. [works]   [Verb Phrase] [VP! We know it!]
   c. [very hard]   [Adverbial Phrase]

We want to map it into a VP-TP-CP structure.

We start by identifying the verb. The verb is *works,* it is in V. The next thing we need to know is where we put the subject. The subject is always a noun phrase (or a determiner phrase – see Section 8 DP or NP?), and as such it cannot be a head. The subject is in the specifier of T. Intuitively, this is because the subject determines verb agreement. Verb agreement is on the T head, so the subject, in its specifier, is close enough to T to be able to "see" it and determine agreement.
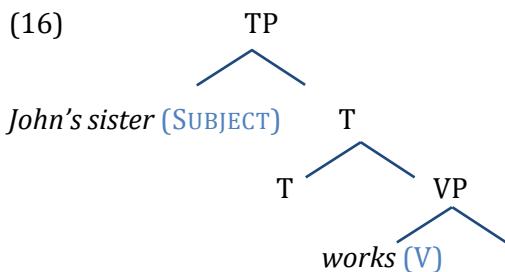
This idea of having elements very close to each other, and more precisely one in the specifier of the other, to have them agree or see each other, is a long standing one, which originated with Kayne (1989) and is still highly debated. The relation between a head and its specifier is usually called a SPEC-HEAD relation, and is a very strong one. We will not go into details. As usual, a good intro book will tell you more.

The verb is in V (or in T, in Romance for instance, see 3.1.2. The position of the verb). The object of a transitive verb in the complement position of the V. There is no object in this sentence, so the complement will be null. Nothing more (maybe).

3.1.1   The subject

The SUBJECT is in SPEC, T (or, in another, a bit more old-fashioned notation, SPEC,TP). The verb is in V in English, while it moves to T in Romance (see Section 9 What is movement?).

We can start by drawing at least a bit of the tree:

(16)

```
                    TP
                   /  \
  John's sister (SUBJECT)   T
                          /   \
                         T     VP
                                \
                              works (V)
```

Wait a minute! – you will say. You told us that the verb and its arguments are found in the VP! And now you are telling us that the subject is in spec, T.
Very good! You're paying attention. You'll have to wait a bit, until we talk about *movement* to understand this. A little spoiler: the subject *is* in the VP, but then it MOVES to spec,T. More, later.
See also Section 4 The verb and its arguments for different kinds of subjects.

3.1.2   The position of the verb

The finite verb in English is in V. In Romance, it is in T. How do we know? In short, a linguist called Pollock observed, in 1989, the difference in the mutual position of the adverb with respect to the verb in English and French. The sentences he used are (17) and (18):
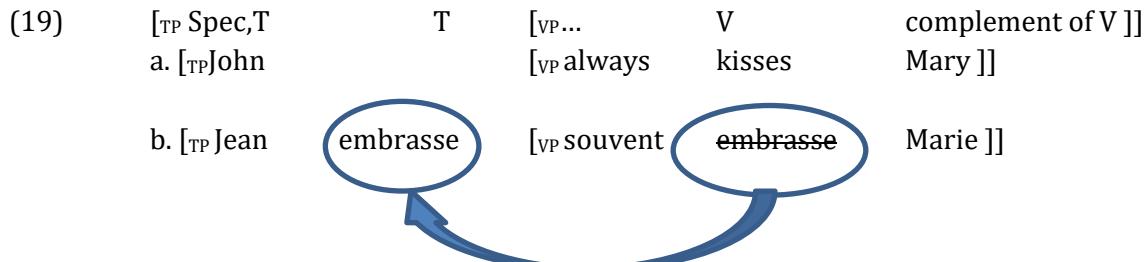
(17)   French (Pollock 1989:367)
Jean   embrasse   souvent   Marie
John   kisses   often   Mary
' John often kisses Mary'
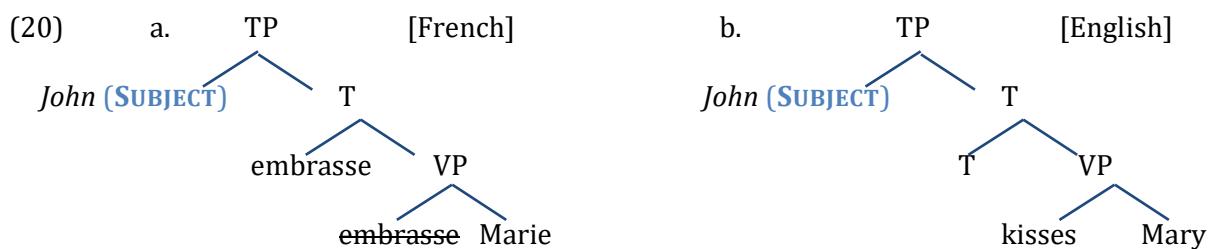
(18)   John often kisses Mary

If you look at the GLOSSES, which are the word-by-word translations, of sentence (17), you can observe, like Pollock, that the adverb follows the verb in French. In English, it precedes it. There were a lot of intermediate steps to get to this final formulation, but the conclusion is that the verb MOVES across the adverb in French (and in the rest of Romance) while it stays put in V in English (for more details, have a look at Pollock 1989).

So, here's what happens. Adverbs are like stones: they don't move. Other elements move around them. *Often* and *souvent* occupy the same position (how do we know? There is a very thorough study, by Cinque (1999), showing that adverbs all have the same order and occupy the same position across languages. Have a look at it. It's a great book!). Going back to our sentences, here's what happens:

(19)　　[$_{TP}$ Spec,T　　　　T　　　[$_{VP}$...　　　V　　　complement of V]]
　　　　a. [$_{TP}$John　　　　　　　[$_{VP}$ always　kisses　Mary]]

　　　　b. [$_{TP}$ Jean　　embrasse　　[$_{VP}$ souvent　~~embrasse~~　Marie]]

Translating this into a tree is quite straightforward:

(20)　　a.　　　TP　　　[French]　　　　　　b.　　　TP　　　[English]

John (**SUBJECT**)　　　T　　　　　　*John* (**SUBJECT**)　　　T

　　　　embrasse　　VP　　　　　　　　　　　　T　　VP

　　　　　　~~embrasse~~　Marie　　　　　　　　kisses　Mary

Going back to our original sentence, we now know the position of two of the three constituents. The subject *John's sister* is in Spec, T. The verb is in V. Where is *very often*? We will turn to that a bit further on, in Section 12 What is an adjunct? For the moment, suffice it to say that *very often* is NOT in the complement position of the verb, as it is not the object of the verb. It is just an adverbial! Let us now have a brief look at the verb and its arguments.

4　The verb and its arguments

We started this guide by saying that the VP is the phrase containing the verb and its arguments. The direct object of a transitive verb is always the complement of the verb, and we find it in complement, V position. Very straightforward.
We have also seen that the subject is in Spec,T; in fact, the subject starts out in the VP (but see later, Section 4.2. What is v?), and more precisely in spec, V (or, to be really accurate, in the specifier of v, little v, about which we will talk later). You need to beware, though, because not all verbs are equal, and therefore not all subjects are equal.

4.1　Different kinds of verbs, different positions for subjects. Unaccusatives and unergatives.

Transitive verbs are those verbs that have a subject and an object. The object, as we saw, is the complement of the V; the subject is its specifier (more or less, but see next section).
There is a class of verbs, though, called **UNACCUSATIVES**, whose subject is not in specifier position, but in complement position. These are intransitive verbs indicating change of state, movement, etc. If you want a fast way to recognize them: if you speak a language with HAVE-BE

auxiliary selection, unaccusatives are the intransitive verbs that select the auxiliary BE to form the present perfect. If you don't, read on.

Now, unaccusatives, like *die, become, grow* and *sink* have their subject in object position. That's because the subject is some sort of UNDERGOER, or THEME. It is for sure not an AGENT. If you die, or grow, that happens to you. You don't agentively die yourself, or grow yourself (Note that *kill* is a different verb, a transitive one, with an agent subject).

4.1.1   Theta roles
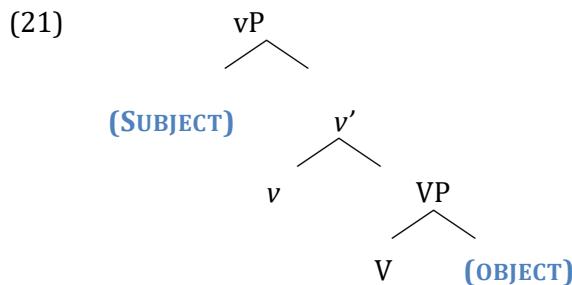
Undergoer, agent, PATIENT, theme, BENEFACTIVE, etc., are usually called THETA-ROLES. We will not go into this here. What you need to pay attention to is that sometimes the subject is in object position. Be especially careful with verbs of movement (or of motion) that are usually unaccusatives but feel like they have an agent. *Go, arrive, come*, etc., have their subject in complement position.

4.1.2   Unergatives

There is a third class of verbs, that are also intransitives, but do not belong to the unaccusative class. In Romance, their auxiliary is HAVE. These are verbs like *work, sleep, dream,* etc. Their subject, like that of transitive verbs, is in spec, V. Or, rather, in spec, *v*. They are called UNERGATIVES.

4.2   What is v?

Ok, it's time to reveal to you that the position where the subject of a transitive verb "appears" for the first time in a clause in fact spec, *v*. The notion of SUBJECT is in fact more complex than our intuition suggests, and has to do both with the position and with the theta-role of the NP. I will not go into that here. Please pick an intro to syntax to read more on the subject in generative syntax. The *v* (*little v*) head has the VP as its complement. It looks like this:

(21)

```
                vP
              /    \
    (SUBJECT)       v′
                  /    \
                 v      VP
                      /    \
                     V    (OBJECT)
```

The subject of a transitive or of an unergative verb is in the specifier of *v*. The *v* head was originally introduced as a transitivity head, precisely a head in the specifier of which the EXTERNAL ARGUMENT (which serves as the subject when it is present) would be located. It then changed its mission several times. Originally it was therefore absent from unaccusatives (that do not express transitivity).
Nowadays, you can find it in transitive as well as in intransitive verbs. In unaccusative verbs, *v* is often considered defective. This is not so important here. You should consider the *v*P as some sort of extended V. The phrase that contains the verb and its arguments is the *v*P.

The idea that the verb phrase contains an extra layer was first proposed by Richard Larson (1988) for DOUBLE OBJECT CONSTRUCTIONS (I give [a book] [to Mary]). The structure in (21) is usually called a VP-SHELL, or a LARSONIAN SHELL.

One more thing on the external argument: it is called external because it does not belong into the VP. There was a long debate in the '80s and '90s about whether the subject of transitive verbs is VP-internal or external. The debate is referred to as the VP-internal subject hypothesis. The *v* introducing the external argument was proposed by Kratzer (1996). Nowadays, there is consensus on the fact that the subject of transitive/unergative verbs is external to VP.

If you want to understand the intuition behind this subject-object asymmetry, with the object being internal to VP and the subject being external to it, and why the object is closer to the verb than the subject, you can consider some observations made by Marantz (1984). One of them: you need to know what the object is in order to determine what kind of subject you will have. Take for instance the verb *kick*. You can have different objects for it: if your object is *ball*, the subject of *kick the ball* will be an agent. If your object is *bucket*, the subject of *kick the bucket* will be an experiencer. Something similar holds for Italian, with the verb *mangiare* ('eat'). If the object is *pizza*, then your subject will be a pizza-eating agent. If the object is *foglia* ('leaf') then your subject will be an experiencer, since *mangiare la foglia* means something like "wake up and smell the coffee" (see Section 4.1.1. Theta roles).

To sum up: the subject of transitive/unergative verbs is in spec, v. It then ends up (via movement) in Spec, T (see Section 9 What is movement?). It is called an external argument. The subject of unaccusative verbs occupies instead the same position as objects, i.e. the complement of V. That subject usually moves to Spec,T as well (but sometimes just stays put, or, in technical terms, remains IN SITU. It depends on the kind of sentence).

Remember: the object of a transitive verb is the complement (see (7)). Occasionally, the subject can also be in complement position (when the verb is unaccusative, for instance). Nothing else can. So: no adverbs, no prepositional phrases, no modifiers of any sort. These are called ADJUNCTS, and have a special position in the tree (see Section 12, What are adjuncts?).
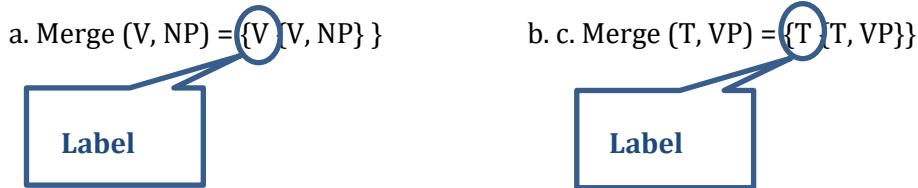
5   What is Merge?

So far, we have been talking about "positions in the tree", for the sake of simplicity. There was a time in which generativists thought that a tree like (21), including the X', was innate, and part of UG (UNIVERSAL GRAMMAR, which is something we will not discuss here). We know by now that that's not true. There is no evidence for such a component, neither from neuro-psychological experiments, nor from theory-internal considerations. Nowadays we just go the easy way, and we think that two syntactic objects are put together to build another syntactic object, which is a set containing them. The "stronger" element gives the label to the set.

Putting two elements together to form a set containing them is called MERGE. If you put together a head X and a YP, you have a set {X, YP}. The LABEL, or category (see Section 6, What are phi-features?) is given by the head (remember the very first section). If the head has the category X, the label will be X.

Every bit of the tree is built through Merge. We first Merge the V with its complement, then we merge the VP with T, and so on.

(22)

a. Merge (V, NP) = {V {V, NP} }   b. c. Merge (T, VP) = {T {T, VP}}

Label   Label

What this is saying is that we take two objects, V and NP, we put them together through Merge, and we obtain a complex syntactic object {V {V, NP}}, where the first V is called the LABEL, and it simply indicates the category of the complex object. In other words, if you put together a verb and its complement, the phrase you obtain is a VP (label, V). Very simple!

Observe that Merge does not determine the order of the constituents in the set. The order is determined externally, after syntax.

6   What are phi-features?

Imagine you want to have a grammatical rule saying: add *-a* to all feminine singular nouns in Italian (with some exceptions). You will have to select a set of all feminine singular nouns. [Feminine] indicates a class of syntactic objects to which the rule applies.

Features have that task: identify what some syntactic objects have in common, or identify a CLASS. Features were first proposed by phonologists, to identify classes of sounds that share something and are therefore subject to the same rule. For instance, the class of [voiced][1] consonants undergoes final devoicing in many languages, like German or Dutch. The feature [voiced] identifies then a class of consonants all showing the same phonological behavior.

In syntax, features have the same function. For instance, all finite verbs in Italian will have a person feature, i.e. they will express person (in their inflection).

Now, features are extremely complex, and not as straightforward as I am making it sound here. To understand syntax papers, you need to know the following:

PHI-FEATURES (or Φ-FEATURES) are: PERSON, NUMBER, GENDER, ANIMACY, DEFINITENESS. Some linguists consider CASE a φ-feature too. Φ is an abbreviation for formal, so φ-feature means formal feature. The most widely adopted feature model is the ATTRIBUTE: VALUE model. The attribute is the dimension that you are considering, like gender, or person. The value is its specification, like feminine, 2nd.

For instance, a verb like *mangi* ('you eat') in Italian will have the following feature specification:

(23)   Mang -i   ('you eat')
        ROOT [person: 2; number: singular]

---

[1] If you know about features, please don't be concerned with the way this feature is indicated. This is just for the sake of understanding the argument.

Note that φ-features are in the inflectional part of the verb, not in the root, which is the same (more or less) for the whole paradigm. Also notice that, in Italian, finite verbs do not express gender. This means that the attribute gender will be missing from the φ-feature set of Italian verbal inflection.

There are other ways of representing features. Instead of using gender: feminine we could say [+feminine], for instance. This is called a BINARY FEATURE SYSTEM. We could also just say that the word *casa* ('house') is [feminine]. If the word is masculine, the feature [feminine] will not be present. This is called a PRIVATIVE FEATURE SYSTEM.
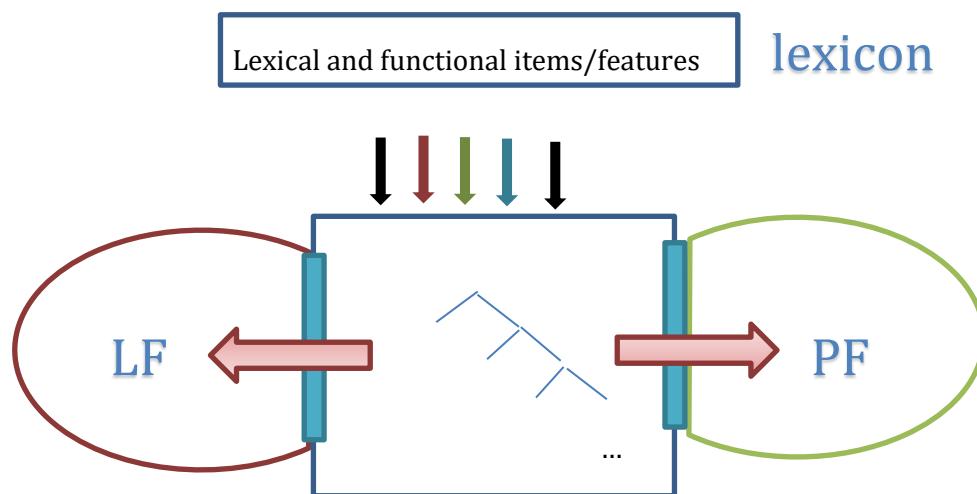
We can't go into more detail here. There is an endless list of readings on features. You can read the book by Harbour, Adger and Béjar (2008), you can read any introduction to syntax. Features are really important, as they drive syntactic computation, so you'd better familiarize yourself with them soon!

7   Where is syntax?

Generative syntax is quite clear about the architecture of language it assumes. We assume that language is MODULAR, which means that it is made up of separate parts, each of which is dedicated to a subpart of the grammar. The MODULES of grammar are SYNTAX, or NARROW SYNTAX (NS); LF (which stands for LOGICAL FORM) or CI (CONCEPTUAL-INTENTIONAL MODULE); and PF (which stands for phonological form) or SM (SENSORY-MOTOR MODULE). The idea is that elements are introduced into syntax from the lexicon; syntax works with them, and creates a complex expression, which is legible at the interfaces.

It works more or less like this:

(24)
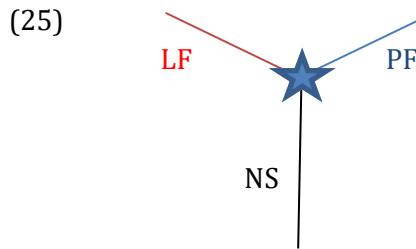
Syntactic items, like roots or features, are selected from the lexicon and put into Narrow Syntax (NS). Syntax does all it has to do with them (like magic!) and then produces a complex expression, which needs to be sent to other modules to be worked with. As you can see from the (bad) picture I made (if you have a lot of imagination), there are two modules that syntax talks to: LF (for Logical Form, which is the semantics/pragmatics module) and PF (Phonological Form, which is the morphology/phonology module). You can see that between NS and both PF and LF

there is some sort of "door", through which the expression produced by syntax needs to pass. That passage is called the "interface". You could imagine the interface between modules as being somewhat like Customs: if you want to pass through the customs with a passport which is not readable, you will be stopped. The same happens in grammar: if you want to pass from NS to PF or LF with an expression which is not READABLE AT THE INTERFACE you are going to crash. In technical terms, we say that A DERIVATION CRASHES AT THE INTERFACE IF IT IS NOT INTERPRETABLE by LF or PF.

7.1 The Y-model

You will have seen the Y model: that's a neater way to represent (24). The Y-model looks as follows:

(25)

The star (which is usually not drawn like this, but serves me to identify that precise point) is called TRANSFER, or SPELL-OUT (in older but still in use terminology) and represents the moment at which the complex expression becomes visible at the interface, it is "transferred" there (the moment the expression walks through Customs).

8 NP or DP?

What's the difference between NP and DP? They both represent noun phrases, but there are a couple of differences. The NP was born first, to indicate the noun phrase. DP stands for Determiner Phrase, and usually indicates a definite NP, an NP with the article, or a proper name. The two are sometimes used interchangeably, especially at the very beginning of your syntax course. Syntacticians use NP for bare noun phrases (indefinites, nouns without the article, bare plurals, etc).

In sum: if you are a starter, you can use NP and DP interchangeably. In older articles, DP is almost never used. The difference between them is that the DP refers to definite referents while NP refers to indefinites.
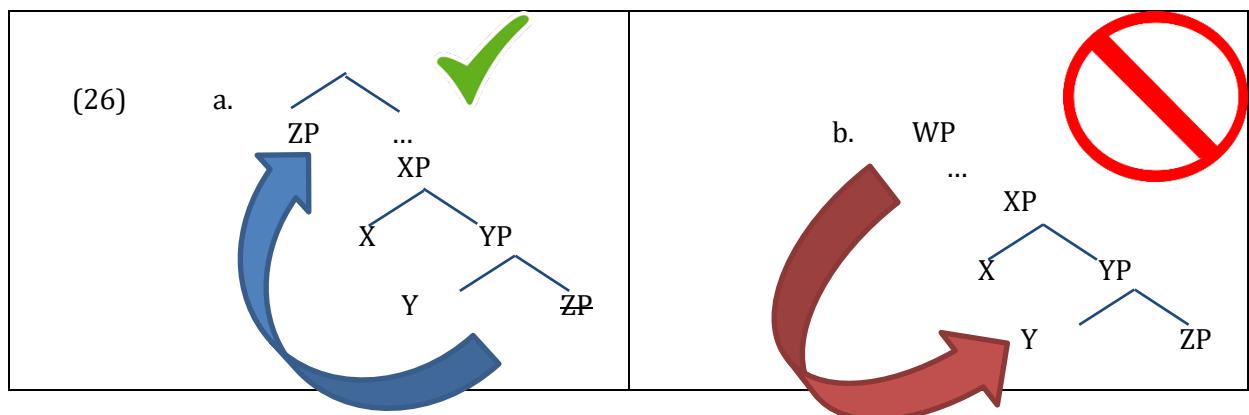
9 What is movement?

We have already seen that the finite verb occupies a different position in Romance than in English. We said that the verb MOVES. Do syntactic objects move? They do, in the sense that the position in which they are transferred is sometimes not their original position. Take for instance the sentence *What did John buy*? *Buy* is a transitive verb, and we know that it stays in the vP in English. The vP is the phrase where the verb and its arguments are first-merged (see Section 4.2,

What is v?). It constitutes some sort of semantic unit. We saw that the subject *John* ends in Spec, T. *What* is the object of the sentence, which means that it is first-merged with V (it is the complement of V). In this sentence, though, it precedes the subject. In fact, WH- ELEMENTS, i.e. all those interrogative elements that start with a *wh-*, like *what, who, when,* and so on, ARE IN THE SPECIFIER OF C. Regardless of why they have to be there, they end up in spec, C, which is very far from their original position (like complement of V, for *what did John buy?*).

We say that the object has MOVED from its first-merge position, and re-merged in spec, C. Remerge is also called I-MERGE, which means INTERNAL MERGE, which happens when an object is taken from the syntactic derivation and remerged to another element. E-MERGE (EXTERNAL MERGE) happens instead when an object is taken from the lexicon and enters narrow syntax (remember the picture in (24)).

Movement always takes place upwards, meaning that you can take an element that was already present in the sentence and merge it with an element higher up in the tree, but not the other way around. This is called the EXTENSION CONDITION (Chomsky, 1995). Remember that:
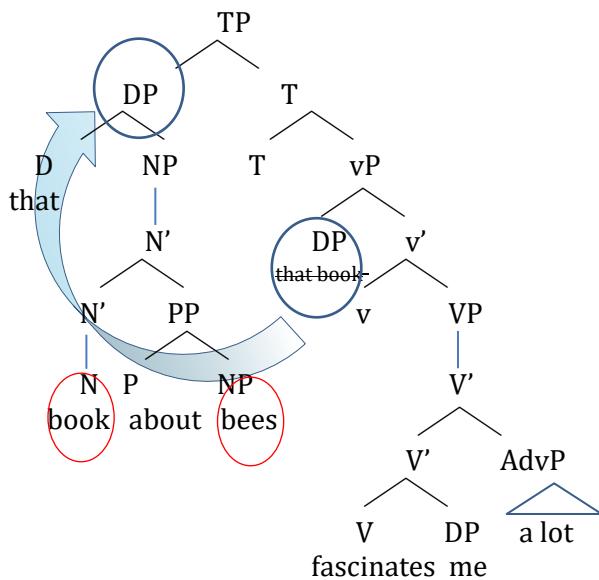

10 Structure and c-command

So far we have learnt how to read a tree and what it represents, but why do we need to represent sentences as trees and not as just strings of words, one after the other? That's because we know that phrases are organized HIERARCHICALLY, in sentences. There are several pieces of evidence for this. For instance, if linear order mattered more than hierarchy, we would expect the verb to agree with the phrase closest to it. This is not the case:

(27)   That book about bees fascinates me a lot

In (27), the verb *fascinates* is singular, and agrees with *book*, not with *bees*, which is the NP which is linearly closer to it. If you see the tree of this sentence it will be immediately clear that *book* is structurally closer (i.e. less embedded) to the verb than *bees*. Being more vs less embedded is relevant for syntactic computation, and not being linearly closer vs further away.

(28)
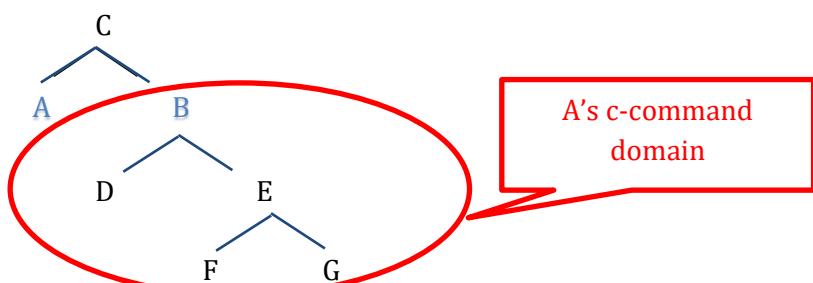
As you can see, *bees* is more embedded than *book*. *Book* is therefore structurally "closer" to the verb, and that's why it agrees with it.

If you have been paying attention, you will have seen that there are some parts of this tree that look a bit odd. You can see the same node appears twice in two instances (N', where *about bees* is attached, and vP, where *very well* is attached). This is called an ADJUNCTION structure, and *about bees* and *very well* are ADJUNCTS (see Section 12, What are adjuncts?)

10.1 C-command

So far we have defined measures and distances just impressionistically. It looks closer, it looks farther. That's not really scientific is it? There is in fact a much easier way to measure distance in the tree, and see what is in a relationship to what. One of the most important configurations in a tree is called C-COMMAND (for constituent command). C-command has been defined in various ways. The easiest way to identify the C-COMMAND DOMAIN of a node A, i.e. what A c-commands, is to look under A's sister.

(29)

B is A's SISTER: they are on the same level and share the same mother (C). B and all that appears BELOW B is in A's c-command domain.

11 What is the Left Periphery?
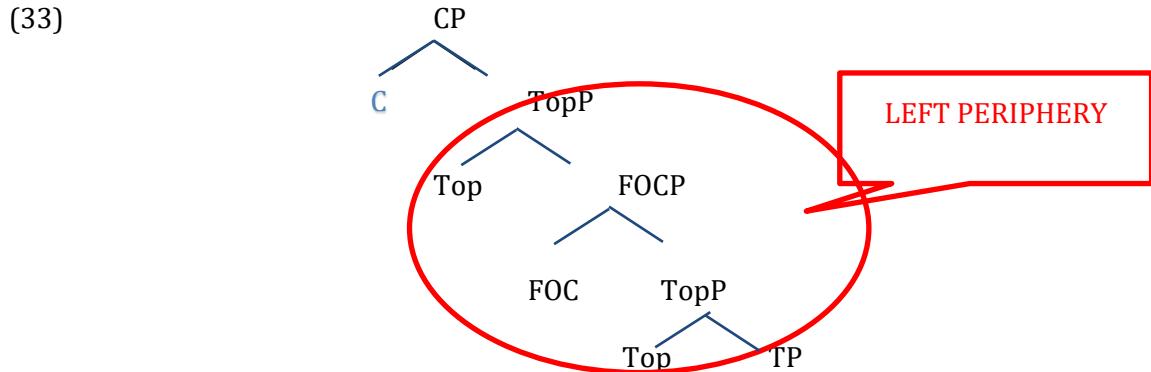
A sentence usually contains more information than just subject, verb and object. In particular, some phrases can be more prominent than others (they can be FOCUSED, like in (30)), or they can be TOPICALIZED, as in (31) for Italian, where topicalization is much more common than in English:

(30)   JOHN did it, not Mary
(31)   *John,* l'ho visto ieri (John, I saw him yesterday)

You can also have a topicalized prepositional phrase, like in (32)

(32)   *With that knife*, I'm not sure you can cut that meat.

These phrases are taken to appear between the CP and the TP, more or less like this:

(33)

The collection of all phrases that appear between C and T is usually referred to as the LEFT PERIPHERY of the clause (after Rizzi 1997). Observe that you usually have only one FOCUS (conventionally indicated in CAPS), but you can have more than one TOPIC in a sentence.

12 What are adjuncts?
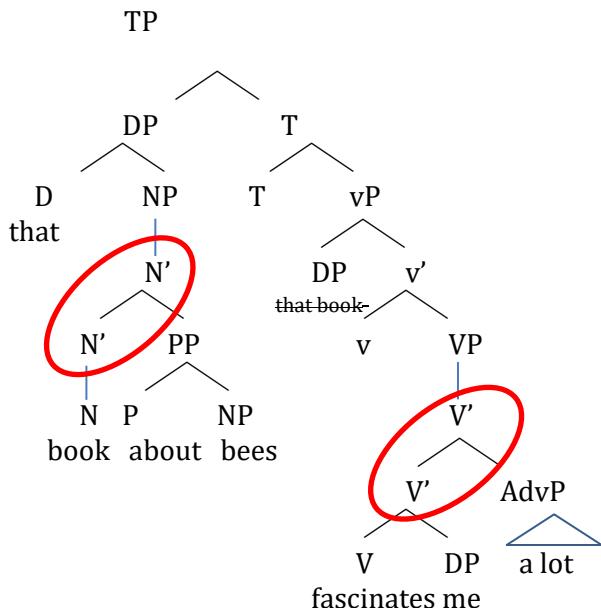
In Section 4, we talked about the verb and its arguments. There are, however, other phrases in a clause that are no arguments of the verb. Take for example (27) again:

(27)   That book [about bees] fascinates me [a lot]

What are *about bees* and *a lot*? As for *about bees*, it is not completely obvious whether it is a complement of the noun *book* or not. That nouns can have complements has been shown for instance by Chomsky (1970): nouns like *destruction, rejection, growth,* etc. need a complement (the destruction OF WHAT? The rejection OF WHAT?). For other nouns, like *book*, the issue is much more complex. Let us for the moment assume that "ABOUT WHAT" doesn't need to be specified about a book. What is *about bees* in (27) then? Even more straightforwardly, *a lot* is no argument of *fascinates*. The book does not fascinate mr. *a lot*: if fascinates *me*.

About bees, a lot, and any phrase providing information that is not strictly required by the verb or by the noun, is called an ADJUNCT. The question is now where to insert adjuncts in a clause, given that only arguments can appear in complement position to a verb or in the specifier of T.

To insert adjuncts, we use the following strategy: we iterate (repeat) one node, and create one more branch, where we attach the adjunct. For example, in the case of *a lot*, we know that this ADVERBIAL PHRASE [ADVP] modifies the verb (let's say the VP); the strategy is to repeat the V' node (or the VP node), and create a free branch to which we can attach the adverb (see 34). In the same way, since *about bees* modifies *book*, we create an extra layer of the N' level, to which we attach the PP.

Deciding where to attach adjuncts is not always easy. Some linguists prefer to attach adjuncts to X' nodes and others to the full XP (I am in the 2nd group, but not for these notes 😊). Just follow your intuition about what the adjunct modifies, do some exercises, and it will be alright!

This is all, folks (at least for now).

I hope you'll consider opening an intro book, so as to find out why we do the things we do, and why we do them in this way. if you wish to contact me for any reason, drop me an email at r.dalessandro@uu.nl.

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SYNTAX MADE EASY
How to read (and draw) syntactic trees

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